IFAD
Investing in rural people

People's Republic of Bangladesh

Smallholder Agricultural Competitiveness Project (SACP)

Final project design report

Main report and appendices

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Currency equivalents

Currency Unit	=	Bangladesh Taka
US$1.0	=	BDT 82

Fiscal year

1 July to 30 June

Weights and measures

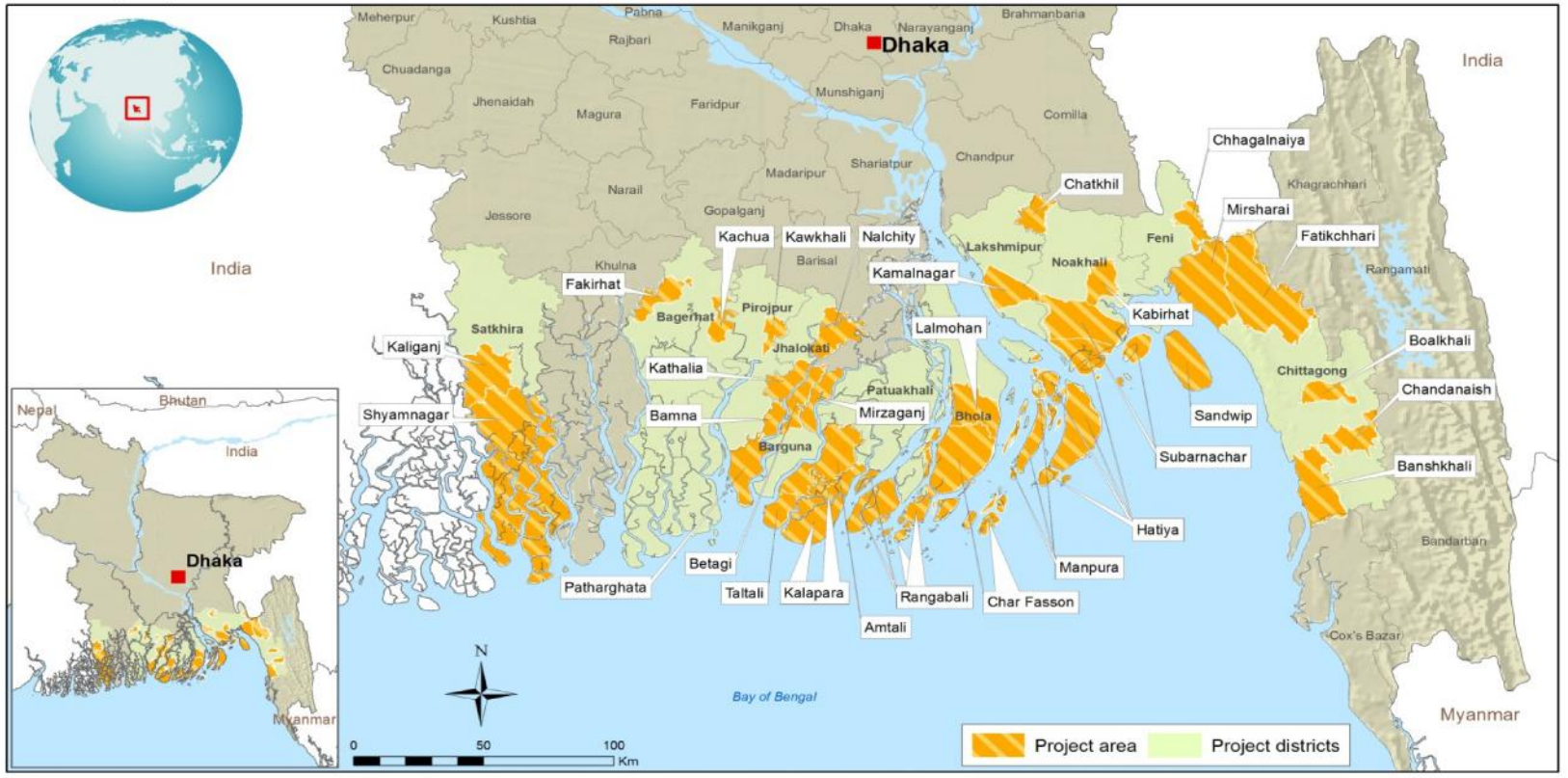
1 kilogram	=	1000 g
1 000 kg	=	2.204 lb.
1 kilometre (km)	=	0.62 mile
1 metre	=	1.09 yards
1 square metre	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare	=	2.47 acres

Abbreviations and acronyms

AIS	Agriculture Information Service
AWPB	Annual Work Plan & Budget
BADC	Bangladesh Agriculture Development Corporation
BARC	Bangladesh Agricultural Research Council
BARI	Bangladesh Agricultural Research Institute
BINA	Bangladesh Institute of Nuclear Agriculture
BJRI	Bangladesh Jute Research Institute
BRRI	Bangladesh Rice Research Institute
BSRI	Bangladesh Sugarcrop Research Institution
BWDB	Bangladesh Water Development Board
CIMMYT	International Maize and Wheat Improvement Centre
COSOP	IFAD Country Strategy Opportunity Paper
CPSU	Country Programme Support Unit
DA	Designated Account
DAE	Department of Agriculture Extension
DAM	Department of Agricultural Marketing
DCU	District Coordination Unit
GDP	Gross Domestic Product
ECA	Environmentally Critical Area
ERD	Economic Relations Division
ERR	Economic Return Rate
FAO	Food and Agriculture Organization of the United Nations
FCD	Flood Control and Drainage
FAPAD	Foreign Aided Projects Audit Directorate
FFS	Farmers Field School
FNPV	Financial Net Present Value
FRR	Financial Return Rate
FPMU	Food Planning and Monitoring Unit
FPM	Farmer Production and marketing
FM	Financial Management
GAP	Good Agricultural Practices
GoB	Government of Bangladesh
HVC	High Value Crops
HYV	High Yielding Variety
IFAD	International Fund for Agricultural Development
IRR	Internal Rate of Return
IRRI	International Rice Research Institute
IWM	Irrigation and Water Management
KMC	Knowledge Management and Communication
LGED	Local Government Engineering Department
M&E	Monitoring and Evaluation

MGF	Marketing Group Facilitator
MoA	Ministry of Agriculture
MoWR	Ministry of Water Resources
NAP	National Agriculture Policy
NARS	National Agriculture Research System
NWP	National Water Policy
OC&CAG	Office of the Comptroller & Auditor General
O&M	Operation and Maintenance
PD	Project Director
PHM	Postharvest Management
PO	Project Office
PRA	Participatory Rural Appraisal
PSC	Project Steering Committee
QMC	Quality Management Consultant
QPR	Quarterly Progress Report
RIMS	Results and Impact Management System
SAAO	Sub-Assistant Agriculture Officer
SCA	Seed Certification Agency
SFYP	Seventh Five Year Plan (FY 2016-2020)
SACP	Smallholder Agriculture Competitiveness Project
SRDI	Soil Resources Development Institute
TAC	Technical Advisory Committee
TOT	Training of the Trainers
UTF	Unilateral Trust Fund
WMCA	Water Management Cooperative Associations
WRPO	Water Resources Planning Organization
WMA	Water Management Association
WMF	Water Management Federation
WMG	Water Management Group
WUG	Water User Group
ZEEC	Zero Energy Evaporative Cooler

Map of the SACP project area



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Map compiled by IFAD | 30-08-2017

People's Republic of Bangladesh

Smallholder Agricultural Competitiveness Project

Financing summary

Initiating institution:	IFAD
Borrower:	People's Republic of Bangladesh
Executing agency:	Ministry of Agriculture
Total project cost:	US$109.85 million
Amount of IFAD loan:	US$64.5 million
Amount of IFAD grant:	US$2 million
Terms of IFAD loan:	Highly concessional: Maturity period of 40 years, including a grace period of 10 years, with a service charge of 0.75 per cent per annum
Contribution of borrower:	US$28.65 million
Contribution of private sector:	US$8.1 million
Contribution of beneficiaries:	US$6.6 million
Appraising institution:	IFAD
Cooperating institution:	Directly supervised by IFAD

Executive Summary[1]

1. **Background**. Bangladesh is a lower middle-income country with medium but declining rates of poverty among its 160 million people. Sustained economic growth along with steady agricultural improvement has been fundamental to this reduction. Sustainability of growth, particularly agricultural growth is, however particularly vulnerable to climate change. Given that the agriculture sector remains fundamentally important to the country's prosperity and it utilises three-quarters of the scarce land space of Bangladesh and supports the livelihoods of the majority of the population, it is passing through some immediate challenges in promoting sustainable development. The challenges include continuing to increase production and achieve recognizable quality standards despite loss of land to other uses and climate change.

2. *Rural poverty*. The proportion of the population living under $1.25 a day fell from 49 percent to 24.8 percent between 2000 and 2015[2], effectively lifting millions of people out of poverty during the period. Overall poverty has declined during the last decade. However, poverty in rural areas remains around 36[3]percent and has not declined as fast as in urban areas. Additionally, the proportion of people living in extreme poverty in rural areas is still three times higher than in urban areas.

3. *Women and Youth. Women* are particularly affected by poverty, as they have fewer opportunities for employment than men and bear the responsibility of caring for their families. With a 'demographic dividend' of young adults entering the labour market in the country, rural youth may be more attracted by labour or employment migration to the urban areas, as they are among those who find difficult to be involved in agriculture due to the lack of assets and skills. In general, the youth are motivated and dynamic; inclusive and tailor-made measures can turn them into viable socio-economic actors. Needs of female and male youth will be specifically prioritised.

4. *Food and nutrition security*. Rural poverty is closely linked to food security. For the average rural household, about 71 percent of calories come from rice[4]. In the last 20 years, consumption of cereals (including rice) decreased, in absolute and relative terms, and average per capita consumption of all other food groups increased, indicating improved dietary diversity. However, progress in diet diversification was slower in rural areas compared to urban areas.

5. **Project area.** In Bangladesh, 24.8 percent of the population are living below the poverty line, with Barisal Division in Southern Region having the highest number of poor people (39.4percent). According to the 2008 agriculture census, there were about 3.1 million farming households in southern Bangladesh, with 2.7 million rated as smallholders. The region is susceptible to exogenous shocks, which have the greatest impact on poor people, including cyclones and storm surges, land erosion, limited livelihood opportunities, resource degradation, salinization, flooding and water logged soils.

6. The project will be implemented in 11 districts covering 30 upazilas in the Southern Region of Bangladesh, 250 unions will be selected based on the targeting criteria.

[1] Mission composition: Mr. David Doolan, FAO Deputy Representative, Bangladesh, Ms. Wanaporn Yangyuentham, Monitoring and Evaluation Advisor (IFAD), Ms. Lalita Bhattacharjee, Senior Nutritionist (FAO), Mr Anil Kumar Das, Agricultural Extension Specialist (FAO), Mr Khairul Islam, Value Chain Specialist (IFAD), Mr. Asifur Rahman, Procurement Specialist (IFAD), Mr Yanoma Yukitsugu, Economist and Financial Analyst (FAO), Mr Imanun Nabi Khan, Producer Group Mobilization and Technology Specialist (FAO), Mr Mahbubul Islam, Irrigation and Water Management Specialist (FAO), Ms. Cora Dankers, Agribusiness Officer, FAO Investment Centre, Asia and Pacific Service, joined the mission to develop the separate section of TA., Mr Álvaro Fernandez, Financial Management and Fiduciary Specialist (IFAD), Ms. Sherina Tabassum, IFAD Country Programme Officer in Bangladesh, Mr. Benoit Thierry, IFAD Country Programme Manager for Bangladesh and Mr. Peter Yuexiong Situ, Mission Leader.

[2] Millennium Development Goals: Bangladesh Progress Report 2015

[3] http://www.ruralpovertyportal.org/web/rural-poverty-portal/country/home/tags/bangladesh

[4] World Food Programme Bangladesh Country Strategic Plan (2017–2020); http://documents.wfp.org/stellent/groups/internal/documents/projects/wfp291457.pdf

7. **Target group and targeting strategy**. The total population is more than 7,000,000 in the target 30 upazilas of 11 project districts, representing more than 1,246,000 households. The project will directly benefit at least 250,000 rural households. The selection of project beneficiaries will be undertaken based on an inclusive targeting strategy focusing on landless, marginal and small farmers, with up to 80 percent of beneficiaries coming from these categories. Youth will constitute up to 20 percent of beneficiaries and women participation will target at least 30 percent involvement. The Project will be implemented over a period of six years.

8. The project will take farmer groups as its entry point for support to enhance production and value chain development in the project areas. The project will focus on strengthening agriculture competitiveness, strengthening sustainable technical support services/facilities, identification of market opportunities and linking these to an applied research, development and extension programme to support small farmers, improving access to income opportunities of high value crops through multi-stakeholder platforms, developing market linkages, and supporting individual and group organizational capacity to participate in agricultural value chains.

9. **Project goal** is to contribute to Bangladesh's agriculture smallholders' responsiveness and competitiveness in high value crops (HVC[5]) production and marketing of fresh and/or processed products.

10. **Project objective** is to increase farmer income and livelihood through demand-led productivity growth, diversification and marketing in a changing climatic condition.

11. **Duration**. The Project will be implemented over a period of six years. SACP will adopt a 'push-pull' strategy to achieve the project objective. It will enhance the capacity of targeted farmers to address their barriers to entry into the market system (i.e. push strategy) and facilitate the development of a more inclusive market system (i.e. pull strategy). While Component 1 focuses on making farmers more productive in producing high value and high-demanded crops through accessing improved production knowledge and technology, Component 3 supports in improving their access to irrigation water. The produced goods need to be marketed in a competitive manner by conforming to buyers' requirement where Component 2 steps in and builds producers' capacity accordingly.

12. **Components**. The project will support production enhancement, identify market opportunities for both fresh and processed products, value added post-harvest management, build competitiveness in HVCs to move households from subsistence farming into commercial farming through three technical components supported by a project management component. They are:

- Component 1 - Enhanced production of HVC and technology adoption
- Component 2 – Processing and marketing of HVC
- Component 3 – Climate resilient surface water management

13. The project also builds on the assumption that with the opening of the Padma bridge in 2018, many farmers of the southern districts will have increased opportunities to sell their products to Dhaka markets (high value crops, vegetables, legumes and fruits), the shortened transit times will expand the opportunities for high value fresh produce that is properly picked, packed and transported and where the project can play a significant role in improving current practices. The focus will be to enhance production quantity and quality through appropriate productive infrastructures, quality agriculture inputs and training of farmers and value chain actors, as well as, linking farmers and their groups to private dealers and traders to enhance fair contract farming 6 and postharvest and processing contracts.

[5]Legumes, Vegetables and Fruits.
[6]Using enhanced local practices and following the contract farming legal guide issued in 2015 : http://www.unidroit.org/work-in-progress-studies/studies/contract-farming

14. *Component 1 -Enhanced production of HVC and technology adoption*. The objective of Component 1 will be the identification and prioritisation of appropriate VCs for smallholder investment and associated key research gaps that need to be filled through on-farm research. The purpose of the component is to develop the capacities for linking farmers to markets. This component will support the testing, evaluation and adoption of new technologies and management practices by smallholder farmers to enhance their production of HVCs that have identified market opportunities. This component will contribute to developing agricultural competitiveness linked to market demands by: (i) assessing the market demand for HVC that can be produced in the south, (ii) identifying research demands for evaluation of new cropping systems, new crops and/or new varieties and improved post-harvest management storage options, (ii) strengthened research-extension and private sector service provision, and (iii) organizing producers and marketing groups to form greater scale and bargaining power.

15. *Component 2 - Processing and marketing of HVC*. This component will support small holders to access market in a more efficient manner through creating a conducive business environment for private sector to reach them. In parallel, promising rural agro-enterprises (individual farmer, farmer groups and/or rural entrepreneurs) will be assisted to add value to primary products and penetrate market through value-added products. Besides, village-level food processing will be promoted to encourage nutrition and food-safety along the value chains. Value addition will be through improved post-harvest practices, processing, storage, and transport of agricultural commodities. Activities will focus on (i) capacity building of DAMs (ii) developing a demand-driven extension approach within DAE and DAM and by engaging private sector, (iii) linking with private sector buyers (v) developing opportunities for village-level food processing, and (vi) developing existing and potential rural enterprises' ability to manage sustainable rural agro-enterprises.

16. *Component 3 - Climate Resilient Surface Water Management*. The activities under component 3 will support households interested in increasing their productivity and diversification to HVCs with water infrastructure that will provide supplemental or full season water access, through a range of investments in water storage and provision to cropland, with associated capacity development for households and groups to manage this water infrastructure. All activities in this Component will be closely associated and enhance initiatives of value addition under Component 1 and 2 – the location and scale of interventions will depend on identified and prioritised food production and cash crop production activities and their need for supplemental and full crop season irrigation. Considering the experience and capacity of minor irrigation and drainage development, the Bangladesh Agriculture Development Corporation (BADC) is proposed to implement activities under component 3. The BADC has a well-organized irrigation division headed by Chief Engineer (GOB grade II official). The activities under Component 3.2 (institutional support/capacity building) will be outsourced through competitive bidding where applicable. Some short-term consultancy provisions have been proposed for ensuring sustainable water user groups formation and community participation in O & M in line with the participatory water management rule, environmental aspects in water management.

17. **Implementation arrangement**. The overall responsibility for SACP will be assumed by the Ministry of Agriculture (MoA), which is the implementing ministry. The Project will be implemented under the overall direction of a Project Steering Committee (PSC). A Project Implementation Committee (PIC) will be formed to provide technical guidance and bring in synergy with stakeholders and partners other than the MoAs. The PIC will play the role of technical exchange platform and synergy building among different development projects, where good practices and lessons learnt can be drawn to support the SACP implementation at operational level, and shared for cross-benefits. Structure of operational management and coordination will be established along the DAE vertical structure from central to the Union, with DAE, DAM, BADC, and BARI participation at applicable levels where available, and managerial and technical officers appointed from respective agencies.

18. *Project Office*. The implementing ministry will establish a SACP Project Office by appointing a Project Director in charge of the SACP operational management and coordination. The Project

Office will include a management team of government-deputed officers and support staffs provided by the government, and a technical team of externally recruited experts funded by the Project. The Project Office will be headed by the Project Director and supported by Component Directors seconded respectively from the implementing line agencies of DAE, BADC, DAM and BARI . The Project Director at the Project Office will assume the overall responsibility for project management and coordination. An Operational Support Team will be recruited through external and open process to assist the PD. The Project Coordinators will also have staffs to manage and operate day to day activities including financial management, M&E and Knowledge Management, procurement and project coordination.

19. *District Coordination Unit (DCU)*. A district Coordination Unit will be established as technical hub and composed of one lead technical officer from each of the District DAE, DAM, BARI and BADC, and other necessary staff (junior level experts) required in all the project districts. The DCU will be embedded in the respective District DAE office. Under the over direction of the Project Director at the Project Office, the DCU will be led by the Deputy Director of District DAE and it will be responsible for coordination of the project activities implemented by the district project line agencies and/or other contracted service providers, ensuring operational coordination through the structure of upazila and union offices to the grassroots level, ensure the timely and operational functions in the areas of project financial management, M&E and KM, procurement support and follow-ups, at its own level and the lower levels. It will collect physical and financial periodic progress reports from the involved implementing agencies, maintain district consolidate records, prepare reports and deliver them to the Project Office. Upazila and Union DAE Offices' Participation. DAE offices at Upazila and Union will participate in extending the operational coordination from the DCU to the target groups. Upazila Agricultural Officer and Union Sub-Assistant Agriculture Office (SAAO) will be the focal persons for the implementation coordination. DAM will engage through outsourcing Marketing Facilitators at upazila level to work with the farmer groups in the unions. In each union, three lead farmers will be selected from the selected farmer groups and they will be engaged on a basis of daily remuneration in accordance with actual support to the field work of upazila officers of DAE, BADC and DAM marketing facilitators.

20. **Private sector**. The project will create a congenial environment for Public, Private and Producers Partnership (4Ps) so that private inputs companies, agro-processors, wholesalers, traders and exporters could also assess potentialities of HVCs in southern delta, their business expansion, market linkages and work together with government agencies for investing with the SACP producer and marketing groups. Private enterprises, cooperatives and farmers' organizations engage in supply of goods and services, marketing or related fields will be called to support the project implementation as service providers. This is crucial in institutional capacity building, as there would be a closer market access to economic opportunities by building commercial bridges between HVC producers and consumer groups using instruments such as market information, training, joint pilot programmes, contract farming, applied technologies.

21. **Technical Assistance**. A separate fund of USD 3 million from the IFAD SACP financing will be used for Technical Assistance (TA) by FAO to the SACP Project Office and implementing agencies. The fund will be managed and implemented by FAO Bangladesh under the direction of and in agreement with the Project Director, with support from FAO Country Office and technical units in the Region and from HQ.

22. **The TA component** will provide technical assistance (national and international) and capacity building targeted at specific areas that will benefit from strengthening among government project implementation partners. TA activities will concentrate on: a) training of trainer's activities and follow-up coaching, b) assisting the development of a benefit M&E system and c) support to background studies. Expected Outcome: The capacity of implementing agencies has been strengthened to successfully implement the Smallholder Agriculture Competitiveness Project and reach expected SACP results.

23. **Cost and Financing**. Total Project Costs is estimated at USD 109.85 million. This is inclusive of all contingencies of USD 3.99 million, beneficiary contribution in the form of participation at USD 6.6 million and USD 8.1 million private sectors, USD 28.65 million will be funded from the government including staff salaries, rentals and in the form of waiver of taxes and duties.

24. *Financing plan*: The proposed financiers for the Project are IFAD loan, the Government, beneficiaries, private sector, and IFAD grant. IFAD PBAS loan will finance about USD 64.5 million about 58.7% of total project costs, the government counterpart funding will be about USD 28.65 million (26.1% of the total project cost) including taxes. The IFAD grant is estimated at USD 2 million (1.8% of the total project cost).

25. **M&E and knowledge management**. Results-based management approach will ensure all processes and activities of the project are in line with the project goal, objectives and expected outcomes. As part of this approach, planning, monitoring and evaluation will be results-oriented to enable tracking of progress towards the project outputs, outcomes and sustainability. Learning and experience sharing will be the main part of knowledge management.

26. **Summary benefits and economic analysis**. The SACP economic and financial cost benefit analysis estimated that the project investments in enhanced production of high-value crops, processing and marketing of high-value crops, and surface water management would result in agricultural diversification and productivity increase. The analysis estimated the following benefits: (1) increased production and productivity of high value-added crops (non-paddy crops); (2) improved agricultural technology and practices that increase productivity; (3) improved water security for agricultural production to reduce water availability risk due to salinization and seasonal fluctuation; (4) improved marketing, post-harvest management, and value addition (agro-processing); (5) labor and job creation.

27. The project as a whole was estimated to have an economic rate of return (EIRR) of 17.6 percent, and the net present value (NPV) was around USD 43.99 million. The economic return would be robust, and the return could be maintained above the hurdle rate of 10% even with a cost increase and benefit decrease of 20% as well as a delay of benefit generation for 2 years.

28. **Adherence to IFAD policies and national policies**. The SACP is well in line with the national strategies in poverty alleviation, agriculture and rural development and climate change adaptation. The Project responds to the Government's Southern Master Plan by channelling its investments fostering the responsiveness and competitiveness of rural smallholders in horticulture HVCs in Southern Bangladesh. The Project objective and interventions refer directly to the overarching goal of the IFAD Strategic Framework 2016 – 2025, aligning its investments with transforming the agricultural sector towards higher, sustainable and climate-smart productivity, profitability, commercialization, connecting the smallholder farmer and rural households to market opportunities and improved support services to generate more income for improved livelihood, food and nutrition security.

29. **SECAP**. The environmental and social risk of the project falls under the category B in view of little or negligible adverse impact potential on natural and social environment, while it also falls under category 'High' regarding climate change risks.

30. **Risk identification and mitigation**. The Project design aligns the IFAD investments with the Government's development policies and strategies in poverty alleviation, agriculture and rural development; it is based on the development needs and priorities that related stakeholders and beneficiaries identified and proposed. Risks associated to the Project should therefore relate to the uncertainties caused by the climate changes, and the fast-changing socio-economic environment, or being of operational nature mostly. Several risk factors have been identified and reviewed in accordance to their coherence to the Project. Some of them are closely associated to the project implementation, others more on a continued basis. Related mitigation measures have been proposed.

Logical Framework

Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	**Baseline**	**YR1**	**Mid-Term**	**End Target**	**Source**	**Frequency**	**Responsibility**	
Outreach: Direct beneficiaries receiving project services	Corresponding number of households reached Number of persons receiving services promoted or supported by the project	0 0		125,000 700,000	250,000 1,400,000[7]	Progress report, Baseline, Mid-Term Outcome survey, PCR, Impact assessment	Bi-annually, yearly	Lead agency and IAs	
Goal: To contribute to Bangladesh's agriculture smallholders' responsiveness and competitiveness in high value crops (HVC) production and marketing of fresh and/or processed products									▪ Increased profitability of HVC production will lead to greater investment in HVC and trade success
Development Objective: To increase farmer incomes and livelihood through demand-led productivity investments, crop diversification and increased market linkages.	Number of beneficiary HHs reporting HVC production as main source of revenue with at least 20 percent income increase Percentage of households reporting improvements in household asset ownership index	TBD 0		75,000 25%	150,000 50%	Baseline, Mid-Term Outcome survey, Progress report, PCR, Impact assessment	Baseline, midterm and completion	Lead agency	▪ Availability and uptake of improved technologies and farming systems ▪ Steady market demand and conditions ▪ Incomes increase through a combined effect of increased HVC production and improved marketing.

[7] The average people per HH in the project area is 5.6

Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	Baseline	YR1	Mid-Term	End Target	Source	Frequency	Responsibility	
Outcome 1: New and existing technologies researched, developed and adapted to agro-ecological constraints	Number of farmers reporting adopting of new/improved inputs, technologies or practices RIMS	0		100,000	200,000	Progress Reports	Yearly	Lead agency, IAs	▪ Willingness and mutual benefits to producers and companies
	Number of farmers reporting an increase in production RIMS	0		100,000	200,000				
Outputs: 1.1 Supporting organizational development of farmer groups in HVC technology requirements.	Farmer groups formed or mobilized	TBD		5,000	10,000	Surveys; Progress reports	Bi-annually, yearly	Lead agency, IAs	▪ Responsive to agro-ecological constraint and market demands.
	Number of rural producers accessing production inputs and/or technological packages RIMS	TBD		100,000	200,000				
1.2 Adaptive trials of new or existing technologies under farm field conditions	Number of persons trained in production practices and/or technologies RIMS	0		125,000	250,000	Surveys; Progress reports	Bi-annually, yearly	Lead agency, IAs	▪ Farmers are interested in and have capacity to adopt improved technologies
	Number of market led FFS organized	0		750	1,500				
	Number of demonstrations during field days on different HVC crops	0		5,000	10,000				
1.3 Improving access to district market-led research and extension facilities.	Number of research stations upgraded/rehabilitated	0		10	23 (BARI: 8 and DAE offices and training centres: 15)	Progress reports	Bi-annually, yearly	Lead agency, IAs	▪ Properly targeted rehabilitation contributes to local research efforts.

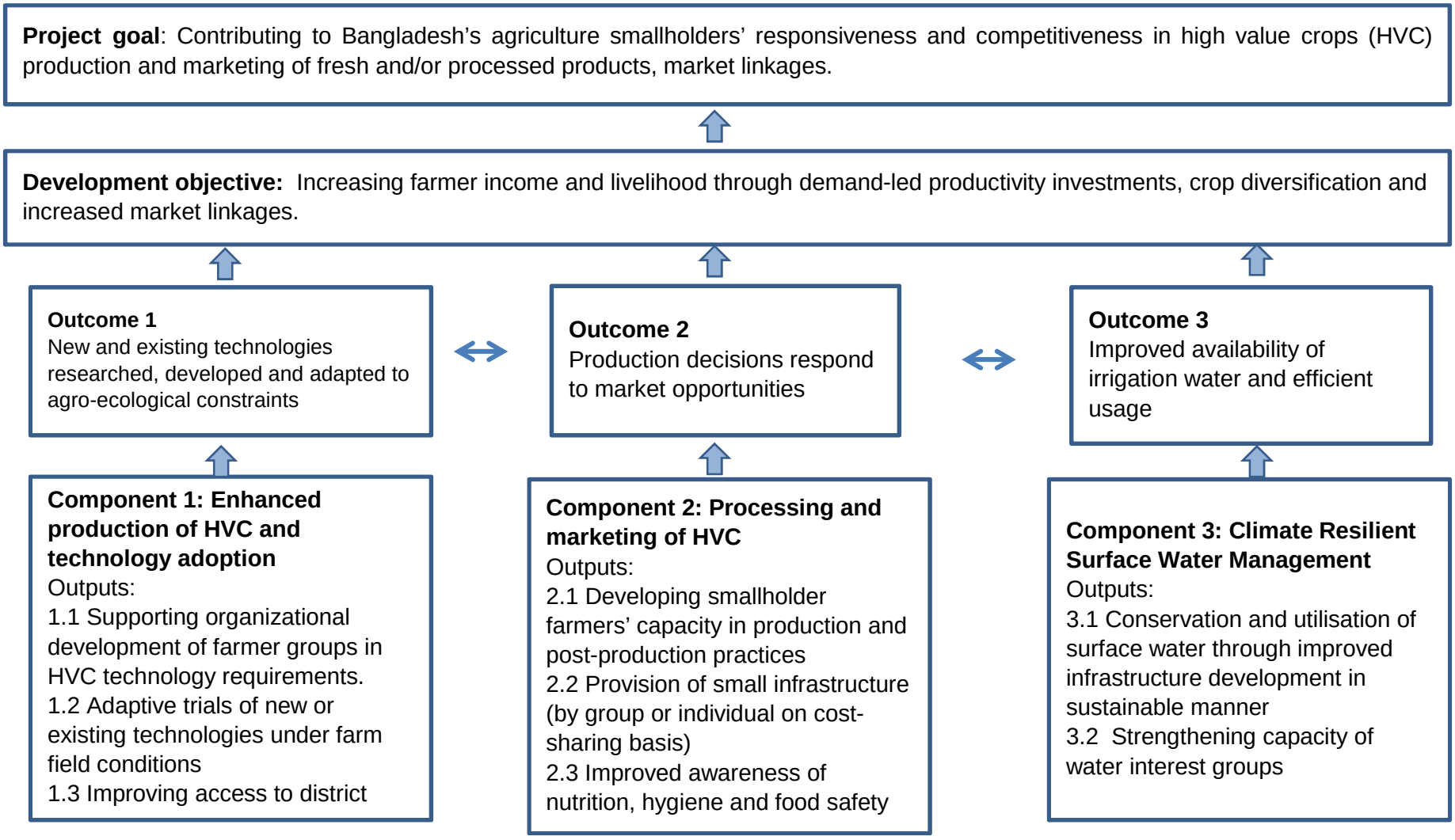
Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	Baseline	YR1	Mid-Term	End Target	Source	Frequency	Responsibility	
Outcome 2: Production decisions respond to market opportunities	Number of farmers reporting an increase in sales and/or increase in profit RIMS	0		100,000	200,000 (or 80%)	Producer surveys; Progress reports	Yearly	Lead agency, IAs	
	Number of women reporting improved quality and diversity of their diets RIMS			10,000	20,000				
Outputs: 2.1 Developing smallholder farmers' capacity in production and post-production practices	Number of rural farmers trained in post-harvest handling techniques and marketing			125,000	250,000	Progress reports	Bi-annually, yearly	Lead agency, IPs	
	Number of functioning multi-stakeholder platforms supported RIMS			6	11				
2.2 Provision of small infrastructure (by group or individual on cost-sharing basis)	Number of processing and storage facilities constructed or rehabilitated under matching grant			150	300	Progress reports	Bi-annually, yearly	Lead agency, IPs	
2.3 Improved awareness of nutrition, hygiene and food safety	Number of women provided with targeted support to improve their nutrition RIMS			5,000	30,000	Progress reports	Bi-annually, yearly	Lead agency, IPs	▪ Training will raise awareness and lead to behavioural changes
Outcome 3: Improved availability of irrigation water and efficient usage.	Number of households reporting reduced water shortage vis-à-vis production needs RIMS			50,000	100,000	Progress reports; baseline, mid-term and impact assessment	Yearly	Lead agency, IPs	▪ Sufficient access to services is available, e.g. to technicians, facilities, etc.

Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	Baseline	YR1	Mid-Term	End Target	Source	Frequency	Responsibility	
Outputs: 3.1 Conservation and utilisation of surface water through improved infrastructure development in sustainable manner	Number of surface water technologies for irrigation constructed			2,100	4,290	Progress reports	Bi-annually, yearly	Lead agency, IPs	
3.2 Strengthening capacity of water interest groups	Number of people in water user groups trained and participated in trainings, cross visits and demonstrations			6,500	13,000	Progress reports	Bi-annually, yearly	Lead agency, IPs	▪ All relevant stakeholders are consulted and actively participate

These indicators will be disaggregated by sex and age groups where possible.

Youth will constitute up to 20 percent of beneficiaries and women participation will target at least 30 percent involvement.

Project overview



Component breakdown

C. 1 **Enhanced production of HVC and technology adoption**	1.1: **Assessment of HVCs and group mobilization** : VC mapping assessment, village-level assessment and prioritisation of potential VC, identification of existing groups, recruitment of production facilitators , Training of Trainers (ToT) for SAAOs and production facilitators, PRA for group formation and mobilization, identification and prioritization of technology and research needs for selected crops	**Technical assistance**
	1.2: **Demand-driven production and market-led research:** identification of action research needs, action research on climate smart technologies, evaluation of stress tolerant varieties, evaluation of appropriate, mechanization options, research on on-farm post-harvest storage and agro-processing and multiplication of seeds/planting material of HVCs	
	1.3 **Institutional support for research and extension:** formation of implementation team, development of comprehensive work and budget, timely procurement and efficient use of equipment and goods, develop and implementation and effective monitoring system, regular and effective coordination, regular follow-up of monitoring and evaluation activities, proper capturing of information, documentation and reporting	
C. 2 **Processing and marketing of HVC**	2.1: **Improving market linkage:** buyer mapping and assessment, agreements with buyers, business management skills development, formation of multi-stakeholder platforms, farmer training on post-harvest and primary processing and promotion of agro-processing enterprises	
	2.2: **Post-harvest and processing investments:** post-harvest management and quality assurance, small scale food processing operations and quality assurance, establish small scale pack house, utilization of postharvest machinery, establish Small Scale Food Processing Facilities	
	2.3: **Development of food safety and nutrition measures along the value chain:** Food safety and nutrition training of trainers, Training on community based safe food processing, Training on product and nutrient labelling, Behavioural change campaign	
C. 3 **Climate Resilient Surface Water Management**	3.1 **Sustainable surface water management, drainage, conservation and utilization:** crop protection dyke, re-excavation of canals, construction of on-farm water management structures, pond excavation, promotion of solar irrigation pump sets and drip irrigation, installation of buried pipe system, provision of hose pipefor irrigation scheme	
	3.2 **Institutional support for Capacity Building:** vertical expansion of existing office building, construction of Zone and unit office/training centre, construction of boundary wall for South Central zone, oversea training, seminar and workshop, KM documentations and training manuals	

Strategic context and rationale

A. Country and rural development context

1. **Socio-economic profile**. Bangladesh is a lower middle-income country with high—but declining rates of poverty among its 160 million people. Sustained economic growth was fundamental to this reduction: from 2000 to 2016, Bangladesh averaged GDP growth of 5.72 percent, reaching the highest in 2016 at 7.05 percent. Bangladesh made strong gains in education and healthcare during that decade, and it achieved most of its MDG targets. It is transforming from an agrarian-base to an industrialised economy, with a 'demographic dividend' of young adults entering the labour market (50 percent of the population is under the age of 25). In addition to demographics, increasing urbanisation, growing middle class affluence, and population growth all impact Bangladesh's economic prospects[8].

2. **Vulnerability to climate change.** Bangladesh is particularly vulnerable to climate change. Two-thirds of the country lies at less than five meters above sea level, making it one of the most flood-prone countries in the world. Severe flooding during the monsoon season causes significant damage to crops and property, with major adverse impacts on rural livelihoods. According to the Third National Communication of Bangladesh to UNFCCC, the INDC and the BCCSAP have recognized high vulnerability of Bangladesh's coastal zone and its inhabitants, especially smallholder farmers. There are two proven saline tolerant paddy varieties widely grown in the target area, Other than these paddy varieties, there is a dearth of information regarding other crop varieties and their risk from, or tolerance to salinity thresholds, inundation thresholds, etc.

3. In 2017, monsoon floods have affected around 5.7 million people in 27 districts. An estimated 4,680,000 hectares of cultivated land are damaged. The northern region of Bangladesh remains particularly vulnerable[9]. Such repeated natural disasters have raised challenges for sustainable agricultural development in the country, confirming the necessity of investing in integrated and diversified agricultural development in Southern Bangladesh with enhanced production and commercialization of high-value crops and climate-resilient water management.

4. **Rural and agriculture sector.** The immediate challenge facing agriculture in Bangladesh is to continue to increase production and productivity, with an increasing and more middle-class population. While industrial sectors such as manufacturing have been the main drivers for economic expansion in Bangladesh, agriculture remains fundamentally important to the country's prosperity. Agriculture occupies three-quarters of the scarce land area of Bangladesh and supports the livelihoods of the majority of the population. The contribution of agriculture to Bangladesh's economic output declined over the past decade, but crops, livestock, forestry, fisheries still constitute 15.33 (BER 2016) percent of GDP. The rural non-farm sector, accounts for another 36 percent of GDP. About 67 percent of the population live in rural areas and over 45.1 (BER 2016) percent of the country's total labour force are engaged in agriculture, which also contributes a quarter of total export earnings.

5. *Agriculture Trade***.** While the volume of agricultural exports remained relatively stable during the past five years, significant export increases were seen in fishery products. Bangladesh imported USD 39.2 billion of goods in 2015. Food grains (rice and wheat), edible oil and oilseeds, milk and milk products, spices, sugar and coconut oil were the main agricultural imports. The value of imported edible oil and oilseeds surged since 2011, while rice imports declined due to increasing domestic production. During the last five years imports into Bangladesh increased at an annualized rate of 16 percent[10].

[8] World Bank (2016) Bangladesh: Country Snapshot, October 2016. Washington DC.
[9] According to the Office of the UN Resident Coordinator Flash Update No. 3, 20 August 2017.
[10] Bangladesh - Agriculture Census 2008: http://catalog.ihsn.org/index.php/catalog/242/study-description

6. **Rural poverty, food and nutrition security**. The proportion of the population living under $1.25 a day fell from 49 percent to 24.8 percent between 2000 and 2015. Overall poverty has therefore declined during the last decade. However, poverty in rural areas remains around 35 percent and has not declined as fast as in urban areas, with the proportion of people living in extreme poverty in rural areas being three times higher than in urban areas.

7. *Smallholder farmers*. The government classifies farm sizes as follows: (i) Landless – no farm holdings; owning no land or less than 0.05 acres, (ii) Small farmer, owning 0.05 to 2.49 acres of land, (iii) Medium farmer, owning 2.50 to 7.49 acres of land, and (iv) Larger farmer, owning more than 7.50 acres of land. According to the 2008 agriculture census, there were about 3.1 million farming households in southern Bangladesh, with 2.7 million rated as smallholders. This area had the largest concentration of poor people (26.7 percent) compared to the Bangladesh average (17.6 percent). The region is susceptible to exogenous shocks, which have the greatest impact on poor people, including cyclones and storm surges, land erosion, limited livelihood opportunities, resource degradation, salinization, flooding and water logged soils.

8. *Women.* There are fewer opportunities for employment for women than men and women bear the majority of the responsibility of caring for their families and are particularly affected by poverty. With increasing out-migration of male rural labour to urban areas for employment, feminization of rural labour and agriculture has occurred. Women are actively involved in the production, processing and trading of higher value crops, such as vegetables and spices. Women constitute about 49 percent of the total who are the most disadvantaged and vulnerable population segment. More than two thirds of the people under the poverty line are women. A growing proportion of households are headed by women – either temporarily where men have migrated for work, or permanently through death of a husband, divorce or abandonment.

9. *Youth*[11]. With a 'demographic dividend' of young adults entering the labour market in the country, rural youth may be more attracted by labour or employment migration to the urban areas, as they are among those who find it difficult to be involved in agriculture due to the lack of assets and skills. In general, the youth are motivated and dynamic; inclusive and tailor-made measures can turn them into viable socio-economic actors. Needs of female and male youth will be specifically prioritized.

10. *Food and nutrition security*. Rural poverty is closely linked to food security. For the average rural household, about 71 percent of calories come from rice, with poorer households more rice dependent than higher income households. The other differences between the diets of the poor and other income groups are consumption levels of oils, milk, eggs, meat, and fish. Although fish is the main protein source for all income groups, only about 50 percent of extremely poor households consume fish on a daily basis, compared to 65 percent for the non-poor. Only 6 percent of poor households reported consuming meat on a given day in 2010 compared to about 13 percent for non-poor households[12]. In the last 20 years, consumption of cereals (including rice) decreased, in absolute and relative terms, and average per capita consumption of all other food groups increased, indicating improved dietary diversity. However, progress in diet diversification was slower in rural areas compared to urban areas.

11. **Government policies.** Relevant government policies align with the objectives of **Vision 2021** to transform Bangladesh into a middle-income country by 2021, eliminate food deficiency and attain self-sufficiency in food production; and the **Seventh Five Year Plan** (2016-2020) which focuses on: (1) economic growth and poverty reduction; (2) inclusiveness; and (3) sustainable development resilient to climate change and natural disasters. Within this plan, the government set ambitious targets for poverty reduction (to 18.6 percent) and reduction of extreme poverty (to 8.9 percent of the population).

[11] According to the national definition, youth is defined to be in between 15-29 years in Bangladesh.
[12] World Bank. 2013. *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*. Bangladesh Development Series Paper No. 31.

12. *Agriculture Policy*. With regards to agriculture, the Seventh Five Year Plan aims to accelerate the transformation from semi-subsistence farming to agriculture commercialisation through productivity gains, diversification, value addition and agro-processing. The plan supports diversification into higher value-added activities and employment opportunities for surplus agriculture labourers into non-farm activities. The plan aims to integrate environmental, climate and disaster risk reduction considerations into all development assistance projects, government budgetary allocations and implementation processes in order to ensure sustainable and equitable growth and development. Within this policy framework, the *National Agriculture Policy* aims to encourage sustainable and profitable agricultural production, through; the development and dissemination of new technologies; increased productivity; employment and income generation; commercialisation; adaptation to climate change; marketing; enhancement of quality to meet export standards; agro-processing; encouraging production of diversified, nutritious crops; and empowering women. The Government has been promoting agricultural development in Southern Bangladesh in order to reduce the pressure and dependency on agriculture in the Northern Region.

13. *The Southern Master Plan (2013–2021).* The Master Plan for Agricultural Development in the Southern Region of Bangladesh published in 2013 aims at transferring the Southern delta into a vibrant economy and helps putting the country on the trajectory to middle income status. The objective of the Plan is to provide a road map for integrated agricultural development in the coastal districts of Bangladesh to achieve sustainable food security, poverty reduction and livelihood development for the poor and particularly focuses on, among others: (i) increasing agricultural productivity, (ii) improving water management, (iii) developing climate resilient infrastructure and improving surface water irrigation system in order to achieve enhanced productivity, balanced growth, value chain management, increased employment and improved access to food and nutrition through appropriate institutional arrangement and sustainable resource management.

14. *IFAD-MoA partnership*. IFAD and MoA have a long history of partnership and collaboration; the first IFAD-assisted project directly implemented by MoA was the Fertilizer Sector Programme (FSP, 1979 – 1984, IFAD loan USD 21.4 million), followed by the Marginal and Small Farm Systems Crop Intensification Project (MSFSCIP, 1986 – 1994, IFAD loan USD 5.6 million), Netrakona Integrated Agricultural Production and Water Management Project (NIAPWMP, 1993-1999, IFAD loan USD8.9 million), Agricultural Diversification and Intensification Project (ADIP, 1997 – 2004, IFAD loan USD 18.9 million), National Agricultural Technology Project (NATP-1, 2007 -2014, IFAD loan USD 19.5 million). The ongoing National Agriculture Technology Project (NATP II) is implemented by MoA under a partnership with World Bank and IFAD. With SACP, IFAD is renewing its direct partnership with MoA in support of the agricultural development in Bangladesh.

B. Rationale

15. In Bangladesh, 24.8 percent of the population are living below the poverty line ($1.25 a day), with Barisal Division in Southern Region having the highest number of poor people (39.4 percent). The absolute rural poverty in the Southern divisions of Barisal, Chittagong and Khulna averages 33.7percent. The primary rationale for the project's development investment is therefore the existence of continued and wide-spread poverty in the Southern Region, where 21 percent (30 million) of the total population of the country live. Despite significant improvements in rural development in many areas, challenges remain to be addressed in the South with increasing population, climate change, salinity intrusion, aging polders, tidal submergence, continued erratic and unpredictable monsoon and severe and longer draughts.

16. There is significant potential in Southern Bangladesh for increasing production, productivity sustainability through more efficient utilisation of surface water and adoption of crops specifically adapted to southern agro-ecological zones. The MoA's Southern Master Plan targets the opportunities and challenges for increasing food production in the region and the necessary investments to fulfil the agriculture potential of the area. However, it will take significant time and resources to reengineer MoA's service structure in Southern Bangladesh to meet with the challenges in this process of

agricultural transformation. The project will support the speeding up the MoA's institutional re-engineering in the South and provide operational support to the MoA.

17. Bangladesh ranked second in the 2016 Climate Change Vulnerability Index[13] and it will likely suffer more from climate change by 2025 than any other country. Rainfall is expected to increase by 10-15 percent during monsoon seasons by 2030 and 27 percent by 2075; rising sea level is expected to inundate 120,000 square km by 2050; 14 percent more of the country may become extremely prone to floods by 2030; cyclones in the Bay of Bengal will occur more frequently due to increasing temperature, and the peak intensity of cyclones may increase by 5-10 percent (Food Planning and Monitoring Unit (FPMU), Ministry of Food). Coastal salinity problems will likely worsen as changing rain patterns reduce the amount of dry season water supply from upstream river sources. Overall, crop production might be reduced by 30 percent by the end of the century; rice production could fall by 8 percent, and wheat production by 32 percent by 2050 (FPMU 2013). Winter crop production would be seriously hampered due to a warmer and drier environment during non-monsoon seasons, while moisture stress might force farmers to reduce the area under irrigated rice cultivation.

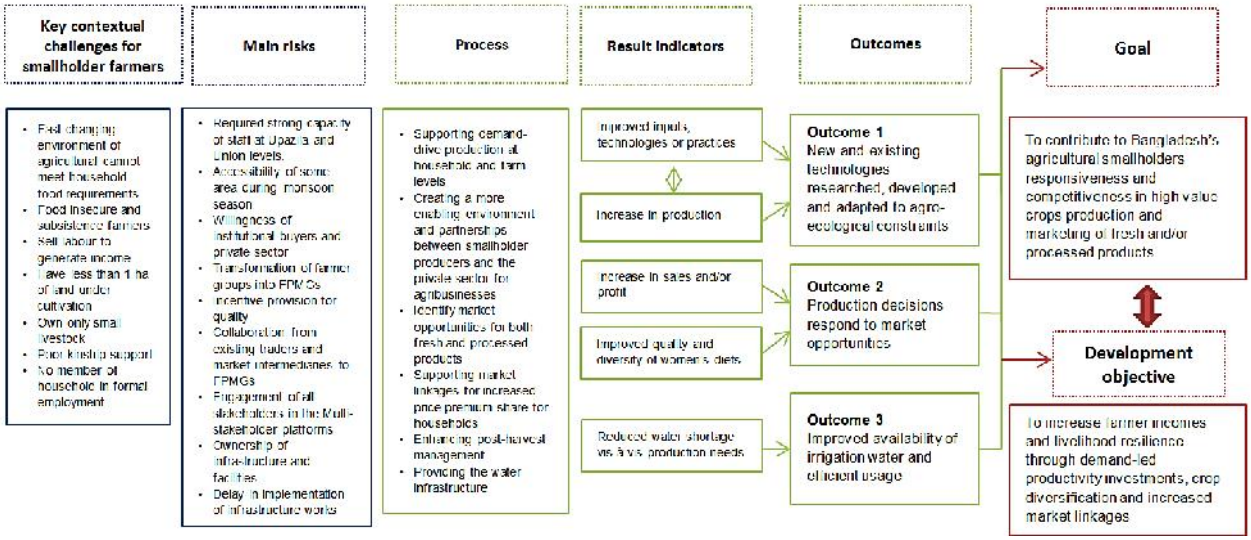
18. IFAD has been engaged in agriculture and rural development for 40 years in Bangladesh, with the current COSOP providing an opportunity for further scaling-up and enhancing some of the best practices and innovations of the ongoing portfolio that have proven to be useful climate change adaptation responses, as well as, introduction of practical methods and technologies in sustainable production enhancement, post-harvest management, value chain development and public-private partnership development. IFAD has been collaborating closely with a number of government agencies at all levels and building an effective partnership with the donor community in the country since the start of its Country Programme in Bangladesh. Through a direct partnership with MoA that is the mandated agency for agriculture development in the country, SACP will support the Government's strategic master plan of transforming agriculture in Southern Bangladesh.

19. **The theory of change** is premised on a demand-driven approach to project interventions to build and strengthen the responsiveness and competitiveness of the smallholder farmers in production and marketing. The SACP theory of change is based on the hypothesis that: Smallholder producers and disadvantaged groups involved in HVC enhanced production, post-production management and marketing would benefit from being included in a sustainable and profitable way, in selected HVC value chains thanks to improved support of extension service and action research, new relationship with private sector actors to meet market demands and improved access to and management of agricultural water and micro-irrigation systems, and obtain better price premium share, and contribute to the Master Plan for Agricultural Development in the Southern Region of Bangladesh, which aims to achieve sustainable food security, poverty reduction and livelihood development through increased agricultural productivity, improved surface water irrigation system. This will be operationalized by:

- Facilitating a planning of project interventions driven by selected value chains of HVCs that will improve productivity, incomes and livelihood of farmers in the project area through income generating diversification and value addition, and marketing in a changing climate condition;
- Strategically building public-private sector partnership and stimulate their joint investments, and advice to mainstream the smallholders into selected agricultural value chains through improved knowledge of market opportunities, access to required technologies, benefit of action research results and good agricultural practices, and sustainable surface water management in a manner that subsequent integrated planning and coordination of project interventions will improve the match between market demands and supply of produce from project beneficiaries, and
- Developing the capacity of service providers at operational level to offer timely and quality services to smallholder farmers and their groups participating in HVC development.

[13] http://www.businessgreen.com/bg/analysis/2434699/mapped-populations-most-vulnerable-to-climate-change

SACP Logic Model



20. The project will therefore support production enhancement, identify market opportunities for both fresh and processed products, value added post-harvest management, build competitiveness in HVCs to move households from subsistence farming into commercial farming through three technical components supported by a project management component. The project also builds on the assumption that with the opening of the Padma Bridge in 2018, many farmers of the southern districts will have increased opportunities to sell their products to Dhaka markets (high value crops, vegetables, legumes and fruits), the shortened transit times will expand the opportunities for high value fresh produce that is properly picked, packed and transported and where the project can play a significant role in improving current practices. The focus will be to enhance production quantity and quality through appropriate productive infrastructures, quality agriculture inputs and training of farmers and value chain actors, as well as, linking farmers and their groups to private dealers and traders to enhance fair contract farming[14]and postharvest and processing contracts

21. ***Synergies*** with the on-going projects and other development projects in the country will be leveraged during SACP implementation. For example, SACP can build on the lessons from NATPI and gain comparative advantage from the overlapping areas with NATP II. According to the field observation during the final design mission, implementing agencies are already working in coordination with each other and well familiar with the NATP. Some of the district and upazila level officers received capacity building from the NATP I. The complimentary areas of investment are on the demand-driven agricultural research, climate-smart technology transfer and practical application at farm and market level, farm-to-farm extension, agro-business and agro-processing development as well as market linkage and collaboration with private-sector service providers. Furthermore, PACE has a national coverage in terms of its microenterprise development, value chain and technology adoption interventions. Its best practice and innovative features of linking value chain development to rural financial services can be learned and complemented by the presence of PACE's partner organizations, in particular to SACP's components 1 and 2 (See more detail about PACE's lessons learned in the Appendix 3). SACP and CDSP IV will have a geographic overlapping in Noakhali district (2 upazilas) where land settlement, infrastructure, agricultural and livelihoods support and forestry implemented by six implementing agencies, including DAE. CDSP IV and DAE have developed 90 farmer forums, including in two overlapping upzailas with SACP.

[14]Using enhanced local practices and following the contract farming legal guide issued in 2015 : http://www.unidroit.org/work-in-progress-studies/studies/contract-farming

SACP description

A. SACP area and target group

22. **Geographic coverage**. The final design mission continued to adopt the following criteria i) poverty levels, ii) agro-ecological constraints, iii) markets and processing potentials and capacities; it took into account the future socio-economic opportunities in the Southern districts triggered by the ongoing construction of Padma Bridge, Ecologically Critical Area (ECA) in the West of Southern Bangladesh, cost effectiveness, potential for HVC development, targeting consistency and field operational resources and capacities The Project will work in the following 11 districts, covering 30 upazilas.

District	Upazila
Bagerhat:	Fakirhat and Kachua
Shatkhira:	Shyamnagar and Kaligonj
Pirojpur:	Kawkhali
Jhalokathi:	Kathalia and Nalchiti
Bhola:	Lalmoho, Charfasson and Monpura
Patuakhali:	Mirzagonj, Rangabali and Kalapara
Borguna:	Amtoli, Batagi, Bamna, Taltoli and Pathorghata
Chittagong:	Boalkhal, Fatikchari, Chandanaish, Banskhali, Sandip and Mirsharai
Noakhali:	Subarnochar, Chatkhil, Kabirhat and Hatia
Feni:	Chagolnaiya
Laximpur:	Kamalnagar

23. **Selection of project unions**. Within these 30 upazilas implementation will be extended to up to 250 unions. The selection of project districts, upazilas and unions will be undertaken by the project management and confirmed at or right after project start-up, applying the selection criteria as stipulated above, and including taking into consideration the existing farmer groups and their dynamics and potentials in production and marketing in the target unions.

24. Regarding the two upazilas of Shaymnagar and Kaliganj in Satkhira district, unions within the 10-kilometer northward peripheral areas that are declared as ECA will not be selected.

25. **Target group and targeting strategy**: The total population is 7,018,218 in the targeted 30 upazilas, representing 1,246,021 households. The project will directly benefit at least 250,000 rural households or 1,400,000 people [15], i.e. one fifth of the population. The selection of project beneficiaries will be undertaken based on an inclusive targeting strategy focusing on landless, marginal and small farmers, with up to 80 percent of beneficiaries coming from these categories. Youth will constitute up to 20 percent of beneficiaries and women participation will target at least 30 percent involvement.

26. The project will take existing or new farmer groups as its entry point, to enhance production and value chain development in the project areas. The project will focus on strengthening agriculture competitiveness, strengthening sustainable technical support services/facilities, identification of market opportunities and linking these to an applied research, development and extension programme to support targeted households, improving access to income opportunities of high value crops through multi-stakeholder platforms, developing market linkages, and supporting individual and group organizational capacity to participate in agricultural value chains.

[15] The average people per household in the project area is 5.6

B. Development objective and impact indicators

27. **Project strategy**. Core elements of the overall strategy are consistent with the Government's Seventh Five Year Plan (2016–2020), the current National Agriculture Policy, the Master Plan for Agricultural Development in the Southern Region of Bangladesh (2013), and IFAD's corporate strategic framework (2016-2025) and the COSOP for Bangladesh, with a focus to:

- *Increase rural people's productive capacities*: Promoting access to natural resources, agricultural technologies and productive services that lead to enhanced agricultural production for improved household food security, improved nutrition and diversified income sources;
- *Increase rural people's benefits from market participation*: Increasing engagement of rural households in diversified agro-business and employment opportunities, rural producers' organizations, rural infrastructure, that provide them appropriate support services, linkages to markets for improving their livelihoods;
- *Build adaption capacity of rural livelihoods to climate change and the scaling up of successful approaches*: developing and adapting enhanced climate-resilience approaches and promoting the best practices through effective knowledge management
- *Address gender and youth*: to ensure that project activities reach a significant number of poor rural women, men and youth and improve their rural livelihoods.

28. **Project goal** – to contribute to Bangladesh's agriculture smallholders' responsiveness and competitiveness in high value crops (HVC[16]) production and marketing of fresh and/or processed products.

29. **Project development objective** - to increase farmer incomes and livelihood through demand-led productivity investments, crop diversification and increased market linkages.

30. The associated key indicators are:

- At least 150,000 beneficiary households reporting ≥20 percent income increased from improved marketing and diversified agricultural products
- At least 50 percentage of households reporting improvements in household asset ownership index

31. **Duration**. In order to achieve these objectives and considering the disparity of development conditions in the project areas, and time needed to mainstream the landless, marginal and small farmers into organized production and identified value chains, the Project will be implemented over a period of six years.

C. Outcomes/Components

32. Outcomes - smallholders are living in a fast-changing environment of agricultural transformation, facing many challenges as they try to move out of subsistence farming, to become much more commercially oriented. At an operational level, this project will respond by (i) supporting demand-drive production at household and farm levels, (ii) creating a more enabling environment for agribusiness and, at the same time, directly supporting partnerships between smallholder producers and the private sector agribusinesses, and (iii) supporting market linkages for increased price premium share for households. Programme outcomes are presented in the Logical Framework.

33. SACP will adopt a 'push-pull' strategy to achieve the project objective. It will enhance the capacity of targeted farmers to address their barriers to entry into the market system (i.e. push strategy) and facilitate the development of a more inclusive market system (i.e. pull strategy). While Component 1 focuses on making farmers more productive in producing high value and high-demanded crops through accessing improved production knowledge and technology, Component 3 supports in improving their access to irrigation water. The produced goods need to be marketed in a

[16] Legumes, Vegetables and Fruits.

competitive manner by conforming to buyers' requirement where Component 2 steps in and builds producers' capacity accordingly.

34. *Components Synergy*. At the very onset, the project will conduct a market-led research on assessment and prioritization of HVC value chains which will be the gateway for making synergies among the components associated with research, extension, marketing and major inputs (seed and irrigation). At inception stage, findings of this research will showcase which value chains to be prioritized, market and action research to be conducted, technologies and inputs to be promoted, products to be marketed by considering competitiveness on the top. Following this onset research, public, private, producers partnership (4Ps) consultation will be conducted in each project Upazila for further validation of prioritized HVCs, constraints associated with varieties, production, irrigation, market, etc. which finally attributed to make harmony among agencies involved with research (BARI), extension (DAE), inputs (BADC) and marketing (DAM) as well as private sectors. Moreover, Farmer Producers and Marketing Groups (FPM s) will be strengthened (old Producer Groups) or mobilized (new) and 4-5 lead farmers from each PG will be graduated to Market-led Farmers Field School (MFFS). The curriculum of MFFS will embrace HVC production including soil fertility management, good agriculture practice (GAP), nutrition and food safety, sustainable water management, post–harvest management, value addition, market linkage, group dynamics, gender issues, nutrition-efficiency etc. The MFFS will play as a catalyst for making synergies among agencies, private sectors and components activities.

Component 1: Enhanced production of HVC and technology adoption

35. The objective of Component 1 will be the identification and prioritisation of appropriate VCs for smallholder investment and associated key research gaps that need to be filled through on-farm research. The purpose of the component is to develop the capacities for linking farmers to markets. This component will support the testing, evaluation and adoption of new technologies and management practices by smallholder farmers to enhance their production of HVCs that have identified market opportunities. This component will contribute to developing agricultural competitiveness linked to market demands by: (i) assessing the market demand for HVC that can be produced in the south, (ii) identifying research demands for evaluation of new cropping systems, new crops and/or new varieties and improved post-harvest management storage options, (ii) strengthened research-extension and private sector service provision, and (iii) organizing producers and marketing groups to form greater scale and bargaining power.

36. **Implementation strategy**: The component will embrace market-led research, with sub-Component 1.1 being implemented by trained and capacitated DAM and DAE staff at Upazila and Union levels and sub-Component 1.2 being led by BARI and BADC. The project will utilize the multi-stakeholder platform established to better facilitate and validate the identification and prioritisation of value chain. Involvement of the private sector will be cross cutting and they will be involved in identification of market opportunities, support to identification of the quality and quantities required by different markets and through input provision, postharvest management and marketing linkages, as well as processing.

37. **Synergy**: The first activities in sub-Component 1.1 will determine the types of activities and scale of interventions for all other sub-components, as the identified HVCs and their associated VCs, will lead to the identification of research, extension, postharvest, processing and water infrastructure needs, to build profitable and sustainable farm-level investments. As this is a new way of operating for the implementing GoB departments, they will benefit from significant guidance and support under the TA component to support these activities and their integration. Multi-stakeholder platforms will play an important role at the field level both for component 1 and 2.

Sub-component 1.1: Assessment of HVCs and group mobilization

38. The starting point for project intervention is the identification, assessment and prioritisation of HVC value chains. At start-up a detailed value chain analysis of horticultural and other high value crops will be conducted for final selection of potential HVCs suitable for production in the southern delta of Bangladesh. A community process will identify existing groups and target farmers who are interested to invest in these HVCs. If new groups are needed, smallholders will be formed into collaborative Farmer Producer and Marketing (FPM) groups, each with approximately 25 households. The composition of the FPM groups will take into consideration the planned focus on women and youth and most marginalized groups, reflecting inclusive targeting strategies. Later FPMs that have developed capacities and market linkages with buyers will be federated to achieve economies of scale and integrated into multi-stakeholder platforms. To reach the project target groups, the following activities will be implemented:

39. *A broad value chain mapping assessment* - Identification of value chain/manageable sub-sector inventory considering the market potential impact area of the project and its life time with the greatest potential for growth in small enterprise income and employment will be assessed during the inception of the project.

40. *Village-level assessment and prioritisation of potential value chains* – After broad base selection of HVCs, village level prioritization exercise will select HVC smallholder groups. This will allow each group to produce potential HVC and create an economy of scale of both inputs needs and outputs produced by the members of groups which should attract private sector to sell or buy in bulk.

41. *Identification of existing groups at the village and union level*. DAE has already mobilized farmers groups under different projects, so the first activity is to conduct a mapping of existing groups, determine which groups can be worked with under SACP and what level of capacity building and support they would need. Where needed SACP will form new groups. All groups will be mobilized by the field extension workers using different participatory tools like wealth ranking, social and resource mapping, membership profiling, etc. The groups should be inclusive, considering age and gender. For both already created and newly formed groups, it will be essential to involve young farmers from the early mobilization phase. They will serve as catalysts to further disseminate new technologies and their level of ownership of the potential results will need to be thought through the groups' formation process.

42. *Engagement of production facilitators* – In each project union, the SAAOs will mobilize new groups and strengthen old groups. They will work as Production Facilitator and facilitate implementation of the project.

43. *Training of Trainers (ToT) for Agriculture Extension Officers (AEO) and SAAOs on PRA and group mobilization* – during mobilization of farmers into groups, the extension workers role would be facilitation, not as 'doers'. Keeping these principles, the SAAOs will be trained on standard tools and techniques of PRA to strengthen existing groups and to mobilize new ones. The training will also touch upon the challenges of climate change effects and technologies to make communities (and farmers) more resilient to natural disasters and other forms of threats to agriculture livelihoods.

44. *PRA for group formation and mobilization* - this activity will be conducted only for the mobilization of new groups where there are no groups previously mobilized by DAE or by other extension agencies. As mentioned above, the early involvement of youth will be essential to create a future driving force for new adaptive technologies.

45. *Identification and prioritization of technology and research needs for selected crops* - Upazila level consultation on identification, prioritization and selection of proven technologies will be conducted through workshops with the participation of private sector, extension & research agencies and smallholder farmers. A list of such scalable technologies for southern delta proposed by the BARI is given below.

Areas	Technologies
Productivity enhancing technologies	Yield gap reducing technologies for oil crops; Alternate Furrow irrigation; Drip Irrigation; Improvement of location specific Cropping Pattern Varietal Evaluation of selected HVCs Summer tomato production; Enhanced orchard establishment and fruit tree management; Compost production and improved soil management; Integrated Pest Management (IPM) in vegetables; Establishment of homestead vegetable gardens; Promotion of newly released varieties (e.g. BARI black cumin, BAU Garlic-3, BARI, Lentil-7, etc).
Post-harvest loss reducing technologies	Enhanced post-harvest handling (packaging of mustard, pulses, vegetables and fruits); Cleaning, sorting, grading and packaging of vegetables.
Agro-food processing	Private sector-led processing of smallholder produced mungbean, oil crops, fruits and tomatoes;
Others (e.g., adaptation to climate change)	Off-season vegetable production; Climate-smart agriculture, soil conservation through zero/reduced tillage; Promotion of *dhap* (floating vegetable culture) in low lying areas.

Sub-component 1.2: Demand-driven production and market-led research

46. Identification of action research needs will be based on the analysis and prioritisation of the VC studies, and the FPM group needs for information new and demanded technologies and on-farm mechanization etc. Some key constraints already identified are availability of breeder and foundation seeds of pulses, oilseeds and other HVCs, access to inputs, affordable mechanisation, appropriate packing materials, suitable processing or semi-processing techniques and equipment. The following activities will be implemented:

47. *Action research on climate smart technologies* – Action research on prioritized technologies identified by the extension, research, private sector and smallholders will be conducted by BARI at its regional station and farmers. Standard protocol of action research will be designed by the HVC specialist of both BARI and additional consultants when required. Once finalized, the manual for each technology will be developed by BARI and handed over to the DAE for wider dissemination to the farmers. The market research specific to the project areas will be strengthened in BARI and local relevant universities if needed. Services of the consultants (including TA) will be utilized in development of research programs.

48. *Evaluation of stress (e.g. saline, submergence and drought) tolerant varieties* – suitable HVC varieties already released by the BARI will be evaluated both at on-farm research field and by farmers to assess performance, yield gap, and soil management. On farm as well as respective research centres/divisions of BARI will be made involved in the process of evaluation. These efforts will be oriented in the direction of defying climate change effects.

49. *Evaluation of appropriate mechanization options* - The project will form a Technical Committee for performance testing of appropriate machinery promoted by the importers, local manufacturers/traders through floating an Expression of Interest in newspapers. BARI developed machineries will also be included for performance evaluation. All machines have to be tested at BARI. Upon recommendations by the Technical Committee, appropriate machines and respective companies will be enlisted with the project. The selected brands of tested machines will be promoted among farmers by DAE, with a special focus on young farmers who seem to be more receptive to new machineries.

50. *Research on on-farm post-harvest storage and agro-processing* - Postharvest management (PHM) is another part of mechanization especially for HVCs. Appropriate small scale postharvest

technology is needed especially for HVC clusters across the southern delta for smallholders to achieve better market outcomes. On-farm research on post-harvest storage and agro-processing will be conducted for vegetables, fruits, pulses, oil-crops especially on small scale processing machineries, through the establishment of common facility center at farmer groups, etc. On farm research will be conducted for determining maturity indices.

51. *Multiplication of seeds/planting material of HVCs* – seeds and planting materials for prioritized HVCs will be multiplied to ensure availability among farmers. BARI will produce breeder seed and handed over to the BADC to produce foundation seeds to distribute among farmers. Private seed operators will also be linked in the seeds supply system.

Sub-component 1.3 Institutional support for research and extension

52. Institutional support will be provided to secure the quality of project implementation, such as improved service facilities for both extension and research in the forms of necessary infrastructure and equipment (also ensuring environmental conservation and necessary climate resilience enhancement), deployment of project staff, and supply of vehicles. Capacity building of professionals, technicians and management staff: Training/exposure visits on contemporaneous research for stress as well as climate smart agriculture. To achieve the expected results, the following activities will be implemented:

- Formation of implementation team at different levels by placing capable manpower;
- Development of comprehensive work and budget in line with the log-frame of the project;
- Timely procurement and efficient use of equipment and goods;
- Develop and implementation and effective monitoring system, also able to record and share challenges, identified best practices and lessons learnt;
- Regular and effective coordination within the implementation stakeholders at different level centre to union;
- Regular follow-up of monitoring and evaluation activities;
- Proper capturing of information, documentation and reporting.

53. **Technical Assistance.** TA under component 1 will cover sub-component 1.1: Value chain studies and Market-led Farmer Field Schools as well as sub-component 1.3: Development of benefit M&E system

54. *TA to sub-component 1.1. Value chain studies*. The value chain specialist engaged by the project office will be responsible for conducting value chain studies for the selection of high value crops. After pre-selection of HVCs, detailed value chain studies will be conducted to determine research priorities, fine-tune other project activities, and also explore the opportunities for regional branding. It is expected the Project Office (PO) will contract these studies out. The HVC Specialists will support by providing advice on the terms of reference of the studies, by reviewing research proposals and by reviewing the study reports for quality assurance. *Market-led Farmer Field Schools.* The market-led Farmer Field School (FFS) approach will build on previous MoA experience with FFS programmes. Market-led FFS curricula will be developed for the chosen HVC. The TA project will train 30 master trainers over a three-month period. The SACP project office will then take over to train the SAAOs and farmer facilitators, with continued technical advice from the FAO TA team and experts of project office including technical coordinators.

55. *TA to sub-component 1.3. Development of benefit M&E system.* FAO will support the design of the SACP benefit Monitoring and Evaluation system. The benefit M&E and knowledge management system will be designed to also record and share challenges, best practices and lessons learnt. FAO will assist the PO in evaluating different software packages and applications for easy data collection and analysis for the benefit M&E system. FAO will also train those responsible for project M&E at national, district and upazila level on benefit M&E, Knowledge Management and ICT.

56. **Component Exit Strategy and Sustainability**: The component is based on capacity building of existing and/or new FPM groups to identify market opportunities and identify the service providers along the value chain who are needed to increase their productivity, profitability and reduce their food security risks from engaging more in market-led agriculture. Increased capacities in DAM and DAE staff will continue to be applied after the project has ended, as will the group capacities. These initial skills will be further supported and sustained through linkages with other GoB departments and the private sector along the selected VCs.

Component 2: Processing and marketing of HVC

57. This component will support smallholders to access market in a more efficient manner through creating a conducive business environment for private sector to reach them. In parallel, promising rural agro-enterprises (individual farmer, farmer groups and/or rural entrepreneurs) will be assisted to add value to primary products and penetrate market through value-added products. Besides, village-level food processing will be promoted to encourage nutrition and food-safety along the value chains. Value addition will be through improved post-harvest practices, processing, storage, and transport of agricultural commodities. Activities will focus on (i) capacity building of DAMs (ii) developing a demand-driven extension approach within DAE and DAM and by engaging private sector, (iii) linking with private sector buyers (v) developing opportunities for village-level food processing, and (vi) developing existing and potential rural enterprises' ability to manage sustainable rural agro-enterprises.

58. **Implementation Strategy** – This component builds on value chain selection and production related capacity building activities for farmers under Component 1 and therefore, develops farmers' skills on post-production activities to access market in a more efficient and effective way. Under this component, the project will invest in reducing the market inefficiency, especially in terms of asymmetric information. Through the creation of the entry point and platform (farmer groups) under Component 1, the private sector will be able to communicate to the producers in a cost-effective way about their requirements in terms of quality and quantity, price conditions for different marketable categories, packing and packaging, delivery conditions. This will help reduce the perception of additional costs, or risk of negative return from quality and quantity assurance at production level by the buyers. The lead implementer for this component is Department of Marketing (DAM) through collaboration with other implementing agencies. It is important to note that the interventions/activities under this component will be undertaken in parallel to those under Component 1 and Component 3 to ensure synergy and maximization of resources. For example, a buyer may require a specific product to be supplied with certain packaging features but may also want the product to be produced using a specific seed variety. While the former falls under post-production knowledge i.e under Component 2, the latter has to be addressed at production level i.e. under Component 1.

Sub-component 2.1: Improving market linkage

59. This subcomponent focuses on improving institutional capacity of DAM to enable them to foster market linkages. Considering the current level of under-staffing, 30 Upazila Marketing Facilitator will be engaged through outsourcing in this project under DAM – one in each Upazila. These Upazila Marketing Facilitators will be the primary focal points for working with farmer groups on market-access and marketing-related aspects, and collaborate closely with SAAOs in respective Upazilas to transfer jointly post-production and marketing knowledge to farmers.

60. *Buyer mapping and assessment* - DAM district level staff (3 most senior staff) and Upazila Marketing Facilitators will be trained on 'buyers mapping' followed by assessment of buyers. While buyer mapping will identify existing buyers for selected crops at different tiers of a value chain i.e. local traders, wholesalers, institutional buyers etc.; assessment of buyers will help select most potential buyers who the project may work together to enhance farmers' capacity to respond to market needs. Buyer selection criteria will be developed at PO level and these criteria may include willingness to collaborate, area coverage, procurement volume, product portfolio dealing with etc.

DAM will conduct/update the buyer mapping cum assessment once in every one year and a half through involving district level staff, Upazilla Marketing Facilitators and also the SAAOs in the targeted areas to create room for more buyers to join the project who fulfil the selection criteria. In the whole project period, the project should select and work with at least 10 institutional buyers and 100 individuals for different value chain crops.

61. *Agreements with buyers* - Upon identification and selection of buyers, the project will enter into agreements with them delineating the roles and responsibilities of each party. While for institutional buyers it will be formal MoUs at PO level, for individuals it can be informal agreements at local level. The major role for the project is to prepare farmers (through both Component 1 and Component 2) to comply with the agreed upon requirements of the buyers. Buyers' major role would be to attend relevant training sessions for farmers arranged by the project and educate them about their needs. The MoUs and informal agreements should not be a binding document for a guaranteed purchase which may reduce the interest among buyers to collaborate. The rationale behind not having such guaranteed purchase clause are: a) through value chain selection under Component 1 most demanded crops are already selected which are likely to have high unmet market demand; b) through interventions under Component 1, the targeted farmers are expected to be more productive which means, they will make higher profit even if they sell in regular market; c) buyer mapping and assessment has already identified the demand-supply mismatch which are resolved through supporting the farmers and hence, selected buyers are very likely to buy from them. DAM (national, district) staff including their Upazila Marketing facilitators will initiate the negotiation with interested private businesses (local traders, regional wholesalers, national companies, exporters etc.) already identified, to educate farmers alongside SAAOs on their needs and requirements and how to comply with those. In the negotiation, the project will primarily highlight the opportunities it will create through investment (such as farmer groups, farmer training on post-harvest techniques and business management skills etc.) for private businesses to tap and get access to those 'better equipped' farmers and hence, how much the private businesses would offer to join in such investment – either in kind or cash. There will be formal MoUs signed between DAM and institutional buyers delineating the roles and responsibilities of each party while with individual buyers, informal agreements can be made at Upzilla and district level.

62. *Business management skills development* - Every farmer is an entrepreneur and like any other business, farming also need operational, marketing and financial management. Lack of knowledge of farmers on these aspects often makes them inefficient and non-competitive. Linking with buyers will be fruitless unless the farmers manage their farming efficiently and in compliance with buyers' requirement. DAM district level staff and Upazila Marketing Facilitators will be trained on basic business management skills along with Business Development Services (BDS). They will train the SAAOs who in turn will train farmers in a simplistic way. Once the DAM district level staff and Upazila Marketing Facilitator become knowledgeable on business management skills and BDS (such as finance, standards, certificates, legal requirements) provisions and respective providers, they can assist not only farmers but also rural-agro enterprises to avail different BDSs through an informed manner. The project will support documentation and printing of business management skills technical modules as well as mapping of BDSs provisions required for different agro-enterprises so that these resources can be used beyond the project period.

63. *Formation of multi-stakeholder platforms* – The project will form multi-stakeholder platform in each district stationed in the local Chamber of Commerce and Industry office. These multi-stakeholder platforms will include Farmer Groups, representatives from the local Chamber of Commerce and Industry, local government, DAE and DAM, research institutions, agro-input companies, agro-processors, transport and logistics providers, private sales agents, financial institutions, professional organisations of the agriculture sector and farmers. President of the Chamber of Commerce and Industry will chair the platform. The role of these multi-stakeholder platforms is to provide a forum for the discussion of industry or sector problems and constraints in a holistic manner thereby ensuring that the interests of all stakeholders are represented and protected. District DAM office will primarily assist respective Chamber of Commerce to maintain the functioning of the platform. The forum will sit

together once in every quarter. The project will bear the costs for snacks/food and the Chamber will provide venue and logistics support as their investment.

Sub-component 2.2: Post-harvest and processing investments

64. This subcomponent materializes enhanced capacity of DAM and SAAOs; and agreements with buyers to connect with producers. The subcomponent also creates the provision to support promotion of agro-processing enterprises. The major activities revolve around building producers' capacity on post-harvest activities and primary processing to respond to buyers' demand; identifying and supporting potential agro-processing enterprises.

65. *Farmer training on post-harvest and primary processing* - DAM district-level staff and Upazila Marketing Facilitators will be trained on post-harvest and primary processing of selected crops as per the need identified during the buyers' assessment. DAM, thereafter, will provide such training to SAAOs, who in turn will train the farmers with the presence of buyers with whom agreements have been signed. Buyers (individual or institutions) must develop a sense of ownership on the training activities and for this reason, they should be consulted and involved at each level – starting from training module development till providing training to farmers. The selected buyers are expected to contribute financially (may be in kind, by providing time, resource persons, venue etc.) in the training events for farmers – for individual buyers cost-sharing is expected to be at least 10% while for institutional buyers it is 20%.

66. *Promotion of agro-processing enterprises* - The project will provide financial and technical support to 300 agro-processing enterprises (to the individual agi-entrepreneurs or producer groups), on average 10 from each Upazila, linked to Farmer Groups. In addition, support services in dissemination of processing technology, branding, packaging, certification from BSTI and other institutions, etc. will be provided to small level agro-processor/ entrepreneurs. It is envisaged that a particular Farmer Group may or may not propose to start or upgrade an agro-enterprise. Few members from one group or several groups may join together. All these options will remain open to select appropriate candidates to choose for project support. In this regard, the project will design matching grant implementation modalities for the entrepreneurs (individual/ group) for establishing agro-processing enterprises in the areas of storage infrastructure, pack-house, post-harvest and processing equipment/machinery. The matching grant amount will be on average BDT 2 million based on the business proposal merit and the grant amount will not exceed 50% of the total investment cost (productive assets including land, building, storage infrastructure and/or machinery) where the rest will be borne by the entrepreneur. Investment may include multi-crop cold storage infrastructure, mechanical dryers for grains and pulse, mechanical sheller for grains, grinding machines for oil seeds, grinding and pellet making machines for animal feeds etc.

67. The grant amount will vary depending on the business type and size. Average grant amount may be BDT 1 million for each proposal. However, in case of four multi-crop cold storages, the amount may be increased up to BDT 2.5 million each. On the other hand, a mechanical shelter for grains may require only about BDT 100,000 as matching grant from the project. Small-scale processing facilities such as drying and roasting of ground nuts, chanachur (local snacks), puffed-rice making etc. which may require less amount of matching grant shall also be considered for support. It is important to note that the business proposals must come from the entrepreneurs (individual or group) - existing (to expand business) or potential to start on what they have already experience and knowledge (only exception for nutrition rich fruits and vegetables processing training participants under Subcomponent 2.3 who will get the training from the project and then can apply for the grants to start business). The project will provide business management skills and also assist in accessing BDSs for the selected entrepreneurs after winning the matching grant. The grant amount will be disbursed after completion of works of the entrepreneur's portion. Whatsoever, the total number of matching grants will be 600 (20 for each upazila). The enterprises developed under matching grant will be owned jointly. The total amount will be limited to BDT 600 million. In order to ensure that the small holder farmers/entrepreneurs are not excluded from this opportunity, at least 400 grants will be

received by those who belong to farmer groups the project has mobilized including women members who will be trained to process micronutrient rich fruits and vegetables (discussed in the following section). The ownership will be determined by the proportion of investment cost shared by entrepreneurs and the DAM. The overall implementation will include an application process, for which it is envisioned that applicants will need to submit a business plan. It can be assumed that all applicants may not have the capacity to develop such a business plan and DAM district level and DAE upazila level staff will need to assist them. Technical capacity of both DAM district staff and DAE Upazila staff will be developed accordingly. The final selection for businesses eligible to receive the matching grants will be carried out through an evaluation process at PO level, in line with evaluation criteria prepared in consultation with IFAD.

Sub-Component 2.3: Development of food safety and nutrition measures along the value chain

68. The objective of this subcomponent is to promote nutrition sensitive value chains and products and thereby enhance the consumption of safe and diversified diet for households, women and young children. DAE will act as the lead agency through collaboration with Bangladesh Institute of Research and Training in Applied Nutrition (BIRTAN), DAM and BARI.

69. *Food safety and nutrition training of trainers* -Training manual on quality and food safety management systems will be developed and selected resource persons of the agencies mentioned above will be trained. These resources persons will ultimately roll-out the training of trainers at the district, Upazila and community level.

70. *Training on community based safe food processing* - Following the ToTs received, SAAOs will provide training to farmer group leaders, women farmer groups and relevant agro-processors selected for matching grants on processing of micronutrient rich fruits and vegetables. A special attention shall be paid to reach targeted households with disable family members and vulnerable livelihood options. The training will strengthen capacities on the use of simple hand operated/mechanised equipment to carry out processing and preservation activities (e.g. food products widely consumed in Bangladesh, seed cleaning, blanching, drying, pulping, juice extraction, pickling, chutney and sauce making, bottling, fermentation, fruit toffees, dehydrated nutrient dense vegetable mixes, fruit based yoghurt production) for value addition, income and nutrition.

71. *Training on product and nutrient labelling:* Selected district and Upazila level officials and related food processors will be provided ToTs on product labelling and relevant nutrient information on horticulture products (in Bangla language) to provide knowledge on nutrient composition of foods, make informed food choices and enhance household nutritional behaviour, who in turn will train the farmers.

72. *Behavioural change campaign* - Every year a 1-day behavioural change campaign on National Food Safety and Agriculture Days will be carried out for enhancing horticulture consumption and nutritive food production, processing and marketing for women farmers specifically resource poor women to ensure increased demand of micronutrient rich fruits and vegetables by improving shelf life of the horticulture produce and increasing consumption and diversity of micronutrient rich foods in the diet for better nutrition. DAE, being the lead agency, will engage DAM to ensure active participation of large agro-processors (with some of whom DAM already signed agreement under subcomponent 2.1) in this campaign.

73. **Technical Assistance**. TA under component 2 will cover subcomponent 2.1: Buyer mapping and Marketing facilitation; subcomponent 2.2: Training of trainers on post-harvest handling and primary processing, Matching grant modalities, ToT on business models including RuralInvest business module where useful and sub-component 2.3: Food safety and nutrition related studies, Training of trainers on community based safe food processing and product and nutrient labelling

74. *TA to sub-component 2.1. Buyer mapping.* FAO will work with PO staff to establish criteria for buyer selection. FAO will subsequently train DAM district staff and upazila marketing facilitators on the buyer mapping methodology, including a rapid assessment of buyer's business models that will

allow an assessment of whether they fulfil those criteria. After the ToT the FAO expert will coach the DAM staff to conduct the buyer assessment. *Marketing facilitation.* The TA team, in collaboration with DAM, will develop a training manual on market facilitation techniques. Subsequently, FAO will train DAM district officers and upazila level marketing facilitators engaged by SACP. For some of the training sessions, private sector (buyers and input suppliers) will be invited. After the ToT, the DAM will train the SAAOs and lead farmers for effective market facilitation.

75. *TA to sub-component 2.2. Training of trainers on post-harvest handling and primary processing.* FAO will contribute to the development of the training manuals on harvesting, post-harvest handling, storage and processing. Once the manuals are completed, FAO will train and coach agency district and upazila level marketing facilitators engaged by the SACP. *Matching grant modalities.* FAO will support the SACP Project Office to design matching grant implementation modalities as well as support a study to assess the best ownership and management modalities for the planned Upazila/union level commodity and marketing centres. *ToT on RuralInvest module 2.* FAO will provide a training to DMOs and upazila extension officers on RuralInvest module 2 to develop simple business plans with a basic financial feasibility analysis. Selected national and district level DAEand DAM staffs will also be trained on developing business plans and financial analysis for larger scale investments. FAO will also train national and district level staff on business model such as RuralInvest modules 3 for developing business plans and financial analysis for larger scale investments and on the investment portfolio management features of RuralInvest.

76. *TA to sub-component 2.3. Food safety and nutrition related studies and training of trainers.* FAO will support studies on nutrition and food safety by providing advice to the POon terms of reference and by reviewing technical proposals and final study reports. FAO will contribute to the development of training manual on quality and food safety management including safe food processing systems for farmers and other value chain actors followed by a 5-days centre based training for resource persons from agencies so that resource persons will then roll-out a training of trainers programme at the district and upazila levels. *Training of trainers on community based safe food processing.* FAO will provide technical support through training of trainers at sub national levels on processing of micronutrient rich fruits and vegetables. *Training on product and nutrient labelling.* 3-day ToT Training on product labelling and relevant nutrient information on horticulture products for selected district and upazila level officials, to provide knowledge on nutrient composition of foods, make informed food choices and enhance household nutritional behaviour. *Behavioural change campaign.* FAO will support the content development of 1-day behavioural change campaigns on National Food Safety and Agriculture Days and regular radio and tv awareness programmes for enhancing horticulture consumption for women farmers to ensure increased demand of micronutrient rich fruits and vegetables.

77. **Component exit strategy and sustainability.** The subcomponent attempts to address inefficiency of the market system where buyers do not invest time and resources to build the capacity of small holders to enable the latter to supply their produce in an informed way. With the creation of the platform (the farmer groups) private sector buyers will find it cost-effective to reach them in sustainable way where DAM and DAE through increased capacity will assist the private sector to educate them. Once this connection has been developed, private sector is likely to continue the direct relationship with small holders to continuously educate them on their needs and requirement. On the other hand, DAM with its increased capacity to assess market and buyers will take this knowledge forward to carry out the same business model in new areas beyond the project. Agro-enterprises supported through matching grant will create a demand-pull for more products affecting a production growth of the primary commodities in the project areas. Through promotion of nutrition enriched processed agro-products, there will be higher demand of such products and new similar enterprises are likely to join the rally seeing the market opportunity. Multi-stakeholder platform created under this component will open a new window to discuss the problems of all the stakeholders in a single forum, address them through collective actions and advocate to concerned authority to create more conducive business environment.

Component 3: Climate Resilient Surface Water Management

78. This component aims at creating and securing enabling environment and facilities of strengthening the responsiveness and competitiveness of smallholders in HVC production and marketing. The purpose of the component is to facilitate the broad project objective of creating an enabling environment through infrastructure development. The activities under component 3 will support households interested in increasing their productivity and diversification to HVCs with water infrastructure that will provide supplemental or full season water access, through a range of investments in water storage and provision to cropland, with associated capacity development for households and groups to manage this water infrastructure. All activities in this Component will be closely associated and enhance initiatives of value addition under Component 1 and 2 – the location and scale of interventions will depend on identified and prioritised food production and cash crop production activities and their need for supplemental and full crop season irrigation.

79. **Implementation Strategy** - Considering the experience and capacity of minor irrigation and drainage development, the Bangladesh Agriculture Development Corporation (BADC) is proposed to implement activities under component 3. The BADC has a well-organized irrigation division headed by Chief Engineer (GOB grade II official). Mostly engineering graduates and diploma engineers are engaged in the developmental activities of the division. In the selected districts, Executive Engineers (Grade 5) will be overall responsible for the project interventions. Assistant Engineers (Grade 9), sub Assistant Engineers (Grade 10) and mechanics/technicians will be responsible for implementation of the activities. The activities under Component 3.2 (institutional support/capacity building) will be outsourced through competitive bidding where applicable. Some short term consultancy provisions have been proposed for ensuring sustainable water user groups formation and community participation in O&M in line with the participatory water management rule, environmental aspects in water management.

Sub-component 3.1 - Sustainable surface water management, drainage, conservation and utilization

80. The key activities will involve infrastructure development for surface water conservation and utilization for irrigation (high efficiency delivery systems), addressing drainage congestion, efficient irrigation system management, rainwater harvesting, and energy efficient water management etc. Selection of sites for specific activities will be based on ecological and environmental situations in the project areas and will be location specific. The following are a range of interventions and potential scale of interventions that have been identified based on needs prioritized by HVC growers, lessons learned in other projects, knowledge of the area and its production constraints, the focus on production and marketing of HVCs.

81. *Crop Protection dyke* - to protect crop land growing HVCs against tidal flood and heavy raining low land and char areas approximately 45 km of dykes will be made. During exceptional adverse condition of flood, people with their livestock will take shelter at dyke.

82. *Re-excavation and maintenance of canals* - To provide water for irrigation and/or drainage of excess water. To be undertaken for both water conservation as rainwater harvesting for irrigation and drainage facility. This will be implemented in the areas having problems of drainage congestion or tidal flooding causing delays in crop establishment and or irrigation facilities to meet crop demand. Around 376 km of re-excavation will be made in suitable sites in close links with FMP Groups. Canal water to be used for household consumption. Dykes will be used for sheltering of domestic animals during flood, fishing facilities created, navigation facilities improved and duck culture introduced.

83. *Construction of on-farm water management structures* - The small-scale structure will be built in the water course and canals at farm level as civil works to regulate water. The tidal canals in the project sites divide the homesteads. The structures will be constructed for crossing the canal to wider road and easier transportation of agricultural crop, goods and farm machines. Provisions were showed in the detailed cost tables.

84. The project area has a lot of water courses towards the field to enter the tide water at high tide & drain out the water again at low tide. The water course or canal needs foot bridge or cattle crossing to be used by farmers to carry tillage equipment, seedlings, fertilizer, cattle & for regular movement to take care of crops. The foot bridge or cattle crossings will have to build in such a manner that does not obstruct the natural water course. Some of the village road have pipe culverts of small & insufficient diameter to drain out the excess irrigation water or excessive rainfall. Some of new depression needs pipe culvert or water pass to drain out stagnant water. The small-scale structure will be built in the water course to connect market to field & homesteads.

85. The project area under consideration lacks rural agricultural infrastructure in comparison with other area. To facilitate communication facility some small structure construction is needed.

86. *Community pond excavation with homestead solar irrigation pump sets* - for water storage for productive uses - This will be mostly done in the southwest part where prevalence of salinity is more. Efficient irrigation system management for HVC will be implemented at the homestead level. In addition, solar energy will be used for domestic purpose and homestead vegetables. Efficient micro-irrigation like drip irrigation systems to be introduced for increasing irrigation efficiency for HVC.

87. Previously all homesteads have a pond for fish culture and house hold use. But now without any re-excavation or renovation of pond or village water body it becomes ditches with store of waste water & breeding place of mosquito. The pond and ditches of private & public ownership needed to re-excavate to store rain water.

88. The solar pump will be installed near the pond to continuous pumping & storing water over surface to make gravity flow of water to the plant, fruit trees & vegetables with drip type of irrigation using small water control tap.

89. *Promotion of solar irrigation pump sets and drip irrigation* - to maximise water use efficiency - Solar energy in the remote southern districts is getting popular for domestic supply. Where feasible, solar energy (no operating cost, thus cheaper option for energy saving) along with high efficiency drip irrigation system will be installed to support high value crops in the project sites. Research institutes may be involved in technological support and share experiences in installation of these high efficiency systems. Around 95 pump sets will be installed in suitable sites.

90. *Installation of buried pipe system* - for new pump and BADC existing pump (for water lifting devise from surface water sources) for irrigation to increase irrigation water use efficiency. In continuation of similar intervention through previous projects and programs the buried pipe system will be installed. The activities will be undertaken in newer schemes and in some cases it will be extended to old schemes to further increase command area. The system will reduce water loss thus reduce irrigation charge to almost half. Buried pipe irrigation system also saves land and water compared to conventional earthen or constructed channel. A total of about 250 kilometres of buried pipe will be installed. Extension of existing schemes will be for 48 kilometres.

91. Conveying irrigation water from source to the field with buried pipe is most popular to the farmer. Buried pipe reduces water loss up to no loss condition with no loss of valuable agricultural land as in case of constructed canal or earthen canal and it needs almost no maintenance work. So the system will reduce the irrigation cost almost half and increasing the command area under one pumping unit, the cost may be reduced more. Moreover, when a small land is separated by small ditch, homestead or orchard it can be connected by buried pipe irrigation system.

92. *Provision of hose pipe for irrigation scheme* - for conveyance of water to remote locations to extend the irrigation command area. Hose pipes will be provisioned for conveyance of water to remote locations which will increase irrigation area. It will reduce conveyance loss and conveniently distribute water, where needed. Approximately 12,500 meters of hose pipe will be installed in the selected project sites.

93. Hose pipe for irrigation is a new idea introduced in the project area. The small and marginal farmers appreciate this type of water conveyance system. Due to its most flexibility it can go around homestead, trees, ditches or any other obstruction of smaller height. It is easier to carry by farmer to field and store the same after irrigation work.

i) Artisan well installation - in areas of the confined (pressurized) aquifer zone in the southeast part. In the south-eastern part of the proposed project sites artisan aquifers zones are available and piezometric surface is close to the surface. This does not need abstraction through pumping. Tapping water from such shallow depth will be affordable and easy to use for irrigation. The resources will be utilized to irrigate high value crops of commercial importance. Around 100 suitable sites of such artisan well will be installed

ii) Dug well: South-western coast of Bangladesh have some saline problem to some extent. But the pond water infiltrate from surface water is drinkable and the dug well receive the same surface and sub-surface water which can be used for irrigation.

iii) Installation of rainwater harvesting structures - considering acute shortages of fresh water during dry season rainwater harvesting will be introduced at the household level both for irrigation and drinking water purpose. During the project implementation around 3,000 will be installed in the project duration.

94. Key activities of component 3 of the project are mainly efficient use of irrigation technology. Thus, it is expected that after project completion irrigation efficiency of the project site increase from 35% to 42%.

Sub-component 3.2 - Institutional support for Capacity Building

95. The interventions under this sub-component will address enhancing efficiency in service delivery of agency and relevant stakeholders. This will focus community ownership of the water management infrastructure through (i) Formation, mobilization, training and development of Water User Groups (WUGs), following government participatory water management guideline, (ii) skill development of the agency and water users and (iii) developing institutional facilities for better service delivery (office, transportation and other logistic support).

96. The activities proposed are based on the assessment of the existing facilities/ infrastructures in the proposed project sites. There are 18 offices of BADC in the proposed project areas where some renovations have been proposed. Activities under the sub-component are:

- Renovation of office/training center in the project sites (ten) for better office accommodation and pertaining training to the engineers, technicians, pump operators/managers, water user groups (farmers) etc.
- Overseas training for skill enhancement of relevant engineers and planners in efficient irrigation and drainage system design and planning
- Printing and publication of reports, project documentations and training manuals

97. **Technical Assistance**. TA under component 2 will cover subcomponent 3.2: ToT on water user groups and low-pressure high efficiency irrigation. FAO will contribute to the development of a training manual by focusing on the mobilization and training of water user groups and on low-pressure high-efficiency irrigation methods, rainwater harvesting, environmental aspects of surface water management, salinity management and climate change effects. After training manual development, FAO will train selected 2 batches (41 officials) BADC officers at district and upazila level. They will in turn train field staff.

98. **Component Exit Strategy and Sustainability**: The proposed project includes formation of WUGs who will be the primary beneficiaries of this component. The capacity of the groups will be enhanced through training so that after completion of the project, the groups will have the necessary knowledge and skills to be responsible for general O&M of the interventions of the water management

infrastructures. The project plans to build the capacities of BADC and their engineers, which after this initiative will be able to better contribute to the development of the South and potentially cascade their knowledge and support other areas of Bangladesh. In addition, the work foreseen between BADC personnel and the WUGs and communities at large will create strong linkages which will support any future project of this kind.

D. Lessons learned and adherence to IFAD policies and the SECAP

99. **Lessons learnt**. IFAD country comparative advantages and lessons learned are summarized in its COSOP 2012 – 2018 as below:

100. *IFAD has developed competencies in climate-smart rural infrastructure, agricultural technology, natural resources management, market access and microfinance. The highest impact, however, has been observed when several of these factors were combined with a value chain approach. Scaling up of successful experiences in partnerships with Government and other donors will be a vital element of this COSOP. Supporting agricultural research and strengthening its links to projects will help develop innovation and technology transfer to smallholders. Knowledge management will play a key role in generating innovations. Policy advice will draw on project outcomes related to key topics such as access to natural resources*.

101. The COSOP MTR report (Nov. 2015) also pointed out the opportunities deriving from lessons learned as outlined as: (i) Enhancing synergies within projects across components and across projects, (ii) Linkage between rural finance intervention and livelihood interventions, (iii) Promoting climate smart infrastructure and livelihoods resilience, (iv) Strengthening effective leadership and partnerships in project management, (v) Early implementation readiness; with prepared implementation modalities, cognizant of in-country systems and procedures, and necessary partnerships, (vi) Addressing issues of nutrition through nutrition sensitive agriculture, and (vii) Differentiated targeting of the youth.

102. *Tompro*, the accounting software used by some projects in the country programme, has resulted in being a sound financial management instrument, and providing good value addition in linking the accounting system to the project M&E for projects that chose to implement the software at the early start-up. Its feasibility for customization and reporting has shown good results in the projects for which was implemented. This is a good practice that new projects in the country programme including SACP should adopt and procuring such software that at the same time, complies with international standards and responds to the project needs at different levels in financial management with good capabilities and flexibility. Intensive and focused training and long-term agreement with the vendor will however need to be in place in order to build and strengthen the operational capacity of the management team, providing continued maintenance and update of the accounting software.

103. **Adherence to IFAD policies and SECAP**. The SACP is well in line with the national strategies in poverty alleviation, agriculture and rural development and climate change adaptation, as it is based on development-driven support to the vulnerable target groups, blending a number of multi-benefit intervention in enhanced production, post-harvest management with focus on processing and marketing, climate-smart surface water management and irrigation efficiency to help improve the access to opportunities for the rural smallholders. The Project responds to the Government's Southern Master Plan by channelling its investments fostering the responsiveness and competitiveness of rural smallholders in horticulture HVCs in Southern Bangladesh.

104. The Project objective and interventions refer directly to the overarching goal of the IFAD Strategic Framework 2016 – 2025, aligning its investments with transforming the agricultural sector towards higher, sustainable and climate-smart productivity, profitability, commercialization, connecting the smallholder farmer and rural households to market opportunities and improved support services to generate more income for improved livelihood, food and nutrition security.

105. **SECAP**. The environmental and social risk of the project falls under the *category B* in view of little or negligible adverse impact potential on natural and social environment, while it also falls under *category 'High'* regarding climate change risks. By committing to the below-mentioned approaches and activities, the project will significantly be reducing the perceived risks and expected to have a great contribution towards enhancing resilience and reducing poverty of smallholders in the target areas.

106. The SACP is envisaged to promote improved agronomic practices, knowledge base, research support and extension for high value crops, without having to affect natural environment. In order for extending better extension services and research facilities, a few minor construction-related activities will be undertaken. Although, little environmental hazard may be anticipated in relation to such unavoidable constructions, due to unavoidable overlap of project areas and environmentally critical areas (ECA), efforts need to be made to reduce environmental costs and meeting national conservation related regulatory requirements.

107. The SACP focuses on building Bangladesh's coastal smallholders' capacities on high value crop production and marketing, thereby enhancing smallholder farmers' resilience to challenges likely to be posed by climate change. The project will deliver enhanced resilience by responding to production challenges in terms of high temperature and higher levels of moisture stress, increased rainfall and runoff, higher susceptibility to floods, high soil and surface water salinity, higher wave interaction due to tidal regime, etc. While the activities that are oriented towards addressing the above climate induced phenomena, efforts will be considered to ensure environmental conservation in the forms of integrated pest management, enhanced use of composts including vermin compost, conjunctive use of surface and groundwater for irrigation, increase in irrigation efficiency and solid waste management in premium marketing centres. Emphasis will be given on water harvesting, which will also address lack of adequate source of potable drinking water. Utmost efforts will be made to eliminate the use of environmental resources from ecologically critical areas, while the value chains will be established taking into consideration locally suited high value niche (crop) products, that too involving as many women as possible. The marketing centres will be designed and built on elevated plinths in a bid to avoid inundation from floods and occasional cyclonic storm surges.

108. Recognizing the potential increase in intensity of climate change induced adverse impacts, the project will emphasize on building farmers' capacity to adopt the above mentioned adaptive measures, while they will also be given awareness training on reducing risks that are related to climate change. To further build local capacity to continue high value crop production by defying climate change, efforts will be made to strengthen research on crop varieties that are tolerant to climate change induced hazards.

SACP implementation arrangement

A. Approach

109. The project implementation will follow the Government DPP from IFAD project design report. SACP will be implemented in 6 years, starting with conduct value chain studies, baseline surveys and all management systems (accounting software, M&E and MIS database), as well as setup of multi stakeholder platforms. Throughout the implementation period, the project will focus on introducing and building capacity in new skills strengthening climate change resilient production methods, water management and post-harvest management and marketing techniques, and demonstrating adaptive methods and technologies for MOA staff and beneficiaries. The project will also give an emphasis on scaling-up successful models and good practices and mainstreaming these into focus value chains.

B. Organizational framework

110. The overall responsibility for SACP will be assumed by the Ministry of Agriculture (MoA), which is the Lead Project Agency. See detailed organigram in the appendix 5.

111. **Inter-department coordination and Project Office**. Mechanism and efficiency of inter-department coordination between DAE, DAM, BADC and BARI were further reviewed by the final design mission and an assessment of institutional capacities[17] was undertaken in this regard based on the project background paper No 1. The mission concluded that the four agencies are under the MoA, and they had collaborated in management and coordination of other projects. Inter-department coordination is maintained as part of the Ministry's organizational activities, as well as under the management framework of GAFSP-IAPP (2010 – 2016), that involved DAE, BADC, BARI and other departments. Ongoing World Bank and IFAD-assisted NATP-II also involves inter-department coordination.

112. **Project Steering Committee (PSC)**. The Project will be under the overall policy guidance of the Project Steering Committee chaired by the senior Secretary/Secretary of MoA and encompassing representatives from the ministries such as ERD and line departments that are related to the Project. The Project Steering Committee shall meet minimum twice a year and as and when necessary, to provide overall strategic guidance, monitor overall implementation progress, evaluate and approve annual work plans, facilitate interagency coordination required for smooth project implementation, and resolve any outstanding issues requiring high-level decisions.

113. **A Project Implementation Committee (PIC)** will be formed to provide technical guidance and bring in synergy with stakeholders and partners other than the MoA. The committee will be chaired by the Additional Secretary (PPC) and it will be composed of Project Director, Component Coordinator of BARI, one PO from the IFAD-assisted projects in the Ministry of Agriculture. The representatives of the MOA, Planning Commission, ERD, IMED, selected leading private firms and trade associations, and IFAD and FAO country offices shall be invited as stakeholders and observers. The PIC will play the role of technical exchange platform and synergy building among different development projects, where good practices and lessons learnt can be drawn to support the SACP implementation at operational level, and shared for cross-benefits.

114. The project structure of operational management and coordination will be established along the DAE vertical structure from central to the Union, with DAE, DAM, BADC, and BARI participation at applicable levels where available, and managerial and technical officers appointed from respective agencies. The project will fund Operational Support Teams (OST) at both central and district levels to support the Project Office and District Coordination Units (DCUs). DAE SAAOs and Marketing facilitators engaged by DAM will be the key contacts in reaching the farmer groups, with help of lead farmers selected among farmer groups.

115. ***At central level*, the Project Office** proposed for SACP will pay special attention to the leading functions of DAE and coordination among implementing agencies. The Project Office will be headed by a Project Director (PD) appointed from DAE by MoA and it will include Component Directors from principal implementing agencies namely DAE, DAM and BADC, and Project Coordinator from BARI, seconded by government-deputed officers and support staff will be supported by an operational support team of externally recruited experts whose positions are funded by the Project. A Senior Monitoring and Evaluation Officer from the DAE will be selected on deputation to support the PD).

116. The PD's responsibilities are summarized as follows:

(a) Ensure that the project strategy is applied through the implementation of all activities,

(b) Coordinate the programming of planned activities under the Project,

(c) Assume the inter-project coordination with the ongoing IFAD-assisted projects,

(d) Prepare and consolidate AWPBs,

[17] The assessment was incorporated into appendix 5.

(e) Coordinate the timely and proper implementation of approved AWPBs by each of the implementing line agencies,

(f) Ensure sound financial management of the project and consolidate project-related budgets, statements of expenditure and progress reports,

(g) Ensure timely project M&E and progress reporting,

(h) Preparing withdrawal applications,

(i) Ensure the undertaking of the annual auditing of the Project, and

(j) Other mandates and tasks that the Government and IFAD agree to assign

117. **PO staffing**. The PO will be staffed both with government-seconded officers and by externally recruited Operational Support Team.

118. Government-seconded officers will fill the following positions: Project Director, three Component Directors respectively from DAE, DAM and BADC, one Project Coordinator from BARI, one Senior Monitoring and Evaluation Officer, and other supporting deputy managers and staff where the Lead Agency judges necessary.

119. **An Operational Support Team (OST)** will be included in the PO and consultant specialists will be recruited through external and open process. The OST will be composed of one Project Management Specialist, one Financial Management Specialist, one Procurement Specialist and one Procurement Assistant, one M&E and KM Specialist, one Procurement Associate, five Accountants (one supporting the PD, and four supporting respective implementing agencies), one Gender Development and Safeguard/Governance Specialist, and other support staff where required.

120. ***At district level*, a District Coordination Unit (DCU)** will be established as technical hub and composed of one lead technical officer from each of the District DAE, DAM and BADC (who will receive salary and allowances from the project, GOB head), one deputy project coordinator will be engaged from BARI for this project (on additional duty, he will not receive salary and allowances from the project) and other necessary staff required in all the project districts. The DCU may have two junior specialists, one in the area of financial management and another in the area of monitoring and reporting. One operational Assistant (OA) for preparing reports and other documentation. The DCU will be embedded in the respective District DAE office. Under the over direction of the Project Director in the Project Office, the DCU will be led by the Deputy Director of District DAE and it will be responsible for coordination of the project activities implemented by the district project line agencies and/or other contracted service providers, ensuring operational coordination through the structure of upazila and union offices to the grassroots level, ensure the timely and operational functions in the areas of project financial management, M&E and KM, procurement support and follow-ups, at its own level and the lower levels. It will collect physical and financial periodic progress reports from the involved implementing agencies, maintain district consolidate records, prepare reports and deliver them to the Project Office. Other responsibilities include:

(a) Overseeing work of executing agencies and service providers and the selection of the target groups that will participate in project activities;

(b) Facilitating district and lower levels' participatory planning activities to determine which activities will be implemented in which communities;

(c) Reviewing and recommending to the PO the community-level implementation work plans prepared by the line agencies;

(d) Coordinating the involvement of district technical agencies and their grassroots-level extension, NGOs, private sector players, as well as farmers' groups; and

(e) Facilitating liaison with target communities, assisting with the collection of M&E data, and documentation of project activities.

121. **Upazila and Union Offices' Participation**. DAE offices at Upazila and Union will participate in extending the operational coordination from the DCU to the target groups. Upazila Agricultural Officer and Union Sub-Assistant Agricultural Officers (SAAOs) will be the focal persons for the field implementation. Similarly, BADC's upazila Sub-Assistant Engineers will participate in field implementation.

122. ***DAM*** will engage through outsourcing Marketing Facilitators at upazila level to work with the farmer groups in the unions.

123. ***In each project union***, three lead farmers will be selected from the selected farmer groups and they will be engaged on a basis of daily basis remuneration in accordance with actual day(s) occurred, to support the field work of upazila officers of DAE, BADC and DAM marketing facilitators.

124. **Farmer Producer and Marketing Groups** are the entry point for SACP implementation. The project strategy and activities are geared towards ensuring that, by the end of the Project, farmer groups grow into more professional players in targeted value chains, and some of them graduate into production and marketing cooperatives. DAE SAAOs, BADC Sub-Assistant Engineers and DAM-engaged Marketing Facilitators will work to reach the target farmers and their groups with assistance from the engaged lead farmers, mainly in facilitating the identification of their priority needs and connecting them to the support by the Project, delivering project messages, supporting farmers groups and communities to set up better organisations and structures in value-added production enhancement and post-harvest management, collecting performance data for transmission to the DCU through DAE Upazila and Union offices, and providing feedbacks on performance of service providers.

125. **Implementation responsibilities**. Component-wise lead implementation agencies are as follows:

- DAE for component 1,
- DAM for component 2,
- BADC for component 3, and
- BARI will support the three implementing agencies with researches linked to areas of interventions identified under the three technical components.

126. Options will be explored to link the benefit M&E system with the project management M&E system (which will be in line with IFAD's revised results and impact management system (RIMS)). Such linkage will avoid duplication of data collection and improve the possibility of attribution of results to project activities.

127. **Country Programme Support unit (CPS unit)**. In the perspective of a country Programme Support unit (CPS) aiming at improved cost efficiency for the Country Programme management, capacity building is foreseen and detailed programming will be led by the ERD. The SACP will actively participate in this in-country initiative.

128. The CPS unit will provide technical support services in three key areas: M&E, Knowledge Management and Communication, and Financial Management. However, the design of this mechanism is flexible enough to respond to project needs in other technical areas as they arise and jointly identified by IFAD financed projects.

129. The discussion on the modalities and responsibilities of the CPSU will be further reviewed jointly by IFAD, ERD, MoA and other involved ministries and agencies in a bid to ensure ownership and sustainability.

130. The main lead partners as implementing agencies of project key interventions are as follows:

#	Subcomponents	Implementing Agencies
1.1	Assessment of HVCs and group mobilization	DAE, DA
1.2	Demand-driven research	BARI
1.3	Extension Service for smallholder farmer on HVCs	DAE
1.4	Institutional support for research and extension	DAE, BADC
2.1	Capacity building of farmer marketing groups	DAM, DAE
2.2	Post-harvest and processing investments	DAM
2.3	Development of food safety measures along the value chain	DAM, DAE
3.1	Sustainable surface water management	BADC, DAE
3.2	Institutional support for Capacity Building	DAE, DAM, BADC, BARI
	TA	DAE, FAO

131. **Technical Assistance**. A separate fund within the overall SACP loan will be used for Technical Assistance (TA) by FAO to the SACP Project Office and implementing agencies and matched by an additional IFAD grant. The fund will be managed and implemented by FAO Bangladesh under the direction of and in agreement with the Project Director, with support from FAO Country Office and technical units in the Region and from HQ.

132. The TA component will provide technical assistance and capacity building targeted at specific areas that will benefit from strengthening among government project implementation partners. TA activities will concentrate on: a) training of trainer's activities, b) assisting the development of a benefit M&E system and C) support to background studies.

133. Expected Outcome: The capacity of implementing agencies has been strengthened to successfully implement the Smallholder Agriculture Competitiveness Project and reach expected SACP results.

134. Because of the nature of the TA activities, the TA input is foreseen to have a duration of four years, whereas the SACP is foreseen to be implemented over a six-year period. This funding will be managed under a standard Unilateral Trust Fund (UTF) with FAO. The TA team will be accountable to the Ministry of Agriculture in respect to implementation of activities in accordance with the detail AWPB. If there is any residual fund after implementation of planned TA activities, the funds will be used for implementing investment activities by the PD. The TA plan is detailed in appendix 12.

135. **Private sector participation**. The project will create a congenial environment for Public, Private and Producers Partnership (4Ps) so that private inputs companies, agro-processors, wholesalers, traders and exporters could also assess potentialities of HVCs in southern delta, their business expansion, market linkages and work together with government agencies for investing with the SACP producer and marketing groups.

136. Under component 1, market-led value chain research will ignite such partnership followed by upazila-level consultation on identification of potential technologies where private sector would be inclusively involved. These events will identify possible private sector investment in bulk inputs supply for the producer marketing groups, marketing, processing and manufacturing of appropriate scale machineries, etc. It will be further strengthened through Market-led Farmers Field School (MFFS) initiatives where private sector actors will be involved as session trainers and there will be a vibrant line of linkage with the private sectors and the MFFS leaders under this project intervention.

137. Under component 2, the project is investing in reducing the market inefficiency, especially in terms of asymmetric information. The project will create an entry point for the private sector to communicate to the producers their requirements in terms of quality and quantity, price conditions for different marketable categories, packing and packaging, delivery conditions. This will help reduce the perception of additional costs, or risk of negative return from quality and quantity assurance at production level by the buyers. The SACP addresses the buyers' needs by creating the platform

(farmer groups) for buyers/private companies to reach large number of farmers in a cost-effective way and also by sharing the larger portion of the cost for farmers' training. In these training sessions, buyers/private businesses, alongside the project technical personnel, will communicate to the farmers on their needs and how to conform to those needs. The buyers/private businesses which will collaborate with SACP to test this business model and communicate and apply their required quality standards with the farmer groups are very likely to get their return on investment and will continue to carry out similar activities beyond the project – thus leading to a more efficient market system. A total of around USD 2 million is estimated as investments from the private sector (in both cash and kind) in quality standard assurance.

138. Once the production by farmer groups reaches a desirably sizeable volume that meets the buyers' quality requirements, investments from the private sector in processing, storage and packing will join in search of better value addition. The project also directly invests in small pack-houses and processing equipment, for which the private entrepreneurs will match an estimated amount of USD 3.24 million (30% or an average matching of US10,800 by 300 private entrepreneurs) to access to the project grant programme.

139. The project will promote private sector participation and invite the private sector representatives to join ToT sessions on market-led Farmer Field Schools, market facilitation and post-harvest techniques. Which companies and traders will be invited will depend on the results of the buyer mapping that is proposed to be carried out by DAM national and district staff at the start of the project under component 2.2, and for which FAO can assist with methodology.

140. The private sector would be willing to contribute to these ToTs because it will ensure that DAE and DAM training programmes for farmers respond to market realities. For buyers ultimately it will contribute to enlarging their supply base and lowering their transaction costs. For input suppliers, it will enlarge their customer base. The private sector contributions to TA activities will be in-kind through the contribution of their time in 18 ToT sessions. If on average 4 private sector representatives join a ToT session for half a day each, this will be a total of 34 person days. If valued on average at 250 USD/day total of travel costs plus traders' opportunity costs (for larger buyer it may be more, for smaller trader it may be less), this would amount to USD 9,000.

C. Planning, M&E, learning and knowledge management

141. **Planning**. The SACP will apply a results-based management approach which establishes a solid linkage between planning (including resource allocation), implementation, monitoring and expected results. The Project Annual Work Plan and Budget (AWPB) will be a basis for implementation and should clearly describe the strategic direction of the project for the coming years by resenting a budget estimate, the expected results under each component and how these results would be achieved with risk analysis if any. The preparation of AWPBs will be jointly conducted by the project management in consultation with DCUs, all implementing partners, private sector, local service provider and beneficiaries (farmers and women) where relevant. A participatory annual planning process with stakeholders will be set up to ensure the bottom-up feedback on community needs, priorities, contextual opportunities and limitation.

142. **Monitoring and evaluation**. The integrated Monitoring and Evaluation (M&E) and Knowledge Management (KM) system will be developed in accordance with IFAD guidelines and government frameworks. It will have with three main objectives as following:

(i) *monitoring results*: it will enable the tracking project outputs and outcomes, within farmer groups and communities, between genders, age groups and different social groups.

(ii) *implementation guiding and policy dialogue*: the information and analysis of data will support timely results-based management at all levels to develop profitable and sustainable activities and to adapt strategies accordingly. It will also support policy decision making of MOA to better respond to the challenges of agricultural commercialisation in the Southern Bangladesh.

(iii) *knowledge sharing and scaling up of good practices*: the integrated M&E and KM system will capture lessons, shortcomings for risk management, good practices, successful innovations and technologies options or scaling up.

143. **Strategic principles.** The integrated M&E and KM system's features will be: (i) *open and easily accessible*, i.e. information and knowledge should be available to all stakeholders and not restricted to project or MOA staff; (ii) *participatory and accountable*: the process of planning, monitoring and knowledge dissemination will involve associate project stakeholders and beneficiaries with two-way communication i.e. upward (to and from government and IFAD) but also downward (to and from project stakeholders and target groups) and horizontal (with other projects); (iii) *focused on analysis, learning and sharing* in support of decision-making and policy dialogue, and not merely on data production and consolidation; (iv) *harmonised* with and connected the government's relevant information systems such as *Access to Information* (a2i) Programme and to IFAD country portfolio M&E system; (v) *inclusive* to allow women, poor and marginalised groups participate in the system; (vi) *strengthening*: building capacity and better respond to the people needs and market demand.

144. **Monitoring framework**. The participatory M&E and KM system will be decentralized from the Lead Agency at central level to Coordination Units at district, upazila and union levels under the guidance of a Project Director at the Project Office with the support from TA and in consultation with project stakeholders. It will incorporate regular data collection and feedback from beneficiaries and implementing partners. The data will be collected and analyzed at upazila and district levels for both outputs and outcomes to the extent possible prior to the compilation and in-depth analysis by the Lead Agency at central level. The SACP management will report to IFAD and as well downstream to implementing partners and beneficiaries.

145. **ICT-based participatory M&E**. An ICT-enabled Management Information System (MIS), possibly through GIS mapping and tablets, will be developed to facilitate the flows of data and timely monitor on-going interventions. The standard IFAD Monitoring and Evaluation system (SIMES) excel database will feed data into the MIS. A computerized MIS will be designed to allow decentralized inputting of data and centralized analysis and storage can serve as a useful tool for managing information. The MIS will track financial and technical data on project outputs and outcomes in order to draw lessons learnt, good practices, studies and other important sector information analysis for knowledge sharing to all stakeholders and decision making at the project management. The information will also be available through the project website and IFADAsia.

146. **RIMS and logframe**. The SACP logical framework will be used as roadmap for annual planning, monitoring and evaluation. In line with IFAD's revised results and impact management system (RIMS), expected results will be measured at two levels; outputs and outcomes. Core Indicators (CIs) and project-specific indicators are selected and integrated in the logical framework and will be monitored through its participatory M&E and KM system. It will serve as a tool with which IFAD can report to the public on its contribution to broader country results and the SDGs. The project logframe will also be linked to the economic and financial analysis. Data will be disaggregated by sex, age (youth or adult), sector (crop/fruit/vegetables/legumes etc) and other socio-economic status to the extent possible so as to enable a proper assessment as to whether the project is reaching its intended target beneficiaries, poor households, smallholder farmers, women and vulnerable groups.

147. **Linkage SACP with COSOP**. SACP will identify relevant project indicators to COSOP level. In addition to the logframe and RIMS indicators, the project will report on the COSOP indicators to IFAD country office (CO) in Bangladesh on a semi-annual basis. The results will be consolidated and analysed at the country level to integrate into excel and on-line COSOP monitoring and evaluation system. For this purpose, the project will use SIMES for data storage and analysis. The COSOP monitoring system will be used to track and improve the capacity of all projects in achieving the strategic objectives mentioned in the COSOP.

148. **Reporting and studies**. The following will be the key elements of the project M&E system: (i) a practical M&E manual detailing clear objectives, scope, reporting structure, staffing, capacity

building plan, roles and responsibilities, budget and M&E-related activities with timeframe; (ii) annual M&E plans; (iii) logical framework reporting: semi-annual update on the achievements of each indicator set in the project logframe, even in the first few years of implementation when higher-level results are not yet expected; (iv) Management information system (v) baseline[18], mid-term outcome and impact assessment studies; (vi) annual and semi-annual reports to be submitted to IFAD; (vii) risk assessment and exist strategy; (viii) research and thematic studies and (ix) regular field visits and annual joint implementation reviews.

149. **Theory of Change (ToC).** Learning from the experiences of other IFAD-funded projects in Bangladesh, there is a need to develop a more comprehensive and reliable M&E and KM system whereby the project is able to show the outcomes and results intended by the interventions. The project will use the M&E tools together with ToC logic model that provides a roadmap defining where the project aims to reach and how SACP's goal and development objective are achieved. The assumptions will be monitored by concerned M&E staff at Lead agency and District Coordination Units (DCUs). In addition, the ToC model also helps the project in a more realistic planning. The process will be participatory whereby project staff, project stakeholders and beneficiaries are involved in developing the theory as well as in periodical revisions and updates.

150. **Learning and knowledge management**. SACP represents a good linkage between high value crop production, marketing and commercialization together with nutrition aspect. The dedicated M&E concerned staff will also be responsible for knowledge management and learning. Processes for learning start with the various implementing agencies. SACP will implement a process of internalization, which involves identification of key lessons for each of these agencies and the adoption of these lessons in the processes used by these agencies such as training modules.

151. **Knowledge Management and Communication (KMC)** strategy will be developed in line with IFAD policy on KM and to ensure that knowledge, technologies and innovations generated within the project is systematically identified, analysed, documented and shared, and that it is used to: (i) improve project performance and delivery of project objectives; (ii) be flexible and responsive to changing circumstances; (iii) support the dissemination of innovation to the benefit of stakeholders throughout the project area and beyond; (iv) provide information to support decisions on up-scaling to be made at mid-term review; and (iv) identify important issues to convey to policy makers. Particular attention will be given to documenting good practices, successful technologies and innovation model for sustainably-competitive agriculture. Information will be shared with and discussed by the multi-stakeholders' platforms. Monthly coordinating meeting among all agencies and relevant stakeholders will be organized by DAE at district level to discuss progress towards results, lessons as well as current and/or potential implementation issues.

152. **Knowledge tools and platform.** Lessons and good practices will be shared more widely through regular project progress reports, special thematic studies and assessment. A project website will be developed within the first year of implementation and used as monitoring tool and knowledge sharing platform. Data, information and knowledge will be disseminated via the project website, newsletters, workshops, seminars and IFAD communication channels (IFADAsia Portal, Facebook etc) beyond the project level. It will also contribute to the *Access to Information* (a2i) Programme[19] of Prime Minister's Office which is currently developing an agricultural service portal and e-services. Information flow between beneficiaries and implementing partners in the field is of utmost relevance in fostering ownership and participation.

153. **Knowledge exchange**. Exchange of experience between SACP and other projects will be arranged for lateral knowledge transfer and learning with the coordination support from IFAD. The SACP will participate actively in country and regional knowledge networking activities in areas relevant to the Project, including effectiveness of a) diversified and enhanced HVC production, b) development of farmers' groups, c) improvement of technical service support systems in agriculture,

[18] The baseline study will be carried out prior to the start of project implementation.
[19] http://a2i.pmo.gov.bd

d) linking research to farm production, e) differentiated targeting approaches on mainstreaming women, disadvantaged and vulnerable groups, f) value chain development, post-production loss reduction and value addition, g) sustainable water management. Regular contributions to the country programme's database of knowledge management will be expected and the project management will be encouraged to take part in experience sharing related to poverty alleviation and agricultural and rural development in the regions of South Asia and South-East Asia.

D. Financial management, procurement and governance

154. **Financial Management (FM)**. The proposed financial management arrangements for the project incorporate a number of measures intended to reduce risks to acceptable levels, ensuring that: (i) the project funds and assets created are used for their intended purposes in an efficient and effective way; and (ii) reliable and timely financial reports are prepared and submitted to the Government and IFAD.

155. **Accounting**. The accounting policies and procedures of the project will be governed by the Government's procedures which follow the cash basis of accounting. These standards are in the process of being aligned with International Public Sector Accounti8ng Standards (IPSAS). The existing GoB system outlined in the Project Accounting Manual of the Ministry of Finance will be the base for the PIM and the FM manual. The PO will have the primary responsibility to maintain an adequate FM system across all levels of implementation of the project and to provide accurate and timely financial information to the Government and IFAD.

156. The project will procure and adopt an accounting system package conforming international standards during start-up. In addition, a simplified FM system will be implemented at the District Coordination Units to ensure proper reporting to each of the Implementing Agencies. The project will guarantee the availability of resources to conduct periodic training on the use of the accounting software to strengthen the capacity at the district level.

157. As there has been positive results from the use on an accounting software in the country programme which has been recalibrated to meet the accounting and reporting requirement for both government and IFAD, MoA should consider using the same software for SACP, which would provide the Project better value for money.

158. **Financial reporting**. The Project Office (PO) will be responsible of consolidating the financial information from the Implementing Agencies and to prepare semi-annual and annual (audited) Financial Reports (FRs) for all relevant parties. The Implementing Agencies (DAE, BADC, DAM and BARI) will be responsible of consolidating the financial information from the District Coordination Units (DCUs). The FRs will be consistent with International Accounting Standards and the Project's Finance Manual. Semi-annual Financial Reports with accurate and updated financial information will be prepared by the PO for submission to IFAD within 45 days from the end of each semester.

159. Financial Reports will be produced directly from the automated project accounting system (with the capability to report by component and by category of expenditure), and not from any other stand-alone manual or electronic system. The PO and the Implementing Agencies will need to have the capacity to record GoB contributions, as well as in-kind contributions of private companies and beneficiaries, if necessary.

160. **Flow of funds and disbursements**. There will be two Designated Accounts at the Central Bank of Bangladesh under SAFE arrangements to receive the funds of the loan and the grant respectively. The DAs will be managed by the PO, and transfers to the Implementing Agencies will be made according to consolidated financial information and approved AWPBs. The project will open two Project Accounts in local currency to receive transfers from the Designated Accounts at the PO level. Also, four project sub-accounts in local currency will be opened for the corresponding implementing agencies, namely DAE, DAM, BADC and BARI to receive transfers from the Designated Accounts. Three separate accounts will be opened in every District Coordination Unit (one per each

Implementing Agency); participating BARI stations will also open and maintain their accounts where applicable.

161. The Project Office will be responsible for transferring project funds to the operating accounts of the Implementing Agencies. These transfers will be treated as advances at the PO, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated.

162. *A* start-up advance will be provided once the financing agreement has become effective to facilitate implementation readiness, pending satisfaction of the disbursement conditions specified in the financing agreement. The ceiling of the start-up will be agreed upon at negotiations based on a realistic plan.

163. Transfers to entities implementing SACP activities will be treated as advances, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated.

164. **Internal controls**. SACP will be required to establish adequate internal controls and procedures in the PIM and in the Financial Manual to guarantee: (a) operations are being conducted effectively and efficiently; (b) financial and operational reporting is reliable; (c) applicable laws and regulations are being complied with, and (d) assets and records are safeguarded.

165. At a minimum, the procedures should include the following measures: (a) Reliable personnel with clear responsibilities i.e. segregation of duties; (b) Adequate financial records management system with complete audit trail; (c) Physical safeguard, including use of safe, locks, guards, limited access, and access by authorized persons to provide security for program assets; (d) Independent check, with procedures made subject to random independent reviews.

166. **Internal Audit**. Internal auditing will be carried out by private firm twice in the life of the project. The preparation of the audit plan will take into account the different levels and agencies involved in the implementation. Its cost will be incorporated in the cost table and AWPB.

167. **External audit**. The Foreign Aided Projects Audit Directorate (FAPAD) of the Office of the Comptroller & Auditor General (OC&CAG) of Bangladesh will conduct an audit of the project's annual financial statements within six months of the end of the fiscal year. The audit will be carried out on a yearly basis and in compliance with INTOSAI and the IFAD Guidelines on Project Audits. IFAD may request external audit if needs of audit are not addressed in line with the agreed ToRs or irregularities in the auditing exercise are found and not corrected.

168. External auditors will be required to express their opinion based on IFAD Guidelines on Project Audits. A detailed management letter containing the assessment of the internal controls, audit findings, update on previous audit observations, compliance with IFAD Financing Agreement covenants and suggestions for improvement will be prepared and submitted together with the audit report.

169. **Procurement**. Procurement of goods, works and services of SACP shall be carried out in accordance with the provisions of the Public Procurement Act 2006 (PPA) and the Public Procurement Rules 2008 (PPR), to the extent that are consistent with IFAD Procurement Guidelines. If there is any conflict between the government and IFAD procedures about any unique procurement, the provisions identified in IFAD Project Procurement Guidelines and IFAD Project Procurement Handbook as referenced by the Financing Agreement shall prevail.

170. Procurement will be conducted by the implementing agencies DAE, DAM, BARI, BADC according to the level of authority structured for the project. A detailed list of common items will be prepared for procurement through Project Office.

171. All the implementing agencies have the experience in the procurement function; however, their human resources capacity is assessed as not sufficient to handle the project procurement

activities. To minimize the associated risk, procurement specialists will be hired in the principal cost centers of the project.

172. All National Competitive Bidding (NCB) procurement under SACP will be done through the electronic government procurement (e-GP). As an added risk mitigation measure, IFAD would undertake prior and post review of procurement decisions.

E. Supervision

173. *Supervision.* IFAD will administer the loan, grant and supervise the project. IFAD's annual direct supervision will mainly relate to the project financial management, its physical and financial progress, implementation management's efficiency and implementing agencies' performance at all levels. Supervision missions will primarily address issues such as: (i) Project fiduciary aspects, (ii) Implementation progress, (iii) Outputs and outcomes under related components and modules, (iv) Sustainability, (v) Risks and opportunities, (vi) Innovations and knowledge management, and (vii) Poverty focus, targeting and gender mainstreaming.

174. *A Mid-term review* will be conducted by IFAD. This is tentatively scheduled for 2020 at the end of the third full year of implementation. A key function of the MTR will be to review outreach to target groups and target segments' capture issues, and to adjust project focus, budget and design if considered necessary.

175. *Implementation support* will be provided by IFAD as follow-ups of its direct supervision and progress review, and as response to possible supports required by the project office. Support will be conducted on a demand-driven basis and in accordance with needs identified.

F. Risk identification and mitigation

176. The Project design aligns the IFAD investments with the Government's development policies and strategies in poverty alleviation, agriculture and rural development; it is based on the development needs and priorities that related stakeholders and beneficiaries identified and proposed. Risks associated to the Project should therefore relate to the uncertainties caused by the climate changes, and the fast-changing socio-economic environment, or being of operational nature mostly. Several risk factors have been reviewed in accordance to their coherence to the Project. Some of them are closely associated to the project implementation, others more on a continued basis, as shown in the following table.

Table 1: Risks and mitigation measures by project components/interventions

#	Risks	Risk level before mitigation	Risk reduction approach	Residual risk level
	Component 1			
1	*Lack of available staff in DAM and DAE at Upazila and Union levels.*	*Medium to High*	*DAM and DAE personnel seconded to SACP for sufficient percentage of working time as part of performance indicator.*	*Low*
2	*Lack of relevant skills in DAM and DAE staff at Upizila and Union levels*	*Medium to High*	*Capacity building provided at start-up and continuously*	Low
3	*Access problems for some of the Upazilas during the monsoon seasons*	*High to Medium*	*Implementation planning taking into account seasonality*	*Low to medium*
	Component 2			
4	*Institutional buyers unwilling to engage with SACP*	*Medium to low*	*Employment of IMF/RMF/MGF to promote the SACP to institutional buyers*	*Low*
5	*Farmer groups fail to be transformed into FPMGs*	*Medium*	*Capacity building to strengthen group operational and service functions*	*Medium to low*
6	*Institutional buyers fail to provide incentives for quality*	*Medium to low*	*Trust building behaviors established Targeting of high-end institutional buyers*	*Low*
7	*Collaboration from existing traders and market intermediaries to FPMGs*	*High to medium*	*Pursuing their participation in multi-stakeholder platform*	*Medium to low*

8	*Multi-stakeholder platforms fail to engage all parties*	*Medium to low*	*Capacity building programs* *Social contracts/obligations to deliver* *Employment of RMF to liaise with all stakeholders*	*Low*
	Component 3			
10	*Lack of interest of the beneficiary groups in ownership building of the infrastructures*	*Medium*	*Capacity building for group ownership and governance*	*Low*
11	*Lack of coherence among the components in selection of sites of interventions*	*Medium*	*Strong coordination capacity and leadership in the project Director and the steering committee;* *TA for process and technically backstopping*	*Low*
12	*Delay in implementation of infrastructure works*	*Medium to high*	*Strong monitoring from BADC and FAO to, adhere to the time line, linkages with local authorities.*	*Low*
	Project management			
13	*The institutional assessment found large staffing gaps at the field level in the extension and inputs departments and an almost complete gap in the marketing department.*	*High*	*Significant staff recruitment and training is envisaged. The capacity building will be provided together with FAO technical assistance and the country programme support unit.*	*Medium to low*
	Financial management			
14	*Inaccurate accounting records and reports due to manual operations*	*High*	*Procurement and installation of accounting software package to be installed and customized at start-up. Capacity building to be provided to automate report generating in due categories; regular consolidated reports to be maintained timely*	*High to medium*
15	*Internal Audit* *No formal internal audit function in place*	*High*	*Internal auditing carried out by private firm twice in the life of the project, covering involved levels and agencies*	*High to medium*

SACP costs, financing, benefits and sustainability

A. SACP costs

177. Total Project Costs is estimated at USD 109.85 million. This is inclusive of all contingencies of USD 3.99 million, beneficiary contribution in the form of participation at USD 6.6 million and USD 8.1 million private sectors, USD 28.65 million will be funded from the government including staff salaries, rentals and in the form of waiver of taxes and duties.

B. SACP financing

178. Financing plan: The proposed financiers for the Project are IFAD loan, the Government, beneficiaries, private sector, and IFAD grant. IFAD PBAS loan will finance about USD 64.5 million about 58.7% of total project costs, the government counterpart funding will be about USD 28.65 million (26.1% of the total project cost) including taxes. The IFAD grant is estimated at USD 2 million (1.8% of the total project cost).

179. Project Costs by Project Component: The project cost is distributed into four different components of the project. These are summarised in Table-A9.1 below.

Table A9.1 Financing Plan by Components - Including Contingencies (000 USD)

Table 1
Project costs by component and financier
(Thousands of United States dollars)

	IFAD loan		*IFAD grant*		*Private sector*		*Beneficiaries*		*Borrower/ counterpart*		*Total*
Component	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*
1. Enhanced production of high-value crops and	10 505.6	61.2	404.6	2.4	1 956.1	11.4	838.1	4.9	3 459.5	20.2	17 163

technology adoption											
2. Processing and marketing of high-value crops	20 443.0	59.9	665.6	2.0	6 175.5	18.1	23.7	0.1	6 792.7	19.9	34 100
3. Climate-resilient surface water resource management	26 238.9	57.1	161.5	0.4	-	-	5 706.7	12.4	13 850.9	30.1	45 958
4. Project management	7 310.7	57.9	768.4	6.1	-	-	-	-	4 543.6	36.0	12 622
Total	**64 498.2**	**58.7**	**2 000.0**	**1.8**	**8 131.6**	**7.4**	**6 568.5**	**6.0**	**28 646.6**	**26.1**	**109 845**

Total investment costs are estimated at USD 94.66 million and these accounts for about 86% of the total project costs, USD 15.18 million are recurrent costs. The category of civil work accounts for 38.4% of the total project cost, followed by training and workshop (22.9%) and goods, services and inputs (18.6%), salary and allowance (12.1%), vehicles and equipment (3.3%), technical assistance (2.9%) and lastly the operating costs (1.8%).

Project Costs by Disbursement Accounts: Disbursement accounts, derived from the expenditure accounts, provide the basis for determining the financing plan for the Project. Following Disbursement accounts have been set in accordance with IFAD circular:[20] works, vehicles and equipment, goods, services and inputs, training, workshop, surveys and studies, technical assistance, salaries and allowances and operating costs. These are provided in Table A9.2 below.

Table A9.2 Expenditure Accounts by Financier (000 USD)

	IFAD loan		*IFAD grant*		*Private sector*		*Beneficiaries*		*Borrower/ counterpart*		*Total*
Expenditure category	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*
I. Investment costs											
A. Works	25 041.2	59.3	-	-	-	-	5 706.7	13.5	11 484.3	27.2	42 232.2
B. Vehicles and equipment	2 542.2	70.0	-	-	-	-	-	-	1 089.5	30.0	3 631.8
C. Goods, services and inputs	10 753.6	52.7	482.3	2.4	6 357.3	31.2	861.7	4.2	1 933.3	9.5	20 388.3
D. Training, workshop, survey and studies	18 577.7	73.7	-	-	1 774.3	7.0	-	-	4 841.6	19.2	25 193.6
E. Technical assistance	1 517.7	47.2	1 517.7	47.2	-	-	-	-	182.9	5.7	3 218.4
Total investment cost	58 432.5	61.7	2 000.0	2.1	8 131.6	8.6	6 568.5	6.9	19 531.6	20.6	94 664.2
II. Recurrent costs											
A. Salary and allowance	6 065.8	45.8	-	-	-	-	-	-	7 192.6	54.2	13 258.4
B. Operating costs	-	-	-	-	-	-	-	-	1 922.4	100.0	1 922.4
Total recurrent cost	6 065.8	40.0	-	-	-	-	-	-	9 115.0	60.0	15 180.6
Total	**64 498.2**	**58.7**	**2 000**	**1.8**	**8 131.6**	**7.4**	**6 568.5**	**6.0**	**28 646.6**	**26.1**	**109 845.0**

C. Summary benefits and economic analysis

180. The SACP economic and financial cost benefit analysis estimated that the project investments in enhanced production of high-value crops, processing and marketing of high-value crops, and surface water management would result in agricultural diversification and productivity increase. The analysis estimated the following benefits: (1) increased production and productivity of high value-added crops (*non*-paddy crops); (2) improved agricultural technology and practices that increase productivity; (3) improved water security for agricultural production to reduce water

[20] Standardised category Descriptions for Loan/Grant Allocations Tables (Schedule-2) in Financing Agreement, ref: IFAD Circular number IC/FOD/02/2013 dated 29 August 2013.

availability risk due to salinization and seasonal fluctuation; (4) improved marketing, post-harvest management, and value addition (agro-processing); (5) labor and job creation.

181. The analysis was estimated for 180,000 ha of targeted areas operated by 10,000 commodity interest groups with an average household landholding of 0.72 ha (average of the Southern region of Bangladesh). The average membership in each group is around 25 people, and the total cumulative numbers (beneficiaries) will be 250,000 people in the target areas. The cumulative landholdings by the targeted population will be 180,000 ha in the target 30 *upazilas* in 11 districts in the southern part of Bangladesh.

182. The project benefits were quantified based on crop production models of representative farms in the Southern region. Separate crop budgets were prepared for each representative commodity. The major crops that were covered in the analysis are the following: pulse crops (mung beans and grass pea), oil seeds (sunflower seeds), spices (garlic and turmeric), fruits (sapota, mango, hog plum, guava, and water melon), vegetables (pumpkin, eggplant, okra, tomatoes, ridge gourd, bitter gourd, arum, and country bean), and paddy (high yield Aus variety).

183. The project as a whole was estimated to have an economic rate of return (IRR) of 16 percent, the net present value (NPV) was around BDT 2,482 million with a BCR of 1.30. The economic return would be robust, and the return could be maintained above the discount rate of 10% even with a cost increase and benefit decrease of 20% as well as a delay of benefit generation for 2 years.

D. Sustainability

184. The Project incorporates numerous features designed to promote long term sustainability.

185. *Institutional sustainability*. In direct response to the Government's Master Plan for Agricultural Development in Southern Region of Bangladesh, the Project will support both demand and supply sides of agricultural transformation, assist the smallholders to graduate from subsistence farming to market integration, and strengthening the country's institutional technical support system in the area of agricultural extension and marketing, action research and irrigation management. The continued strengthened institutional technical support by MoA and its technical departments' operational structures is the best guarantee of sustainability.

186. *Operational sustainability*. The design gives attention to the market-led value chain development in partnership with private sector operators facilitated by farmers' groups and other active market players and supporters. Support will also be placed on the development of improved market access and linkage involving better processing, transport efficiency, post-harvest loss control, storage facilities, contractual relationships, production of quality products, and capture of premium prices;

187. Enhanced production methods and technologies aim at introducing responsive and competitive coping strategies in horticulture HVCs and taking into account the environment protection and conservation, climate-smart and based on income generation specialization and diversification, instead of ordering pre-identified production activities. HVC production models are compatible with the local production activities, which are profitable at current prices with full accounting of operating and capital costs. Demand for these products is based on local consumption and market, with potential of export sales;

188. *Technical sustainability*. The technical service support is designed to promote increased responsiveness of the extension and marketing services to real needs, and increased accountability to farmer clients. Government is already showing increased willingness to strengthen the service support system in line with the results being achieved; success of such service support mechanism can be referred to the system as good practice and for systematic replication;

189. *Social sustainability*. The design emphasises the development of self-sustaining community-based organisations such as farmers' interest groups in production, marketing and water management, which will be strengthened to play a key role in the implementation and on-going management of project activities where applicable, such as in the area of O&M for the sustainable use of collective assets.

Appendix 1: Country and rural context background

A. Country Background

1. With a population of about 150 million[21] living in an area of 147,570 square kilometres (or 1,045 persons per square kilometre), Bangladesh is one of the most densely populated countries in the world. About 80 percent of the population lives in rural areas and is mainly engaged in agriculture and related non-farm activities. More than two thirds of the rural population is landless or functionally landless (owning less than 0.2 hectares of land), 35 percent are below the national poverty line and 21 percent are classified as very poor[22]. Endowed with limited land and other natural resources, and with a high population density, poverty is a pervasive problem in rural Bangladesh. Bangladesh has the third highest number of poor people in the world.

2. Bangladesh aims to become a middle income country by 2021; to achieve this will require among others that the Government of Bangladesh (GoB) overcomes considerable challenges in agricultural development and rural economic growth. The country's annual GDP growth averaged about 6 percent between 2000 and 2013. Bangladesh has also made noteworthy gains in education and health, and is well set to achieve most of the MDGs. Despite these gains, Bangladesh remains a poor country, with a 2013 GDP per capita of some US$1,000, and is regularly hit by natural disasters that severely impact the economy, disproportionally affecting the infrastructure and agriculture sectors, as well as vulnerable groups. Further, nutrition outcomes have not kept pace with the progress achieved with most social and economic indicators.

3. Bangladesh is extremely vulnerable to the impact of climate change and ranked second in the 2016 Climate Change Vulnerability Index[23]. The country has already been facing several climate change effects such as increasing cyclones, flood frequency probabilities, erosion, inundation, rising water tables, salt water intrusion and biological effects. Coastal environments particularly at risk include mangroves, tidal deltas and low-lying coastal plains, sandy beaches, coastal wetlands, estuaries and coral reefs. These bio-geophysical possessions will have consequent effects on ecosystems and eventually affect socio-economic systems in the coastal zone.

B. Agricultural sector

4. Bangladesh remains a predominantly agricultural country. Although the contribution of agriculture to the country's economic output has declined over the last decade, the agriculture sector 2012-13 growth rate was 2.17 percent and it remains one of the main contributors to GDP growth, and importantly in poverty reduction. The majority of poor people lives in rural areas and depend on agriculture for their livelihood, with most being small-scale, marginal and landless farmers owning less than one acre of land, and commonly renting land under share cropping arrangements. Small and marginal farmers comprise approximately 86 percent of the farming community.

5. Agricultural production has increased substantially in Bangladesh over the past 20 years. Cropping is dominated by rice and annual rice production has grown from 10 million tons in 1972/73 to just under 33.9 million tons in 2009/10. Agricultural sector growth was 4.4 percent in 2009/10, an increase from 4.1 percent in the previous year. Expansion of farm output has come from a transformation of rice production from extensive low input subsistence systems to highly intensive high input systems using modern rice varieties, a large increase in fertiliser use, and a substantial

[21] Bureau of Statistics of the Government of the People's Republic of Bangladesh. 2012.
[22] Household Income and Expenditure Survey 2010, Bangladesh Bureau of Statistics.
3 'Recent Trends of Growth in Agriculture, Industry and Power', Bangladesh Economic Update, Volume 5, No. 3, Economic Policy Unit, UnnayanOnneshan, Dhaka, March 2014.
4 National Extension Policy, 2012.
5 As is evident in many studies, e.g., Ahmed et al., 2009.

increase in irrigation during the dry winter. The country is now more of less self-sufficient in rice in a normal year. There is however no room for complacency as Bangladesh has to import rice following bad floods or droughts at critical crop growth periods, and with continued population growth and loss of land to urbanisation (about 1 percent of land per year), there is an ever increasing need to produce more rice every year.

6. In the light of the 'Soaring Food Prices' seen globally in 2008, the Government became concerned that imports may no longer be available at affordable prices, and a new policy of self-sufficiency has been adopted. Although there is some scope to increase production, the yield gap between research and farmers' output for the major rice crops has narrowed. Moreover, apart from increasing population and pressure on land, within agriculture land is being diverted away from staple cereal crops to uses such as horticulture, fish ponds, and to grow maize to feed poultry. To increase production while keeping prices as low as possible, he government has also expanded a programme of subsidies for inputs (fertilizer, fuel and seeds). These subsidies account for over three-quarters of government expenditure for agriculture.

7. **The Impact of Climate Change**. Bangladesh ranked second in the 2016 Climate Change Vulnerability Index and it will likely suffer more from climate change by 2025 than any other country. Rainfall is expected to increase by 10-15 percent during monsoon seasons by 2030 and 27 percent by 2075; rising sea level is expected to inundate 120,000 square km by 2050; 14 percent more of the country may become extremely prone to floods by 2030; cyclones in the Bay of Bengal will occur more frequently due to increasing temperature, and the peak intensity of cyclones may increase by 5-10 percent (Food Planning and Monitoring Unit (FPMU), Ministry of Food). Coastal salinity problems will likely worsen as changing rain patterns reduce the amount of dry season water supply from upstream river sources. Overall, crop production might be reduced by 30 percent by the end of the century; rice production could fall by 8 percent, and wheat production by 32 percent by 2050 (FPMU 2013). Winter crop production would be seriously hampered due to a warmer and drier environment during non-monsoon seasons, while moisture stress might force farmers to reduce the area under irrigated rice cultivation.

8. The proposed project is located in the southern region where climate change hazard intensity is high in compare to other regions of Bangladesh. Inundated area of southern region would increase by 14 percent; water and saline intensity in soil and water will increase. In lagging district study it has been shown the rank of the bottom fifteen districts which are most exposed and vulnerable to environmental and water related risks and 7 of our project districts are there.

C. Policy context

9. The Government's second revised poverty reduction strategy (National Strategy for Accelerated Poverty Reduction: Step Towards Change) includes rural roads, agriculture, livestock, community-based fisheries and safe water and sanitation as focal areas for pro-poor growth. The strategy states the need to create employment opportunities for women in agriculture and livestock.

10. The broad directions for development over a longer time-span are set out in the Perspective Plan for Bangladesh 2010-2021. Amongst other things, this plan would like to see genuine devolution of power to the local government level, and also says that in the process of socio-economic development of the country, agriculture will still continue to play a vital role in the long run in terms of food security, generation of income and employment for the multitudes living in the countryside and for eradicating poverty.

11. Master plan for Agricultural Development in the southern regions of Bangladesh covers south central, south west and south east of the coastal zone covering 14 districts. It provides a detailed plan, estimates of investment need and a list of priority program. the master plan is a road map for an integrated agricultural development in the costal districts of Bangladesh aiming at sustainable food security, poverty reduction and livelihood development for the poor

12. SACP is fully aligned with the three strategic objectives of IFAD's results-based.

13. Country Strategic Opportunities Program: (i) the livelihoods of poor people in vulnerable areas are better adapted to climate change; (ii) small producers and entrepreneurs benefit from improved value chains; and (iii) marginalized groups, including poor rural women, are economically and socially empowered.

14. National policy framework. The central goal of Bangladesh's economic policy is to reduce poverty in order to lift the majority of people above the poverty line and improve their quality of life. The Government has attempted to take affirmative action to integrate gender equality and poverty concerns into the development process, as articulated in national policy documents including: (i) the National Agriculture Policy (2013); (ii) Draft National Agriculture Extension Policy (2015); (iii) National Fisheries Policy (1998) and Strategy (2006) (iv) National Livestock Policy (2013), and; (v) National Food Policy (2006) and Plan of Action (2008-2015) (vi) 7th Five year Plan(2016-2020) These policies and strategies promote inclusive participation in agriculture, including through supporting: (i) the special needs of women, small and marginal farmers in gaining management control through formation of community based organizations including women's farmer groups; (ii) equitable access to agricultural inputs, technologies and extension programs; (iii) demand-led, pro-poor, varied extension approaches, achieved through participatory methods; (iv) encouraging women's SME agri-business development; (v) creating gender awareness in both female and male farmers; (vi) encouraging decision-making positions for women farmers in higher level farmer organizations; (vii) promoting homestead gardening, and; (viii) increasing the number of women employed by support agencies and developing their linkages with women farmers

D. Donor programmes

15. The World Bank's Country Assistance Strategy for FY2014 to FY2020 has key priorities to promote agricultural productivity and diversification; to enhance long-term planning for better land and water use and natural resource management; and to revitalize and strengthen key infrastructure to protect the population, reduce vulnerability, and secure growth. Impact on twin goals: A holistic long-term approach to managing economic development of the delta will ensure that growth is sustainable, inclusive and reduces the vulnerability of the poor to natural disasters.

16. Sectors identified for support include infrastructure, dealing with climate change (including water management) and agricultural and food security. The bank is operating NATP II (co-financed by IFAD). NATP-II will support GoB's strategic priorities in agriculture, i.e., increasing production, achieving food security, supporting adaptation to climate change, and enhancing nutrition through safer and more diversified food. It will also contribute towards the World Bank's corporate strategic goals of eradicating extreme poverty while promoting shared prosperity.

17. ADB's Country Operations Business Plan for 2016-18 includes investments in agricultural, natural resources and rural development. ADB will support food security and rural livelihoods by helping to improve productivity, climate-resilient connectivity, and integrated water resources management. A PDA in 2016l supported preparation of the Crop Diversification and Value Chain Infrastructure Development Project. A PDA in 2015 supported the Rural Infrastructure Maintenance Program, with result-based lending, for 2016.

18. USAID's Bangladesh country development cooperation2011-2016 supports research, innovation, education and investment in diversification, intensification and productivity in the agricultural sector to promote food security and adequate nutrition. USAID increase access to food by reducing post-harvest losses, maximizing input and output market efficiency, improving purchasing power and creating alternative income sources from farm and non-farm sources in the targeted areas and populations. In connection with its Feed the Future and Global Health Initiatives, USAID implement a comprehensive strategy to improve nutritional status and dietary diversity in the FTF target area of south central/southwest Bangladesh.

19. The European Union's Bangladesh DEVELOPMENT COOPERATION INSTRUMENT MULTI-ANNUAL INDICATIVE PROGRAMME (MIP) (2014-2020) identifies food security as a focal

sector. The specific objective of the EU food security programmes is to eliminate food insecurity through holistic and integrated concepts and by strategically strengthening the capacities and responsibilities of decentralized government institutions for participatory planning and implementation of food security interventions. This is achieved through a focus on innovative approaches and interventions by primarily targeting extreme poor and food insecure women who have not benefited from mainstream poverty reduction programmes. EC interventions link food security with education, health, good governance and Disaster Risk Reduction.

Appendix 2: Poverty, targeting and gender

A. Poverty in Bangladesh

1. Bangladesh is a lower middle-income country with medium but declining rates of poverty among its 160 million people. Sustained economic growth along with steady agricultural improvement has been fundamental to this reduction. Sustainability of growth, particularly agricultural growth is, however particularly vulnerable to climate change. Given that the agriculture sector remains fundamentally important to the country's prosperity and it utilises three-quarters of the scarce land space of Bangladesh and supports the livelihoods of the majority of the population, it is passing through some immediate challenges in promoting sustainable development. The challenges include continuing to increase production and achieve recognizable quality standards despite loss of land to other uses and climate change. The proportion of the population living under $1.25 a day fell from 49 percent to -31.524.8 percent between 2000 and 2015[24], 2010 effectively lifting millions of people out of poverty during the period. Overall poverty has declined during the last decade. However, poverty in rural areas remains around 36[25]percent and has not declined as fast as in urban areas. Additionally, the proportion of people living in extreme poverty in rural areas is still three times higher than in urban areas.

2. Sustained economic growth was fundamental to this reduction: from 2000 to 2014, Bangladesh averaged GDP growth of 5.7 percent. But economic activity is overly concentrated, with 60 percent of GDP generated in only a few cities. Bangladesh made strong gains in education and healthcare during that decade, and it achieved most of its MDG targets. It is transforming from an agrarian-base to an industrialised economy, with a 'demographic dividend' of young adults entering the labour market (50 percent of the population is under the age of 25). In addition to demographics, increasing urbanisation, growing middle class affluence, and population growth all impact Bangladesh' economic prospects[26].

B.Extent of poverty in the southern region

3. As would be expected, not all regions of Bangladesh fared uniformly in poverty reduction. There is a variation in headcount rate by division. Where the average poverty rate of overall Bangladesh is 30.7 percent there are two divisions of southern region i.e. Barisal & Khulna poverty rate is higher than the country average. In Khulna Division maximum poverty rate is in Satkhira district i.e. 46.3 percent and in Barisal division maximum poverty rate is in Barisal district i.e.54.6 percent.

4. In Bangladesh 31.5 percent are below the upper poverty line based on the household income and expenditure survey (HIES) 2010 of BBS (Table:2:5). Barisal division has the highest number of poor people (39.4 percent). With respect to the lower poverty line indicating extreme or hardcore poverty Barisal division has also the highest concentration of poor people(26.7 percent) compare to Bangladesh(17.6 percent)(Planning Comission,2011).

Table 1: Percentage of population in poverty by project Division

Division	Extreme Poverty			Absolute Poverty		
	Total	Rural	Urban	Total	Rural	Urban
Barisal	26.7 percent	27.3 percent	24.2 percent	39.4	39.2	39.9
Chittagong	13.1	16.2	4.0	26.2	31.0	11.8

[24] Millennium Development Goals: Bangladesh Progress Report 2015
[25] http://www.ruralpovertyportal.org/web/rural-poverty-portal/country/home/tags/bangladesh
[26]World Bank (2016) Bangladesh: Country Snapshot, October 2016. Washington DC.

Khulna	15.4	15.2	16.4	32.1	31.0	35.8
Bangladesh	17.6	21.1	7.7	31.5	35.2	21.3

5. Relatively high extreme poverty appears to be spread in 4 distinct zones prone to adverse ecology, encompassing North-West and North-East, South-West and South-Central areas of Bangladesh (poverty Map-1). Coastal areas of greater Khulna and Barisal divisions in the South prone to tidal surges and storms (with relatively high incidence of income-poverty but low incidence of non-income poverty), and pockets of ecological vulnerability in the South-Central region encompassing Shariatpur, Chandpur, upper Barisal and Lakshmipur i.e. areas in the eco-zone of Meghna Basin (with considerable heterogeneity in both income and non-income poverties).

6. The 2012-2013 Multiple Indicator Cluster Survey (MICS) by the Bangladesh Bureau of Statistics and UNICEF ranked districts and upazilas in terms of access to education, health, water and sanitation. This again clearly showed the coastal belt to be the major poverty-stricken areas in the country.

7. **Food Security and Nutrition**: Despite significant economic progress and poverty reduction, a quarter of Bangladesh's population remains food insecure. Despite the gains in food production, particularly rice, inadequate access to food and food insecurity remain major problems for a large population segment, particularly during seasonal lean periods. Poor subsistence farming households in rural areas face two distinct lean or hungry seasons. The first is in March and April prior to the boro harvest, and the second occurs in October and November prior to the Aman harvest. Limited off-farm employment combined with lack of food availability, particularly during these lean seasons, obviously worsens household food insecurity. Loss of arable land, rising sea levels, frequent flooding and extreme weather patterns, due in part to climate change, compound the threats to food security.

8. Under nutrition is exacerbated by low dietary diversity, with 70 percent of the diet comprised of cereals and inadequate protein and micronutrient intake. The 2011 Bangladesh Demographic and Health Survey (BDHS) found that nearly 7 million Bangladeshi children under 5 years of age suffer from malnutrition, with 41 percent of children chronically malnourished (stunted), 36 percent of children underweight, and 16 percent acutely malnourished (wasted). Malnutrition is a leading cause of under-5 child mortality in Bangladesh, with nearly 50 percent of all under-5 child deaths attributable to malnutrition. In particular, severe acute malnutrition, which carries a 10-fold increased risk of death in children, affects 600,000 children under 5. Maternal malnutrition is also high at 24 percent, and more than one in three children are born with low birth weight, which further increases the risk of child under nutrition and child mortality (BDHS 2011; National Low Birth Weight Study of Bangladesh, 2003–2004). Bangladeshi children also suffer from high rates of micronutrient deficiencies, particularly vitamin A, iodine, and iron. Anemia affects 51 percent of preschool children and 42 percent of women of childbearing age. Micronutrient deficiencies are widespread, driving high rates of anemia in women and children. Chronic under nutrition is more prevalent in rural areas and urban slums, with the highest rates in two divisions, Barisal is one of them.

9. Lagging region study report has identified bottom 15 districts in terms of two important health indicators such as infant mortality rate and the under five mortality rate. SACP project districts-Feni ranked-5 and Satkhira ranked-6 in infant mortality rate; Satkhira and Pirojpur ranked 11 and 15 for under five mortality rate.

Table 2: Infant and under five mortality rate District

	Infant Mortality Rate (IMR) per 1000 Live Birth, 2010	Rank	District	Under-five mortality rate 2009 (per 1000 live birth)	Rank
Feni	47.14	5	Satkhira	76	11
Satkhira	47.01	6	Pirojpur	72	15

10. Based on field discussion and data from district DAE result of a participatory wealth ranking in Table-2 show the overall high level of poverty in the project area. However it may be noted that landless, marginal and small farmer altogether highest percentage is in Banskhali (87 percent) and lowest percentage is in Rangabali (57 percent);Middle class farm household maximum is in Monpura(54 percent) and minimum is in Kabirhat (4 percent) The small proportion of households in the upper wealth categories(1-11 percent) are an indicator of the poor quality of life in the targeted sub districts - any household that could afford it, will relocate elsewhere, at least to the upazila town, and give their land for share-cropping.

Table 3: distribution of farm households in different well-being

Name of upazilla	All poor (percent)		Middle class (percent)		Rich (percent)	
	Highest (percent)	Lowest (percent)	Highest	Lowest	Highest	Lowest
Banskhali	87.28					
Rangabali		57				
Monpura			54.16			
Kabirhat				4		
Rangabali					11	
Maheshkhali						1

Source: District DAE office

C. Targeting

11. **Geographic Targeting**: The Small holder Agricultural competitiveness project(SACP) will be implemented in 11 Districts in the southern region of namely -satkhira, Bagerhat, Pirojpur, Jhalokathi, Borguna, Bhola, patuakhali,Lakshmipur, Noakhali, Chittagong and Feni. The project will work in 30 Upazilas and 250 unions in these districts with about 250,000 households.

12. **Selection of project unions**. Within these 11 districts, implementation will be extended to 250unions. The selection of project unions will be undertaken prior to or after the project start-up, applying the selection criteria as stipulated in the concept note, taking into consideration the existing farmer groupsand their dynamics and potentials in production and marketing in the candidate unions. This list will also be reviewed in accordance with available investment budget and managerial and operational cost efficiency.

13. **Target group and targeting strategy**: The total population of the target 30 upazilasin 11 project districts is 7,018,218, representing 1,246,021 households. The project will directly benefit at

least 250,000 rural households27. The selection of project unions will be undertaken based on an inclusive targeting strategy focusing on landless, marginal and small farmers, with up to 80 percent of beneficiaries coming from these categories. Youth (15-24 years old)28 will constitute up to 20 percent of beneficiaries and women participation will target at least30 percent involvement.

14. The project will take farmer groups as its entry point for support to enhance production and value chain developmentin the project areas. The project will focus on strengthening agriculture competitiveness, strengthening sustainable technical support services/facilities, identification of market opportunities and linking these to an applied research, development and extension programme to support small farmers, improving access to income opportunities of high value crops, developing market linkages, and supporting individual and group organizational capacity.

15. The project will strengthen the farmer groups to enhance production linked to improved integration into fresh and processed marketing channels and value added post-harvest management, build competitiveness in HVCs through multi-stakeholders platforms to build their capacity to participate in agricultural value chains.

16. Synergy will be searched with ongoing IFAD-assisted projects and other development projects in the country. Will be leveraged during SACP implementation the good practices and innovative features of linking value chain development to rural financial services under PACE, strengthening farmer production and marketing groups and working with private sector players under HILIP-CALIP and PACE among others.

17. **Indigenous people**: The indigenous people of the country are also disadvantaged and marginalized in terms of discrimination in social, cultural and economic sphere who are subject to extortion of land grabbers. Bangladesh has about forty-five different indigenous communities, most of them living in the Chittagong Hill Tracts, greater Mymensingh, greater Rajshahi, greater Sylhet, Patuakhali and Barguna.

18. There are approximately 20 religion-ethnic minority communities in Southwest Bangladesh. Typically, they are extremely poor. In many cases, minority ethnic peoples maintain the same occupations they have had for generations. A study by Uttaran (Rahman, 2011) covering 10,483 households across Satkhira and Khulna Districts showed that, among the extreme poor, 74 per cent were Muslim, 25 per cent are Hindus, and 1 per cent are Christian, Buddhist or adhere to another religion. Overall, 9 per cent of the extreme poor population are classified as religio-ethnic minorities. In other words, their representation among the extreme poor significantly outstrips their percentage of the total population.

D. Gender analysis

19. **Decision making**. Women have little participation in decision-making processes as their economic contribution is rarely recognized by the family and thus society. Women are responsible to carry out the household activities including cooking, firewood collection, and water, take care of the elderly and children. Still male child get preference than a female child as female is considered a burden for the family because of dowry system. Dowry is practiced in all the places; however, it has been observed in FGDs that everybody is aware about the negative aspects of early marriage and known about the actual age of marriage for men and women.

20. The upbringing of children is an area where women typically have a strong say, which is not surprising given women's approved roles as mothers. In a World Bank study (2008), a larger

[27]The government classifies farm sizes as follows: (i) landless – owning 0-0.05 acres, (ii) small farmer, owning 0.05-2.49 acres, (iii) medium farmers, owning 2.5-7.49 acres, and (v) large farmers, owning >7.50 acres (Secretary-General's Report to the General Assembly, A/36/215, 198)

percentage of both older and younger women reported being consulted in decisions about children's schooling, medical care, and discipline than in decisions over their own work for income, major household expenditures, and their own mobility.

21. There are more women (50.4 percent) than men (49.6 percent) in the southern region and in national level women 49.94 percent and men 50.60 percent (BBS 2010). Households are overwhelmingly male headed with only 5.0 percent being headed by women in the southern region and 4.6percentin the country (BBS,2010).

22. Indigenous poor women are the most vulnerable as indigenous, as women and as poor. The indigenous women are very hard working in agriculture and non-agriculture sector in addition to their daily household responsibilities. However, their economic contribution to household level also is not recognized by the family. Women of the most indigenous communities are discriminated regarding patriarchal and matrilineal system. Therefore, their decision-making power at household level and community level is low.

23. Approximately 12 percent of extremely poor people in Southern Bangladesh experience some form of disability, either from birth or acquired through an accident/ increasing ill health. Of these about one third suffer a physical disability; 13 percent reported a visual impairment; 9 percent experienced hearing and speech difficulties and 9 percent had learning difficulties. About 33 percent of disabled people in the study had multiple impairments. The high frequency of disability amongst the extreme poor draws attention to the fact that efforts to reduce extreme poverty must include measures to protect and support disabled people (Nokrek et al. 2013). Among them poor women are the most vulnerable as disable, as women and as poor.

24. **Labour division**. Women play a large, vital and growing role in agriculture, nutrition, food security and a wide range of income-generating activities. Production activities largely undertaken by women include post-harvest activities, processing and preservation of crops. Women are also involved in seed preservation, cow fattening and milking, and fish net making. Relative to men, women are (i) involved in homestead agricultural activities, including operating homestead ponds and plant nurseries; (ii) in charge of small-scale fruits and vegetables, poultry and goat rearing; (iii) engaged in production of perishable, but often nutrient-dense foods; and (iv) involved in production for home consumption rather than for the market. Men are more engaged in field-based agriculture and larger-scale, higher value business activities further from the home

25. Traditionally, women have been less involved in rice production than men, particularly in the field-based stages. However, their roles and responsibilities have started to increase largely due to male out-migration within Bangladesh, or abroad. They are becoming involved in all aspects of production, whilst at the same time finding it difficult to recruit sufficient hired labor in the peak transplanting and harvesting season (Gurung et al. 2014). A rapid gender assessment in agriculture (Naved et al. 2011), which included several locations in southwestern Bangladesh, did not reveal much change in roles and responsibilities.

26. The following Table 4 summarizes the key findings.

Agricultural activities	• Women are economically involved in activities performed in and around the home. These include the pre-production and post-harvest stages of major field crops. They are also the major producers of small-scale, homegrown vegetables, poultry and livestock. Women-produced items are typically directed towards home consumption. • Men produced field crops are destined for the market.
Marketing	• Women may sell goods they have produced themselves at the farm gate if the amount involved is tiny. However, men are involved if quantities are larger, and usually keep the proceeds. • Men are almost entirely responsible for marketing.

Associations between poverty, wealth, and agricultural activity	• Women from the largest households are the least involved in agricultural activities. Women from small farm and landless households undertake value chain activities, whether home based or not. Nevertheless, they rarely engage in marketing.
Credit	• Small holder and landless women have access to micro-credit whereas men have access to institutional sources of credit
Associations between technology and economic activity	• Women tend to work on low-technology activities whereas men undertake high technology activities. These technologies are typically designed for use in the fields, where women are rarely active. Even if the technology is used in the household compound it is usually used by men, due to strongly held beliefs that women cannot operate machinery. This argument is prevalent even though female wage laborers frequently use such machines. Men tend to own all machinery.
Associations between information and economic activity	• Men have access to more sources of information, and they are better reached by the extension services.
Agricultural Decision making	• Regardless of social status, men dominate all decisions about the use of land, and crop selection. Even if women are consulted men take the final decision. Men typically decide how to use micro-credit, even if procured by women. • Women may take decisions on small scale poultry and livestock. In a few cases, women who own larger poultry units may be key decision-makers. This said, male support is critical to their enterprise. • In small farms and landless households men tend to decide whether women can take up work as daily laborers, and define the terms of their engagement.

27. **Access to credit**. Most farmers have hardly any investable surplus. They usually borrow money to meet their deficit. In the southern region 26 percent household resort to borrowing (BBS-2010). Among project districts Household borrowing is quite high in Borguna (45 percent), followed by Bagerhat and Satkhira(40 percent) each and Patuakhali(39 percent). About one half of the households borrow for agriculture purpose.

28. Specialised Bank like Krishi Bank are a major source of agricultural credit. According to data 613 Micro finance Institutions including Grameen Bank,125 (20 percent) are local regional NGOs based in the southern region. As total demand for credit far outweighs its supply. It is roughly estimated that 80 percent of the volume of credit comes from non institutional sources where private money Landers dominate. They charge interest on loan at high rates generally 10 percent per month. Women are the major borrowers of NGO micro-credit. In Fakirhat and Kachua reported that few farmers' co-operatives are lending money among the members.

29. **Access to technology**. There are categories of discussion topics for farmers group such as-paddy/field crop, homestead gardening and nutrition awareness, rearing of big animal such as-cow and small animal such as-poultry & goat, social and group management issues, etc. Generally, women members are targeted for homestead gardening, nutrition education, and small animal rearing. In the visited IPM and IFMC farmers group the poorest categories - landless, small and marginal farmers particularly women access to extension services ensured. Interventions including technology development to support homestead gardening and reduce women's workloads will be important. There is also the risk that post-harvest technological development may reduce the involvement of women, with men replacing this work. While this may reduce women' time constraints, it may also contribute to their devaluation and lack of access to improved technologies.

E. Mainstreaming Gender in the Project

30. Existing Major constraints for women in Agriculture：

- Gender inequitable property rights and lack of access and control over major agricultural assets.
- Restricted mobility and *Purdah*
- Lack of decision making power
- Lack of information and training
- Lack of technology marketed and promoted exclusively for female farmers

31. Opportunities in SACP：

- Women from small farm households and landless families are getting increasingly involved in agriculture
- Group-based initiatives hold promise for overcoming scale issue in agricultural production by women
- Providing women access to and control over *khas* land(dike/embankment) and agricultural marketing system
- Women appropriate smart technology for activities they get involved with may increase women's efficiency and involvement in agriculture
- ICT and particularly widespread cell phone availability create opportunities for easy access to information and market despite limited mobility
- Extension Service responsive to female farmers' needs along with more training & exchange visit may help women overcome the knowledge gap
- Campaign using role models might help overcoming some cultural barriers

32. **Gender Focus**.To achieve the above, it will be necessary for the project to undertake substantial advocacy and capacity building activities. There will be a Gender and Safeguard Advisor in the PMU and training in gender analysis will be carried out for project staff with a one day workshop to be held in the year 1. The workshop will be facilitated by the Gender Advisor with the support from IFAD. Following this, the project will organize advocacy workshops to sensitize local government officials, elected representatives and private sectors to support for women as producer, agro entrepreneur, value chain actor and as part of market operating group.

33. With such a large and varied involvement of women in producer, agro processing and value chain and water interest group and enterprise activities there will inevitably be some lessons that will enable better handling of gender issues. These lessons should be captured by Supervision Missions, the MTR, and special studies in order to be used for improving the design of specific gender initiatives. The PMU, and specifically the Gender Advisor, will be expected to prepare gender data sheet for assessing monthly gender progress. An annual gender report will be generated which will cover both qualitative and quantitative gender progress.

F. National policies and gender

34. Bangladesh seventh Five Year Plan (SFYP) has given priorities to the geographically disadvantaged areas/lagging regions with special consideration on Rangpur, Barisal, Khulna and Rajshahi division. It has also acknowledged the social barriers for women who are mostly the excluded, disempowered and vulnerable members of the society who cannot participate more effectively in economic activities outside home and limited access to essential public services. Female headed households (4.6 percent) are more susceptible to fall in extreme poverty when they lose the male earning member of the family due to abandonment, divorce or death. Consistence with NSAPR-II (Moving Ahead: National Strategy for Accelerated Poverty Reduction-II), the SFYP focuses on

establishing the overall rights of women to achieve gender equality and empower women to include in the mainstream of development activities.

35. The gender vision of the 7th Five Year Plan is that of establishing "a country where men and women will have equal opportunities and rights and women will be recognized as equal contributors in economic, social and political development". Under the objective of Improve women's human capabilities one of the sub action area is women Opportunities to participate in trade fairs and higher levels of the value chains would be created. Scope for women at different levels of the value chain of different products would be identified, disseminated and supported with technology and inputs.

36. In SFYP it has been stated that women's more employment opportunities and wages outside the household with equal pay for equal work through ensuring a safe workplace, transportation facilities and separate toilet facilities will be ensured. Rural women will be encouraged and supported to participate more in rural non-farm activities in order to reduce rural poverty. Moreover, the SFYP has emphasized on the priority of disadvantaged women in social protection programs to protect from economic vulnerability and risk due to natural disasters by assessing their coping strategies and providing small and micro-credit supports to them. Women's employment opportunities will be created in the agriculture sector along with all kinds of extension services and increased participation of women in non-crop agricultural sector will be ensured. In addition, women's participation in the marketplace and access to local water resources for fish production will be ensured.

37. In 1997 the government formulated a National Action Plan (NAP) for implementation of the Beijing Platform for Action which focused on gender mainstreaming in government departments. The goals of the NAP are given below:

- To make women's development an integral part of the national development program;
- To establish women as equal partners in development with equal roles in policy and decision making in the family, community, and the nation at large;
- To remove legal, economic, political, or cultural barriers that prevent the exercise of equal rights by undertaking policy reforms and strong affirmative actions; and
- To raise/create public awareness about women's different needs, interests, and priorities and increase commitment to bring about improvements in women's position and condition.

4. The government has formulated a National Policy for Women's Advancement, 2004 that aims at eliminating all forms of discrimination against women by empowering them through providing better options to ensure their participation in private and public life.

G. Conclusion

38. Therefore, the approach of targeting poor farm households particularly women to enhance competitiveness in terms of HVC production, processing and marketing will develop access to income by providing them training, input and development of market linkage.

39. In addition, the SACP project is fully in line with the national poverty reduction strategy and 7th Five Year Plan as well as IFAD's COSOP, Bangladesh, Strategic framework and targeting strategy regarding gender mainstreaming in project planning and implementation activities.

Appendix 3: Country performance and lessons learned

1. **IFAD in Bangladesh**. IFAD has 40 years' experience working in Bangladesh and supported 29 projects in a flagship partnership. IFAD currently funds six projects 29 focused on rural infrastructure, livelihoods development and microfinance, with a total budget of USD 1.93 billion that includes IFAD financing of USD 717 million. IFAD's current Country Strategic Opportunities Program (COSOP, 2012-2018) is consistent with the government's poverty alleviation and food sovereignty strategies stated in the Seventh Five Year Plan and the National Agriculture Policy. The objectives, targeting, and investment strategies articulated in COSOP were discussed, elaborated and agreed with the Government of Bangladesh. IFAD's strategic position in Bangladesh focuses on targeting the poorest in rural areas, including marginal smallholder farmers and women; supporting marketing and commercialization for smallholder farmers and small entrepreneurs; agriculture transformation; and mitigating the adverse impact of climate change. The programme has traditionally focused mainly on rural infrastructure and strengthening access to microfinance in rural areas, but has recently added technology advancement and diversification of farming systems to its project portfolio.

2. **Performance**. The country portfolio demonstrated a satisfactory performance as a whole and the COSOP 2012 – 2018 relevance and effectiveness were confirmed by the COSOP MTR in November 2015.

3. At its mid-term, the COSOP was on track to meet its stated objectives and targets. Reaching more than 4,162,609 individuals (direct and indirect beneficiaries). At the impact level, 413,831 households have reported improved income/ assets and 212,142 households reported improved food security, exceeding the COSOP targets.

4. The mid-term review of COSOP concluded that implementation of the program was on track in contributing towards achievement of the stated strategic objectives for COSOP 2012 (adaptation to climate change, improved value chains and greater market access, and social and economic empowerment of marginalized groups, including poor rural women). Substantial progress was achieved in supporting improvement of agricultural productivity through technological innovations, and development of micro-enterprises. The review recommended that future investments should consider a more clear-cut focus on agriculture and related issues. IFAD should focus on important aspects of agriculture, e.g. strengthening investment in extension and research, supply chain development, intensification, diversification, livestock, and particularly inland fisheries, which is a major and growing export commodity. The review considered that such a project would support the government's objective of achieving a far-reaching reduction in rural poverty,

5. IFAD country programme in support of Government development priorities, is considered responsive to the changing context and needs of the target population. The portfolio has experienced a shift towards emphasis on climate change awareness and promotion and linkages between infrastructure and livelihoods resilience to climate change has been strengthened; as well, the portfolio is demonstrating a subtle but important shift in promoting commercialization and economic activities (self-employment, micro-entrepreneurial) for income-generation, as an underlying development principle.

6. **Lessons learnt**. IFAD country comparative advantages and lessons learned are summarized in its COSOP 2012 – 2018 as below:

7. *IFAD has developed competencies in climate-smart rural infrastructure, agricultural technology, natural resources management, market access and microfinance. The highest impact, however, has been observed when several of these factors were combined with a value chain approach. Scaling up of successful experiences in partnerships with Government and other donors*

[29] IFAD is also co-financing the National Agriculture Technology Program II (2016-2020) with World Bank and USAID, for a total project budget of USD 220 million.

will be a vital element of this COSOP. Supporting agricultural research and strengthening its links to projects will help develop innovation and technology transfer to smallholders. Knowledge management will play a key role in generating innovations. Policy advice will draw on project outcomes related to key topics such as access to natural resources.

8. The COSOP MTR report (Nov. 2015) also pointed out the opportunities deriving from lessons learned as outlined as:

i. Enhancing synergies within projects across components and across projects,

ii. Linkage between rural finance intervention and livelihood interventions,

iii. Promoting climate smart infrastructure and livelihoods resilience,

iv. Strengthening effective leadership and partnerships in project management,

v. Early implementation readiness; with prepared implementation modalities, cognizant of in-country systems and procedures, and necessary partnerships, and

vi. Addressing issues of nutrition through nutrition sensitive agriculture, and (vii) Differentiated targeting of the youth.

Lessons learned and good practices from IFAD ongoing-PACE project

- **Replication and scaling up**. PACE builds on PKSF's successful implementation experience of three previous IFAD funded projects, namely Microfinance and Technical Support (MFTS) Project, Microfinance for Marginal and Small Farmers (MFMSF) Project and Finance for Enterprise Development and Employment Creation (FEDEC) Project.
- **Synergies gain from the integration of value chain approach along with microcredit programme.** The PACE project supports enterprise development through providing technical, technological and marketing support in different economic subsectors (both farm and off-farm) that have growth potentials to 300,000 microentreprenurs. At the same time, the project facilitates access to financial services (loan) for running various enterprises including trade, farming, processing and service sectors.
- **Working with MFIs/Partner Organisations through an Apex body:** PSKF provides a strategic project entry point, to work with an Apex body that has more than 200 Partner Organisations (POs). In this structure, PACE and earlier projects with PKSF are able to maintain consistency at PKSF level and guidelines, yet POs are able to adjust given context at local level.
- **Strong partnership with national-wide Partner Organizations.** Presence of POs in the field helps reaching out beneficiaries, supporting VCD sub-projects and expanding microfinance coverage. Plus, many POs provide Business Development Support (BDS) services and/or other service provision (access to inputs, veterinary services, etc.), that – in combination with the Microcredit – boost VC actors capacity to produce more and in higher and more consistent quality, hence meeting requirements of target markets.
- **Capacity building on enterprise management and promotion of private business.** The project follows a rigorous due diligence and assessment process before awarding a VCD project and sub-projects. Business cluster mapping is used as a monitoring tool for the strategic management decision including sub-sector analysis and intervention plan. Consequently, the approved value chain proposals reflect the basic principles of a value chain development approach where different market actors are identified, market constraints are captured and possible interventions/activities to address those constraints are suggested.
- **Preliminary value chain assessment is required**. Based on PACE's experience, it is learned that the proposal development stage captures only a synopsis and not the detail understanding of the market system, the VCD project should begin with a thorough assessment of the respective value chain. Future investments should focus on improved market opportunities, market-driven interventions and activities that lead to enhanced quality production and better price premium.
- **Women and youth engagement in VCD.** More than half of the VCD beneficiaries are women. They are economically empowered as a result of self-employment, access to credit and control over productive and household assets. Thus the project has changed the local traditional mindset towards a more modern social status of women. Furthermore, specific preference of ME capacity building program is

given to young entrepreneurs as they have potential and are much more active than other age groups.

- **Promotion of technologies and innovation**. A range of proven technologies and innovation is being implemented by PACE such as crab hatchery, perch/macha housing for goat rearing and floriculture which increase the productivity and income of the microenterprises. Furthermore, PACE is creating more innovative financial products and services based on demands such as lease finance and start-up capital loan, livestock insurance combined with animal health services.

Appendix 4: Detailed SACP description

1. The project will support production enhancement, identify market opportunities for both fresh and processed products, value added post-harvest management, build competitiveness in HVCs to move households from subsistence farming into commercial farming through four components. As stated in the concept note: Component 1 will focus on identification of market opportunities through price analysis, interaction with market intermediaries, gap analysis, supported by developing production and farmers training and technology adoption through adaptive research; Component 2 on linkage to markets through private sector and implementation of appropriate post-harvest handling and/or processing; Component 3 dedicated to infrastructure and reinforcing water management efficiency and Component 4 for project management. The project builds on the assumption that with the opening of the Padma bridge in 2018, many farmers of the southern districts will have increased opportunities to sell their products to Dhaka markets (high value crops, vegetables, legumes and fruits), the shortened transit times will expand the opportunities for high value fresh produce that is properly picked, packed and transported and where the project can play a significant role in improving current practices. The focus will be to enhance production quantity and quality through appropriate productive infrastructures, quality agriculture inputs and training of farmers and value chain actors, as well as, linking farmers and their groups to private dealers and traders to enhance fair contract farming30 and postharvest and processing contracts.

2. Components Synergy: At the very onset, the project will conduct a market-led research on assessment and prioritization of HVC value chains which will be the gateway for making synergies among the components associated with research, extension, marketing and major inputs (seed and irrigation). At inception stage, findings of this research will showcase which value chains to be prioritized, market and action research to be conducted, technologies and inputs to be promoted, products to be marketed by considering competitiveness on the top. Following this onset research, public, private, producers partnership (4Ps) consultation will be conducted in each project Upazila for further validation of prioritized HVCs, constraints associated with varieties, production, irrigation, market, etc. which finally attributed to make harmony among agencies involved with research (BARI), extension (DAE), inputs (BADC) and marketing (DAM) as well as private sectors. Moreover, Producers Groups (PGs) will be strengthened (old) or mobilized (new) and 4-5 lead farmers from each PG will be graduated to Market-led Farmers Field School (MFFS). The curriculum of MFFS will embrace HVC production including soil fertility management, good agriculture practice (GAP), nutrition and food safety, water management, post –harvest management, value addition, market linkage, group dynamics, gender issues, etc. The MFFS will play as a catalyst for making synergies among agencies, private sectors and components activities.

3. Smallholders are living in a fast-changing environment of agricultural transformation, facing challenge of moving out of subsistence farming to be part of the commercial farming. At very operational level, this project will provide immediate reaction to the challenge, by responding to:

(1) What to produce to be marketable, instead of trying to sell what is produced,
(2) How to produce what is marketable, and
(3) How to market and manage for increased price premium share for the smallholders

A. Component 1:Enhanced production of HVC and technology adoption

4. The livelihoods of the people living in the proposed project areas are vulnerable to climate change, irrespective of their occupation and the size of their business. The community has been

[30]Using enhanced local practices and following the contract farming legal guide issued in 2015 : http://www.unidroit.org/work-in-progress-studies/studies/contract-farming

struggling with the climate related diversified hazards like storms, tidal surge, submergence, soil erosion, unusual siltation, water stagnancy, increase of salinity both in soil and water. These problems cause losses of crops, houses, livestock and ultimately human lives. Annual maximum and minimum average temperature of coastal districts of Bangladesh are 35-37 °C and 10-13 °C respectively. Most of the rainfall occurs in the Aman season from May-September, with soil salinity increasing in the November-February dry season. According to SRDI, salinity of river water is 0.16 to 36 decisimen/meter, salinity of soil is 2-9 decisimen/meter during the months of December-May and less than 2 decisimen/meter during the months of June-December. There has been developed and adoption of stress tolerant rice varieties and other crops (including HVC such as fruits, vegetables, spices and even HYV rice) leading to higher production and productivity in the coastal areas.

5. **Major Cropping Patterns**. The agricultural activities of the area are dominated by transplanted rice (t aman) cultivation in the rainy season in March to April. A large area of available land is not suitable to agriculture production during the dry season (Oct-May) due high levels of soil salinity. Local varieties of low yielding submergence tolerant t aman rice are the most popular. As a result, production and productivity are very low. There is potential to increase crop production by strengthening research, develop and adopt stress tolerant (saline, submergence, drought, short duration crop to escape stress etc.) crop varieties, along with the extension of improved agricultural knowledge and practices. A large number of poor households maintain their livelihoods by capturing fish from rivers and Bay of Bengal.

6. The major cropping patterns of coastal area are as follows:

- Rice (Boro) – Fallow – transplanted rice (t aman);
- Fallow – Fallow - t aman;
- Fallow - t aush - t aman;
- Boro – Fallow - Fallow;
- Fallow-Mixed Rice (Boroaush, Broadcast aush + Broadcast aman);
- Relay crops felon/mung bean – relay cropped with grassea/mungbean/chili/wheat or sweetpotato/potato/lentil/black gram/maize-aush rice/jute/sesame/t aman
- Potato/sweet potato/chili/spinach/amaranth/sweet gourd/ladiesfinger/brinjal or cabbage/cauliflower/water melon – fallow - t aman

7. Through advances in breeding and technology development there have been changes seen in the cropping patterns and some very promising new crop options and rotations are practised:

- Groundnut-Aush-t aman
- Mungbean-Aush-t aman
- Soybean-Aush-t aman
- Pulses-fallow-t aman
- Oil seeds-fallow- t aman
- Winter vegetables-Summer vegetables-t aman
- Winter vegetables-summer Vegetables-fallow.

8. In addition to the above, the following developed and tested options exist for these production systems:

- Adoption of saline tolerant high yielding varieties (HYV);
- Rain water harvesting, linked with production of lower water demanding crops in the winter/dry season crops;
- Cultivation of HVC around homesteads;
- Adoption of short durational crops in Rabi and Kharif-1 season (e.g. water melon, potato, sweet gourd, tomato, chili, onion, pulses, oilseed etc);
- Adding compost and introducing mulching practices could be useful for optimizing irrigation and improve yield;

- Increasing productivity through application of recommended types and rates of inorganic fertilizers and organic manures/composts;
- Introduction of improved irrigation management;
- Plantation of suitable fruit plants like coconut, dwarf coconut, sapota, malta, guava, jujube, cawfol, dewya could improve nutrition and increase income;
- Farmers' capacity building on cultivation, post-harvest management and value addition of high value crops are necessary.
- Use of suitable integrated pest management (IPM) approaches to reduce pesticide usage (e.g. sex pheromone trap in HVC crop production);

9. Specific options exist that are climate-smart and reduce production vulnerability:

- Adoption of integrating farming in the homestead;
- Fruits and vegetables cultivation through sorjan method;
- Vegetables and spices cultivation following bag method;
- Vegetables and spices cultivation on floating beds in the flood plain area;
- Construction of small ponds for harvesting rain water;
- Cultivation of grass pea as relay crop with t aman;
- Zero tillage crop cultivation as conservation practice;

Component Description:

Component 1

10. **Justification**: This component will support the testing, evaluation and adoption of new technologies and management practices by smallholder farmers to enhance their production of HVCs that have identified market opportunities. This component will contribute to developing agricultural competitiveness linked to market demands by: (i) assessing the market demand for HVC that can be produced in the south, (ii) identifying research demands for evaluation of new cropping systems, new crops and/or new varieties and improved post-harvest management storage options, (ii) strengthened research-extension and private sector service provision, and (iii) organizing producers and marketing groups to form greater scale and bargaining power.

11. **Implementation strategy**: The component will embrace market-led research, with sub-Component 1.1 being implemented by trained and capacitated DAM and DAE staff at Upazila and Union levels and sub-Component 1.2 being led by BARI and BADC. Involvement of the private sector will be cross cutting and they will be involved in identification of market opportunities, support to identification of the quality and quantities required by different markets and through input provision, postharvest management and marketing linkages, as well as processing.

12. **Synergy**: The first activities in sub-Component 1.1 will determine the types of activities and scale of interventions for all other sub-components, as the identified HVCs and their associated VCs, will lead to the identification of research, extension, postharvest, processing and water infrastructure needs, to build profitable and sustainable farm-level investments. As this is a new way of operating for the implementing GoB departments, they will benefit from significant guidance and support under the TA component to support these activities and their integration.

13. The objective of Component 1 will be the identification and prioritisation of appropriate VCs for smallholder investment and associated key research gaps that need to be filled through on-farm research. The purpose of the component is to develop the capacities for linking farmers to markets.

Sub-component 1.1: Assessment of HVCs and group mobilization

14. The starting point for project intervention is the identification, assessment and prioritisation of HVC value chains. At start-up a detailed value chain analysis of horticultural and other high value crops will be conducted for final selection of potential HVCs suitable for production in the southern delta of Bangladesh. A community process will identify existing groups and target farmers who are

interested to invest in these HVCs. If new groups are needed, smallholders will be formed into collaborative Farmer Producer and Marketing (FPM) groups, each with approximately 25 households. The composition of the FPM groups will take into consideration the planned focus on women and youth and most marginalized groups, reflecting inclusive targeting strategies. In Year FPMs that have developed capacities and market linkages with buyers will be federated to achieve economies of scale and integrated into multi-stakeholder platforms. ,

15. To reach the project target groups, the following activities will be implemented: (i) identification of existing groups at the village and union level, (ii) a broad value chain mapping assessment, (iii) village-level assessment and prioritisation of potential value chains, (iv) engagement of SAAOs as production facilitators, (v) Training of Trainers (ToT) for Agrcultural Extension Officers of DAE along with Sub-Assistant Agriculture Officers (SAAOs) on Participatory Rural Appraisal (PRA) and group mobilization; (vi) PRA for group formation and mobilization and (vii) identification and prioritization of technology and research needs for selected crops.

16. *A broad value chain mapping assessment* - Identification of value chain/manageable sub-sector inventory considering the market potential impact area of the project and its life time with the greatest potential for growth in small enterprise income and employment will be assessed during the inception of the project.

17. *Village-level assessment and prioritisation of potential value chains* – After broad base selection of HVCs, village level prioritization exercise will select HVC smallholders groups. This will allow each group to produce potential HVC and create an economy of scale of both inputs needs and outputs produced by the members of groups which should attract private sector to sell or buy in bulk.

18. *Identification of existing groups at the village and union level*. DAE has already mobilized farmers groups under different projects, so the first activity is to conduct a mapping of existing groups, determine which groups can be worked with under SACP and what level of capacity building and support they would need. Where needed SACP will form new groups. All groups will be mobilized by the field extension workers using different participatory tools like wealth ranking, social and resource mapping, membership profiling, etc. The groups should be inclusive, considering age and gender. For both already created and newly formed groups, it will be essential to involve young farmers from the early mobilization phase. They will serve as catalysts to further disseminate new technologies and their level of ownership of the potential results will need to be thought through the groups' formation process.

19. *Training of Trainers (ToT) for SAAOs on PRA and group mobilization* – during mobilization of farmers into groups, the extension workers role would be facilitation, not as 'doers'. Keeping these principles. The SAAOs will work as Production Facilitators and will be trained on standard tools and techniques of PRA to strengthen existing groups and to mobilize new ones. The training will also touch upon the challenges of climate change effects and technologies to make communities (and farmers) more resilient to natural disasters and other forms of threats to agriculture livelihoods.

20. *PRA for groups formation and mobilization* - this activity will be conducted only for the mobilization of new groups where there are no groups previously mobilized by DAE or by other extension agencies. As mentioned above, the early involvement of youth will be essential to create a future driving force for new adaptive technologies.

21. *Identification and prioritization of technology and research needs for selected crops* - Upazila level consultation on identification, prioritization and selection of proven technologies will be conducted through workshops with the participation of private sector, extension & research agencies and smallholder farmers. A list of such scalable technologies for southern delta proposed by the BARI is given below.

Areas	Technologies

Productivity enhancing technologies	Yield gap reducing technologies for oil crops; Alternate Furrow irrigation; Drip Irrigation; Improvement of location specific Cropping Pattern Varietal Evaluation of selected HVCs Summer tomato production; Enhanced orchard establishment and fruit tree management; Compost production and improved soil management; Integrated Pest Management (IPM) in vegetables; Establishment of homestead vegetable gardens; Promotion of newly released promising varieties (e.g. pulse, oilseeds, vegetables, fruits, spices, tuber, crops, maize etc).
Post-harvest loss reducing technologies	Enhanced post-harvest handling, packaging and storage of oilseed, pulses, vegetables and fruits); Cleaning, sorting, grading and packaging of vegetables.
Agro-food processing	Private sector-led processing of smallholder produced mung bean, oil crops, fruits and tomatoes;
Others (e.g., adaptation to climate change)	Off-season vegetable and fruit production; Climate-smart agriculture, soil conservation through zero/reduced tillage; Promotion of *dhap* (floating vegetable culture, sorjhan etc) in low lying areas.

Sub-component 1.2: Demand-driven production and market-led research

22. Identification of action research needs will be based on the analysis and prioritisation of the VC studies, and the FPM group needs for information new and demanded technologies and on-farm mechanization etc. Some key constraints already identified are availability of breeder and foundation seeds of pulses, oilseeds and other HVCs, access to inputs, affordable mechanisation, appropriate packing materials, suitable processing or semi-processing techniques and equipment. Potential activities under this sub-component are: (i) Action research on climate smart/resilient technologies (e.g. floating agriculture and Sorjon (raised bed) crop cultivation); (ii) evaluation of stress (e.g. saline, submergence and drought) tolerant varieties; (iii) evaluation of appropriate mechanization options; (iv) Research on on-farm post-harvest storage and agro-processing; (vii) Multiplication of seeds/planting material of HVCs.

23. *Action research on climate smart technologies* – Action research on prioritized technologies identified by the extension, research, private sector and smallholders will be conducted by BARI at its regional station and farmers. Standard protocol of action research will be designed by the HVC specialist of both BARI and additional consultants. Once finalized, the manual for each technology will be developed by BARI and handed over to the DAE for wider dissemination to the farmers. The market research specific to the project areas will be strengthened in BARI and local relevant universities. Services of the consultants (including TA) will be utilized in development of research programs.

24. *Evaluation of stress (e.g. saline, submergence and drought) tolerant varieties* – suitable HVC varieties already released by the BARI will be evaluated both at on-farm research field and by farmers to assess performance, yield gap, and soil management. On farm research division of BARI will be made involved in the process of evaluation. These efforts will be oriented in the direction of defying climate change effects.

25. *Evaluation of appropriate mechanization options* - The project will form a Technical Committee for performance testing of appropriate machinery promoted by the importers, local manufacturers/traders through floating an Expression of Interest in newspapers. All machines have to be tested at BARI. Upon recommendations by the Technical Committee, appropriate machines and respective companies will be enlisted with the project. The selected brands of tested machines will be promoted among farmers by DAE, with a special focus on young farmers who seem to be more receptive to new machineries.

26. *Research on on-farm post-harvest storage and agro-processing* - Postharvest management (PHM) is another part of mechanization especially for HVCs. Appropriate small scale postharvest technology is needed especially for HVC clusters across the southern delta for smallholders to achieve better market outcomes. On-farm research on post-harvest storage and agro-processing will be conducted for vegetables, fruits, pulses, oil-crops especially on small scale processing machineries, through the establishment of common facility center at farmers groups, etc.

27. *Multiplication of seeds/planting material of HVCs* – seeds and planting materials for prioritized HVCs will be multiplied to ensure availability among farmers. BARI will produce breeder seed and handed over to the BADC to produce foundation seeds to distribute among farmers. Private seed operators will also be linked in the seeds supply system.

Sub-component 1.3 Institutional support for research and extension

28. Institutional support will be provided to secure the quality of project implementation, such as improved service facilities for both extension and research in the forms of necessary infrastructure and equipment (also ensuring environmental conservation and necessary climate resilience enhancement), deployment of project staff, and supply of vehicles. Capacity building of professionals, technicians and management staff: Training/exposure visits on contemporaneous research for stress as well as climate smart agriculture. The following activities will be considered:

- Formation of implementation team at different levels by placing capable manpower;
- Development of comprehensive work and budget in line with the log frame of the project;
- Timely procurement and efficient use of equipment and goods;
- Develop and implementation and effective monitoring system, also able to record and share challenges, identified best practices and lessons learnt;
- Regular and effective coordination within the implementation stakeholders at different level centre to union;
- Regular follow-up of monitoring and evaluation activities;
- Proper capturing of information, documentation and reporting.

29. **Component Exit Strategy and Sustainability**: The component is based on capacity building of existing and/or new FPM groups to identify market opportunities and identify the service providers along the value chain who are needed to increase their productivity, profitability and reduce their food security risks from engaging more in market-led agriculture. Increased capacities in DAM and DAE staff will continue to be applied after the project has ended, as will the group capacities. These initial skills will be further supported and sustained through linkages with other GoB departments and the private sector along the selected VCs.

30. **Risks and Mitigation**: Several potential risks have been identified that could affect successful implementation of this component.

Risks	Risk level before mitigation	Risk reduction approach	Residual risk level
Lack of available staff in DAM and DAE at Upizila and Union levels.	*Medium to High*	*DAM and DAE personnel will be seconded to SACP..*	*Low*
Lack of relevant skills in DAM and DAE staff at Upizila and Union levels	*Medium to High*	*DAM and DAE personnel are the focal points for initial training, ToT for training of groups and for refresher trainings and exchange visits. M and E system to capture this training and time allocation to building group capacities and performance related indicators.*	Low
Access problems for some of the Upazilas during the monsoon seasons	*High to Medium*	*Field activities will be planned to take account of the seasonality of the area and the potential for tropical storms to disrupt implementation of activities.*	*Low to medium*

B. Component 2 - Marketing and processing of HVC

31. In Bangladesh, farmers remain heavily invested in rice even though non-rice crops and non-crop agriculture offer significantly higher incomes. The diversification in agriculture is endorsed by both the National Agricultural Policy (NAP) and the 7FYP which promote the extension of the crop diversification programme towards micronutrient rich horticulture, pulses, oilseeds and cash crops. Along with diversification, success in HVCs is associated with investments beyond production (e.g. post-harvest handling, bulking and storage and processing of fruits, vegetables and spices, cereals, legumes and oilseeds. The price paid to the growers during peak period is often very low, with perishable crops fruits and vegetables vulnerable to heavy post-harvest losses, both in quantity and quality during transportation and marketing. Estimated post-harvest loss of food grains is reported to be about 15 percent and in case of fruits and vegetables, the loss is reported to be 20-25 per cent. For highly perishable fruits and vegetables, the loss may go as high as 40 per cent. This is due to lack of proper processing, preservation and storage systems in the country.

32. The Food and Agriculture Organization (FAO, 201631) has projected that demand for rice will increase by 5.3 million MT between 2015 and 2030, and another 3.7 million MT between 2030 and 2050. The demand for wheat will increase by 0.7 million MT between 2015 and 2030, and another 0.5 million MT between 2020 and 2030. Demand for maize will increase by 0.5million MT between 2015 and 2030, and a further 0.3million MT by 2030. Demand of potato, pulses, vegetable and fruits in 2030 will be 12.3 million MT, 1.2 million MT, 7.0 million MT and 3.2 million MT, respectively. Corresponding figures of these food items in 2050 will be 13.3 million MT, 1.3 million MT, and 7.6 million MT.

33. The impact of this change in demand is already seen in production statistics[32] where between 2011 and 2015 the total area devoted to rice cultivation declined by 5 percent from 76.8 percent to 73.1. Over the same period IFPRI reported that rice yield increased by 11 percent from 2.8 to 3.1 ton per hectare. The changes in production (area and tonnage) for the high value crops in southern delta have also been mapped drawing upon the BBS annual reports for FY 2004/5, FY 2009/10 and FY 2014/15[33]. The area planted to summer (Kharif) vegetables in the south amounts to approximately 20 percent of the national area, and while it has increased substantially from 60,000 acres to over 100,000 acres in the ten years 2005-15, it has accelerated in recent years, increasing by 26 percent in the first five years but accelerating to 78 percent in the more recent period. This rate of change contrasts with the national acreage which increased 104 percent in the first five years but declined to 45 percent by the end of the decade (individual year fluctuations may account for this and would warrant further analysis of the figures).

34. Similar analysis of yield statistics for kharif vegetables indicates substantial yield increases across Bangladesh with 87 percent increase in tonnage over the ten year period for a 45 percent increase in land cultivated. However for the south this productivity gain is not so clear with 54 percent tonnage increase from 78 percent increase in cropped area (BBS FY 2004/5 – FY2014/15). Changes in the cropping mix could explain this apparent discrepancy and more detailed individual District and crop analysis is needed.

35. For the Rabi (winter) season vegetable area planted is approx. 75,000 acre more than the kharif (529,000 ac 456,000 ac) for the country as a whole. The south plants a lower proportion of the national acreage but it has increased from 12 to 14 percent, rising as high as 16 percent over the last ten years. The rabi cropped area for Bangladesh has increased by 31 percent as a whole over the ten years, but the southern districts have increased the area under rabi crops by 53 percent in the same period, but falling back from a 61 percent increase in FY2004/5. Tonnage produced has increased for

[31] FAO 2016 S M Fakhrul Islam, Projections of food supply and demand in Bangladesh in 2030 and 2050.
[32] IFPRI 2016 (in publication) Akhter Ahmed "Poverty dynamics, agriculture, nutrition and women's empowerment in Bangladesh: new evidence form IFPRI's national surveys" presented at the seminar "Building on Progress: Partnering to Further Reduce Poverty, Hunger and malnutrition in Bangladesh 24th October 2016 Dhaka.
[33] Due to the creation of new administrative Districts by the sub division to historical larger Districts, the original Districts of Barisal, Chittagong, Khulna, Noakhali and Patuakhali have been kept for assessing changes over time. More recent single year statistics are presented under the modern 14 Districts that have been created by the subdivision of the original 5.

the country as a whole 89 percent indicating substantial gains in area planted and productivity, but in the south these gains have been even higher with a doubling of production in ten years.

36. **Postharvest management and processing**: In southern region, farmers in production clusters of pulses, oilseeds, fruits and vegetables often receive poor prices due to lack of access to small scale processing and handling technologies. For instance, Patuakhali is the country's largest mungbean producing district having 65000 ha under cultivation, but there are no pulse mills or storage facilities established so that farmers can add value. Similar scenarios exist for peanut (Galachipa), soybean (Lakhsmipur) and mustard (Barisal and Jhalakati). Some potential investors opined poor infrastructure (communication and electricity), which hinders them to invest. However, they aspire for potential processing technologies for near future as after construction of Padma bridge[34] such investment might be possible. A mapping of these clusters and mechanization solutions is needed and should be studied (proposed by Component 1 of SACP).

37. To address this several approaches have been tried, e.g. a common facility center (CFC) which has aa collection point equipped with cleaning, washing, sorting, grading, packing, loading and unloading facilities. The Second Crop Diversification Project (SCDP) of DAE has piloted some 'On-Farm Small Scale Infrastructure (OFSSI)' with a few of the facilities mentioned above. The SCDP mobilized producer groups through NGOs and these groups are not capable of managing a OFSSI. On the other hand, mobilizing the private sector to invest in an OFSSI was a challenge for the project.

38. **Key development constraints**. During field mission it was clear that the coastal area one of the most vulnerable areas of the country to climate change and sea level rise. There are a number of environmental issues and problems that are hindering the development of the targeted project area. Salinity is such an environmental problem which is expected to exacerbate by climate change and sea level rise in the future. The identified major development constraints in the visited upazilas are given below:

Upazila	Districts	Major development constraints
Satkhira	Kaliganj	12 Unions are mostly in salinity, River flows (JoarVata) is a severe constraints, 37 percent lands are under prawn culture, 48 percent lands to be essentially for T. Amon cultivation
	Shyamnagor	Salinity, Irrigation crisis, Sundarbans covered 170,000 ha, Prawn culture in 14000 ha, only 17000 ha is under agriculture, 86 percent agricultural land to be essentially under T. Amon culture,
Jhalokathi	Nalchhiti	37 percent land is fallow due to flash flood, water logging during sowing time, in some cases the land owners are reluctant to cultivate
	Kanthalia	68 percent land lacking winter crops due to lack of irrigation, drainage problem, and tidal flow (JoarVata)
Mirzaganj	Patuakhali	Aus harvesting and T. Amon planting are in the same time, as a result severe labour crisis are facing, Lack of paddy parboiling and drying facilities, Lack of irrigation and drainage facilities, Basin land creates water logging, labour crisis, Loancrisis, Idleness of the farmers, seed crisis, No initiatives for re-excavation of canals

39. **Key development opportunities**. With a growing population in regional areas it is suggested that the focus be on regional markets also in parallel to national and export market. Some identified opportunities are:

(i) Differentiate product – with increased middle-class population, agro-processing companies are increasingly targeting them and processing agro-based products for which they need differentiated products. They often struggle to procure the right products from the current

[34]The Padma Bridge is expected to unlock the potential and transform the lives of nearly 30 million Bangladeshis living in the country's Southwest region. By reducing distances to major urban centers like Dhaka by almost 100km, the bridge will facilitate regional trade, reduce poverty while accelerating growth and development in the country as a whole.

spot-market based trading system. Through SACP, interested private agro-processors as well as large wholesale buyers will have cost-effective means to reach the small holders to share their needs so that the farmers produce accordingly.

(ii) Potential to market collectively. Formation/mobilization of farmer groups will create the room for the farmer members to market jointly if they wish. At the output level, collaborative action will enable smallholder farmers to aggregate a sufficient quantity of good quality product to meet the needs of downstream institutional buyers. Consolidation should also enable smallholder farmers to gain efficiencies of scale in transport, thereby lowering the cost. In the input market, collaboration should enable smallholder farmers to obtain seeds, chemicals and fertilisers at a lower cost. However, and especially relevant to the SACP, collaborative action will provide access to technical support through DAM, DAE, BARI and potentially from the private sector through engagement in contract farming if found feasible.

(iii) Having formed farmer groups, smallholder farmers can now be trained in small business management, including marketing, thereby enabling them to transact more equitably with downstream buyers and input suppliers.

(iv) Where it can be shown to be economically viable, with appropriate training in village-level food processing and investment in plant and equipment, smallholder farmers may engage in the production of value-added shelf stable food products.

(v) The pro-poor farmers can also be engaged in some non-farm activities like establishing small scale enterprises for steeping preservation/ making mango salt stock with green mangoes, boiling and drying of turmeric, chilli drying etc. (ICPL, 2016). The employment potentiality of youth and female poor farmers as employee in the agro-based SME is given in following matrix. These activities will include working in postharvest management and processing of agricultural produces. The crop specific engagement of youth and female farmers are detailed below:

Commodities	Female farmer engagement	Youth engagement
All selected agricultural commodities	Employed as factory worker or other occupation	Employed as factory worker or other occupation
Mango	Engagement in sorting, grading, de-latexing, hot water treatment, ripening of mangoes at agents' level, Salt stock Preparation	Mango orchard management, harvesting, transportation and post-harvest, spraying and packaging of mangoes, potato chips preparation
Tomato	Engagement in post-harvest management	Crop production, transportation and also post-harvest management activities,
Chili and Turmeric	Turmeric boiling, Chili and turmeric drying	Turmeric boiling, Chili and turmeric drying
Potato	Potato chips preparation	Potato chips preparation
Mustard	Kashundi preparation (group forming)	-
Pulses	Chanachur, JhuriBhaja, Beson preparation (group forming)	Chanachur, JhuriBhaja, Beson preparation (group forming)
Maize	Small scale feed mill (in groups)	Small scale feed mill (in groups)

Component description:

40. **Justification** - increased growth in the agriculture sector is driven by diversification of agriculture production systems away from predominantly rice production, to production of other high value crops, with an associated intensification of production around homestead areas. However, often small holders' increased production does not result in increased income due to the mismatch between their production and market demand which is more commonly seen as their "poor market access". The root cause of such mismatch is actually the asymmetric information leading to inefficient market system where buyers do not reach the producers to educate them on their needs. This demands a new and more flexible research and extension system, with a pluralistic provision of extension and other input and output services to the agriculture sector. This component will support small holders to access market in a more efficient manner through creating a conducive business environment for private sector to reach them. Value addition will be through processing, storage, and transport of agricultural commodities. There is a large domestic market as well as foreign market for

safer and higher quality products and processed foods. Considering these potentials Component 2 will promote agribusiness activities through value chain streamlining of selected high value commodities to develop value chains and farmer-market linkage, generate employment towards alleviating poverty, as well as increasing households' income.

41. **Implementation Strategy** – This component builds on value chain selection and production related capacity building activities for farmers under Component 1 and therefore, develops farmers' skills on post-production activities to access market in a more efficient and effective way. Under this component, the project will invest in reducing the market inefficiency, especially in terms of asymmetric information. Through the creation of the entry point and platform (farmer groups) under Component 1, the private sector will be able to communicate to the producers in a cost-effective way about their requirements in terms of quality and quantity, price conditions for different marketable categories, packing and packaging, delivery conditions. This will help reduce the perception of additional costs, or risk of negative return from quality and quantity assurance at production level by the buyers. The lead implementer for this component is Department of Marketing (DAM) through collaboration with other implementing agencies. **Synergy with other components/sub-components** - While Component 1 focuses on making farmers more productive in producing high value and high-demanded crops through accessing improved production knowledge and technology, Component 3 supports in improving their access to irrigation water. The produced goods need to be marketed in a competitive manner by conforming to buyers' requirement where Component 2 steps in and builds producers' capacity accordingly. The interventions/activities under this component will be undertaken in parallel to those under Component 1 and Component 3 to ensure synergy and maximization of resources. For example, a buyer may require a specific product to be supplied with certain packaging features but may also want the product to be produced using a specific seed variety. While the former falls under post-production knowledge i.e under Component 2, the latter has to be addressed at production level i.e. under Component 1.

42. The objective of the component will be to enhance farmers' knowledge and skills on post-harvest and processing techniques, develop a demand-driven extension and research approach within DAE and DAM and by engaging private sector, link with private sector buyers, explore and develop opportunities for village-level food processing, and develop existing and potential rural enterprises' (including smallholder farmers) ability to manage sustainable agro-enterprises.

43. It is worth mentioning that *during the last two decades one of the significant transitions in southern agriculture is emerging of different high value product clusters in different pockets from south west to south east. Most of these are developed owing to the own endeavour of agribusiness entrepreneurs (agriprenures) and climatic suitability. These clusters have been characterized by an integrated group of enterprises within a specific geographic location that produces/buy or sell from each other in order to produce/supply a particular set of products or services to final consumers (input service, financial institutes, producers, broker, processors, packaging, transports, wholesaler, retailer, etc. as market actors)*[35].

[35] Background paper No. 3: High Value Cluster in Southern Region.

HVC Clusters[36]					
Region	**District**	**Upazila**	**Sl no**	**HVC cluster**	**Remarks**
South west	Khulna	Rupsha	1	Summer & winter vegetables (with fish)	9000 ha
			2	Sesame	5000 ha
		Dumuria	3	Summer & winter vegetables (with fish)	
			4	Sesame	
	Bagerhat	Kachua	5	Cucurbits	
			6	Green banana	
		Mollahat	7	Cucurbits (with fish)	
		Chitalmari	8	Tomato and cucurbits (with fish)	
		Morelganj	9	Green banana	
	Satkhira	Sadar	10	Fruit Nursery (country's one of the largest cluster)	More than 200 fruit nursery
			11	Arum (Satkhira local/Madraji Kachu)	
			12	Mango (Lengra)	
		Debhata	13	Cucurbits and arum	
		Assassuni	14	Mele grass	
South Central	Pirojpur	Bhandaria	15	Green banana	
		Pirojpur Sadar	16	Green banana	
		Swarupkathi	17	Guava	950 ha*
			18	Hog plum	
		Kawkhali	19	Hog plum	
	Jhalokathi	Sadar upazila	20	Guava	750 ha**
	Barisal	Banaripara	21	Guava	
	Patuakhali	All upazila	22	Mungbean	>60000 ha***
		Galachipa	23	Ground nut	6500 ha
			24	Sesame	5800 ha
		Kalapara	25	Water melon	1585 ha****
		Dashmina	26	Water Melon	3500 ha
	Barguna	Sadar	27	Mungbean	
		Amtali	28	Sunflower	
	Bhola	Charfasson	29	Cucumber with fish	
			30	Bittergourd with fish	
			31	Tomato	
			32	Mungbean	

[36] Ibidem

			33	Ground nut	
South east	Cox's Bazaar	Moheshkhali	34	Betel leaf	
		Teknaf	35	Betel leaf	
		Chokoria	36	Cucurbits	
			37	Flower	
	Chittagong	Sitakundo	38	Cucurbits, bean seed	
		Mirshorai	39	Cucurbits, bean seed	
		Hathazari	40	Chili (Halda chili/Hazari chili dried)	
	Feni		41	Felon pulse	
	Noakhali	Shubarnachar	42	Soybean	
	Lakhsmipur	Ramgati	43	Cucumber	
		Sadar, Komolnagar, Ramgati, Raipur	44	Soybean	35000 ha
		All Upazilas	45	Betel nut	5467 ha

NB: vegetables cultivated in 20395 ha land of six districts in Barisal division – summer basket

* Atghar, Kuriana, Zindakathi, Norerkathi

** 20 villages including Bhimruli, Ata, Shotodash kathi, Nabogram, Jagodishpur, Dumuria

*** Total mungbean production area in Patuakhali district estimated as 60000 ha which is 24% of countries total pulse production area of 250313 ha[37]. Khaserhat of Bawfal is country's large mungbean market

**** Kuakata, Khepupara, Misripara, Alipur, Mohipur

Sub-component 2.1: Improving market linkage

44. This subcomponent focuses on improving institutional capacity of DAM to enable them to foster market linkages. Considering the current level of under-staffing, 30 Upazila Marketing Facilitator will be engaged through outsourcing in this project under DAM – one in each Upazila. These Upazila Marketing Facilitators will be the primary focal points for working with farmer groups on market-access and marketing-related aspects, and collaborate closely with AEOs and SAAOs in respective Upazilas to transfer jointly post-production and marketing knowledge to farmers.

45. *Buyer mapping and assessment* - DAM district level staff (three most senior staff) and Upazila Marketing Facilitators will be trained on 'buyers mapping' followed by assessment of buyers. While buyer mapping will identify existing buyers for selected crops at different tiers of a value chain i.e. local traders, wholesalers, institutional buyers etc.; assessment of buyers will help select most potential buyers who the project may work together to enhance farmers' capacity to respond to market needs. Buyer selection criteria will be developed at PO level and these criteria may include

[37] Agricultural Research Priority : Vision- 2030 and beyond - Sub-sector : Pulses and Oil Crops

willingness to collaborate, area coverage, procurement volume, product portfolio dealing with etc. DAM will conduct/update the buyer mapping cum assessment once in every one year and a half through involving district level staff, Upazilla Marketing Facilitators and also the AEOs and SAAOs in the targeted areas to create room for more buyers to join the project who fulfil the selection criteria. In the whole project period, the project should select and work with at least 10 institutional buyers and 100 individuals for different value chain crops. One buyer (institutional or individual) may deal with multiple crops while multiple buyers may be selected for one particular crop in different areas.

46. *Agreements with buyers* - Upon identification and selection of buyers, the project will enter into agreements with them delineating the roles and responsibilities of each party. While for institutional buyers it will be formal MoUs at PO level, for individuals it can be informal agreements at local level. The major role for the project is to prepare farmers (through both Component 1 and Component 2) to comply with the agreed upon requirements of the buyers. Buyers' major role would be to attend relevant training sessions for farmers arranged by the project and educate them about their needs. The MoUs and informal agreements should not be a binding document for a guaranteed purchase which may reduce the interest among buyers to collaborate. The rationale behind not having such guaranteed purchase clause are: a) through value chain selection under Component 1 most demanded crops are already selected which are likely to have high unmet market demand; b) through interventions under Component 1, the targeted farmers are expected to be more productive which means, they will make higher profit even if they sell in regular market; c) buyer mapping and assessment has already identified the demand-supply mismatch which are resolved through supporting the farmers and hence, selected buyers are very likely to buy from them. DAM (national, district) staff including their Upazila Marketing facilitators will initiate the negotiation with interested private businesses (local traders, regional wholesalers, national companies, exporters etc) already identified, to educate farmers alongside Agricultural Extension Officers and SAAOs on their needs and requirements and how to comply with those. In the negotiation, the project will primarily highlight the opportunities it will create through investment (such as farmer groups, farmer training on post-harvest techniques and business management skills etc) for private businesses to tap and get access to those 'better equipped' farmers and hence, how much the private businesses would offer to join in such investment – either in kind or cash. There will be formal MoUs signed between DAM and institutional buyers delineating the roles and responsibilities of each party while with individual buyers, informal agreements can be made at Upzilla and district level.

47. *Business management skills development* - Every farmer is an entrepreneur and like any other business, farming also need operational, marketing and financial management. Lack of knowledge of farmers on these aspects often make them inefficient and non-competitive. Linking with buyers will be fruitless unless the farmers manage their farming efficiently and in compliance with buyers' requirement. DAM district level staff and Upazila Marketing Facilitators will be trained on basic business management skills along with Business Development Services (BDS). They will train the SAAOs who in turn will train farmers in a simplistic way. Once the DAM district level staff and Upazila Marketing Facilitator become knowledgeable on business management skills and BDS (such as finance, standards, certificates, legal requirements) provisions and respective providers, they can assist not only farmers but also rural-agro enterprises to avail different BDSs through an informed manner. The project will support documentation and printing of business management skills technical modules as well as mapping of BDSs provisions required for different agro-enterprises so that these resources can be used beyond the project period.

48. *Formation of multi-stakeholder platforms* – The project will form multi-stakeholder platform in each district stationed in the local Chamber of Commerce and Industry office. These multi-stakeholder platforms will include Farmer Groups, representatives from the local Chamber of Commerce and Industry, local government, DAE and DAM, research institutions, agro-input companies, agro-processors, transport and logistics providers, private sales agents, financial institutions, professional organisations of the agriculture sector and farmers. President of the Chamber of Commerce and Industry will chair the platform. The role of these multi-stakeholder platforms is to provide a forum for the discussion of industry or sector problems and constraints in a holistic manner thereby ensuring

that the interests of all stakeholders are represented and protected. District DAM office will primarily assist respective Chamber of Commerce to maintain the functioning of the platform. The forum will sit together once in every quarter. The project will bear the costs for snacks/food and the Chamber will provide venue and logistics support as their investment. **Expected Benefits**. Through creating a more efficient market system where buyers share their requirements to sellers (producers) and how to conform to those requirements, the farmers are likely to have an improved market access resulting in increased income. The business model promoted in this component is different than traditional approach. Farmers' poor market access is not directly addressed by project itself but by engaging the buyers between whom there is a transactional relationship. Learning from buyers will have much higher impact on farmers to adopt improved post-harvest practices (such as appropriate seed variety, grading, sorting, cleaning, packaging, primary processing etc.) against learning from project staff alone with whom they do not see a transactional relationship. This benefit will continue even beyond the project period, as by end of project the buyers will see the benefit on investing on farmers and farmers will experience how conforming to buyers' requirement yield in higher income. As market demand changes, new types of requirement may appear in future but as buyers are connected with farmers by end of project, they will continue to educate farmers on new trend.

49. Through the capacity building programs embedded in Component 2.1, smallholder farmers will gain the necessary business management skills to engage with downstream buyers, improving their negotiation skills and their ability to enter into contractual arrangements with a better understanding of both their obligations and those of their exchange partner. Where it can be shown to be economically viable, smallholder farmers will have the choice of processing shelf stable products for the retail market, rather than to sell a commodity.

Sub-component 2.2: Post-harvest and processing investments

2) This subcomponent materializes enhanced capacity of DAM and SAAOs; and agreements with buyers to connect with producers. The subcomponent also creates the provision to support promotion of agro-processing enterprises. The major activities revolve around building producers' capacity on post-harvest activities and primary processing to respond to buyers' demand; identifying and supporting potential agro-processing enterprises.

50. *Farmer training on post-harvest and primary processing* - DAM district-level staff and Upazila Marketing Facilitators will be trained on post-harvest and primary processing of selected crops as per the need identified during the buyers' assessment. DAM, thereafter, will provide such training to SAAOs, who in turn will train the farmers with the presence of buyers with whom agreements have been signed. Buyers (individual or institutions) must develop a sense of ownership on the training activities and for this reason, they should be consulted and involved at each level – starting from training module development till providing training to farmers. The selected buyers are expected to contribute financially (may be in kind, by providing time, resource persons, venue etc.) in the training events for farmers – for individual buyers cost-sharing is expected to be at least 10% while for institutional buyers it is 20%.

51. *Promotion of agro-processing enterprises* - The project will provide financial and technical support to 300 agro-processing enterprises (to the individual agripreneurs or producer groups), on average 10 from each Upazila, linked to Farmer Groups. It is envisaged that a particular Farmer Group may or may not propose to start or upgrade an agro-enterprise. Few members from one group or several groups may join together. All these options will remain open to select appropriate candidates to choose for project support. In this regard, the project will design matching grant implementation modalities for investments in promising agro-enterprises in the areas of storage infrastructure, pack-house, post-harvest and processing equipment/machinery. The matching grant amount will be on average BDT 2 million based on the business proposal merit and the grant amount will not exceed 70% of the total investment cost (storage infrastructure and/or machinery) where the rest will be borne by the entrepreneur. Investment may include multi-crop cold storage infrastructure,

mechanical dryers for grains and pulse, mechanical sheller for grains, grinding machines for oil seeds, grinding and pellet making machines for animal feeds etc.

52. The grant amount will vary depending on the business type and size. Four multi-crop cold storage facilities (for perishable items such as vegetables and fruits) in four of the promising districts of the project area will be supported, for each of which BDT 10 million would be the matching grant amount. On the other hand, a mechanical sheller for grains may require only about BDT 100,000 as matching grant from the project. Small-scale processing facilities such as drying and roasting of ground nuts, chanachur (local snacks), puffed-rice making etc. which may require less amount of matching grant shall also be considered for support. It is important to note that the business proposals must come from the entrepreneurs (individual or group) - existing (to expand business) or potential to start on what they have already experience and knowledge (only exception for nutrition rich fruits and vegetables processing training participants under Subcomponent 2.3 who will get the training from the project and then can apply for the grants to start business). The project will provide business management skills and also assist in accessing BDSs for the selected entrepreneurs after winning the matching grant. Whatsoever, the total number of matching grants will be 300 and the total amount will be limited to BDT 600 million. In order to ensure that the small holder farmers/entrepreneurs are not excluded from this opportunity, at least 200 grants must be received by those who belong to farmer groups the project has mobilized including women members who will be trained to process micronutrient rich fruits and vegetables (discussed in the following section). The overall implementation will include an application process, for which it is envisioned that applicants will need to submit a business plan. It can be assumed that all applicants may not have the capacity to develop such a business plan and DAM district level and DAE upazila level staff will need to assist them. Technical capacity of both DAM district staff and DAE Upazila staff will be developed accordingly. The final selection for businesses eligible to receive the matching grants will be carried out through an evaluation process at PO level, in line with evaluation criteria prepared in consultation with IFAD.

Sub-Component 2.3: Development of food safety and nutrition measures along the value chain

53. The objective of this subcomponent is to promote nutrition sensitive value chains and products and thereby enhance the consumption of safe and diversified diet for households, women and young children. DAE will act as the lead agency through collaboration with Bangladesh Institute of Research and Training in Applied Nutrition (BIRTAN), DAM and BARI.

54. *Food safety and nutrition training of trainers* -Training manual on quality and food safety management systems will be developed and selected resource persons of the agencies mentioned above will be trained. These resources persons will ultimately roll-out the training of trainers at the district, Upazila and community level.

55. *Training on community based safe food processing* - Following the ToTs received, SAAOs will provide training to farmer group leaders, women farmer groups and relevant agro-processors selected for matching grants on processing of micronutrient rich fruits and vegetables. A special attention shall be paid to reach targeted households with disable family members and vulnerable livelihood options. The training will strengthen capacities on the use of simple hand operated/mechanised equipment to carry out processing and preservation activities (e.g. food products widely consumed in Bangladesh, seed cleaning, blanching, drying, pulping, juice extraction, pickling, chutney and sauce making, bottling, fermentation, fruit toffees, dehydrated nutrient dense vegetable mixes, fruit based yoghurt production) for value addition, income and nutrition.

56. *Training on product and nutrient labelling:* Selected district and Upazila level officials and related food processors will be provided ToTs on product labelling and relevant nutrient information on horticulture products (in Bangla language) to provide knowledge on nutrient composition of foods, make informed food choices and enhance household nutritional behaviour, who in turn will train the farmers.

57. *Behavioural change campaign: Every year a* 2-day behavioural change campaigns on National Food Safety and Agriculture Days will be carried out for enhancing horticulture consumption

for women farmers specifically resource poor women to ensure increased demand of micronutrient rich fruits and vegetables by improving shelf life of the horticulture produce and increasing consumption and diversity of micronutrient rich foods in the diet for better nutrition. DAE, being the lead agency, will engage DAM to ensure active participation of large agro-processors (with some of whom DAM already signed agreement under subcomponent 2.1) in this campaign.

58. **Component Exit Strategy and Sustainability**. The subcomponent attempts to address inefficiency of the market system where buyers do not invest time and resources to build the capacity of small holders to enable the latter to supply their produce in an informed way. With the creation of the platform (the farmer groups) private sector buyers will find it cost-effective to reach them in sustainable way where DAM and DAE through increased capacity will assist the private sector to educate them. Once this connection has been developed, private sector is likely to continue the direct relationship with small holders to continuously educate them on their needs and requirement. On the other hand, DAM with its increased capacity to assess market and buyers will take this knowledge forward to carry out the same business model in new areas beyond the project. Agro-enterprises supported through matching grant will create a demand-pull for more products affecting a production growth of the primary commodities in the project areas. Through promotion of nutrition enriched processed agro-products, there will be higher demand of such products and new similar enterprises are likely to join the rally seeing the market opportunity. Multi-stakeholder platform created under this component will open a new window to discuss the problems of all the stakeholders in a single forum, address them through collective actions and advocate to concerned authority to create more conducive business environment.

59. **Possible Impacts on Nutrition, Improved Resilience to Climate Change, Environment Impact**: The food processing business will generate nutritious shelf-stable products which will provide nutrition year round. This activities will generate extra household income which will contribute to resilience to climate change. In the production process of food processing activities, minor amount of odourless chemicals can be used which will not pollute the environment. However, the waste water removed from the factory will be drained out to a well. Therefore, the activities under component 2 will not pose any pollution or any harmful waste disposal problem.

60. **Risks and Mitigation**: Several potential risks have been identified that could affect successful implementation of this component.

Risks	Risk before mitigation	Risk reduction approach	Residual risk
1. Institutional buyers unwilling to engage with SACP	1. Medium to low	1. No guaranteed purchase clause in the MoUs with buyers	1. Low
2. Farmers fail to comply with buyers' requirement	2. Medium to low	2a. Engaging buyers at different stages of production and post-production 2b. Strong coordination between Component 1 and Component 2	2a. Medium to low 2b. Low
		3a.Targeting of high-end institutional buyers 3b.Pursuing alternative routes to market	
3.Institutional buyers fail to provide incentives for quality	3.Medium to low	4a.Capacity building programs 4b.Social contracts/obligations to deliver 4c. Proactive facilitation by DAM district staff	3a.Low 3b. Low
4.Multi-stakeholder platforms fail to engage all parties	4. Medium to low	5a. Allowing those to propose who already have experience and knowledge on the business/skills	4a. Medium to low
	5. Medium	5b. Rigorous assessment of matching grant business proposals	4b. Medium to low 4c. Low
5. Entrepreneurs receiving			

matching grants fail to perform			5a. Low 5b. Low

C. Component 3: Climate Resilient Surface Water Management

61. The activities under component 3 will support households interested in increasing their productivity and diversification to HVCs with water infrastructure that will provide supplemental or full season water access, through a range of investments in water storage and provision to cropland, with associated capacity development for households and groups to manage this water infrastructure. All activities in this Component will be closely associated and enhance initiatives of value addition under Component 1 and 2 – the location and scale of interventions will depend on identified and prioritised food production and cash crop production activities and their need for supplemental and full crop season irrigation.

62. **The Source of Irrigation Water**: Bangladesh is a riverine country and blessed with plenty of sweet water resources suited for irrigation work.

63. Bangladesh is a delta formed by the great river Ganges, Brahmaputra &Meghna (GBM). The big rivers and other rivers carry water from its source namely the Great Himalaya and the rivers meets the Bay of Bengal passing through Bangladesh at the tail end. The river is a system with many tributary and sub-tributary to carry water from its source and inland rainfall to final destination or ocean. The portion of Ganges under Bangladesh is called Padma and the portion of Brahmaputra is called Jamuna. The river Padma provide surface water at south-west region of Khulna Division mainly through Gorai –Modhumoti river system which fall in acute shortage in winter due to the diversion of Ganges flow by India to their land.

64. The south-central portion is Barisal division receives water from lower Meghna and flowing from north-east to south-west direction flows to Bay of Bengal. The river systems are Hilsa-Sahbajpur-Tetulia, Karkhana-Lohalia-Galachipa-Rabnabad, Rajgonj-Payra-Buriswar, Kirtonkhola-Sondha-Bishkhali, Arialkha-Sugandha-Kocha-Baleswar-Haringhata rivers system. The south-east part is the Chittagong division gets surface water from lower Meghna estuaries as well as from the hilly range of the eastern Bangladesh. The river Karnaphuli, Sangu, Matamuhuri, Feni carries water from hilly district of Bangladesh as well as of neighboring India. Some area have potential ground water source.

65. **Implementation Strategy** - Considering the experience and capacity of minor irrigation and drainage development, the Bangladesh Agriculture Development Corporation (BADC) is proposed to implement activities under component 3. The BADC has a well-organized irrigation division headed by Chief Engineer (GOB grade II official). Mostly engineering graduates and diploma engineers are engaged in the developmental activities of the division. In the selected districts, Executive Engineers (Grade 5), will be overall responsible for the project interventions. Assistant Engineers (Grade 9), sub Assistant Engineers (Grade 10) and mechanics/technicians will be responsible for implementation of the activities. The activities under Component 3.2 (institutional support/capacity building) will be outsourced through competitive bidding where applicable. Some short term consultancy provisions have been proposed for ensuring sustainable water user groups formation and community participation in O & M in line with the participatory water management rule, environmental aspects in water management.

Sub-component 3.1 - Sustainable surface water management, drainage, conservation and utilization

66. The key activities will involve infrastructure development for surface water conservation and utilization for irrigation (high efficiency delivery systems), addressing drainage congestion, efficient

irrigation system management, rainwater harvesting, and energy efficient water management etc. Selection of sites for specific activities will be based on ecological and environmental situations in the project areas and will be location specific. The following are a range of interventions and potential scale of interventions that have been identified based on needs prioritized by HVC growers, lessons learned in other projects, knowledge of the area and its production constraints, the focus on production and marketing of HVCs.

67. *Crop Protection dyke* - to protect crop land growing HVCs against tidal flood and heavy raining low land and char areas approximately 45 km of dykes will be made. During exceptional adverse condition of flood, people with their livestock will take shelter at dyke.

68. *Re-excavation and maintenance of canals*- To provide water for irrigation and/or drainage of excess water. To be undertaken for both water conservation as rainwater harvesting for irrigation and drainage facility. This will be implemented in the areas having problems of drainage congestion or tidal flooding causing delays in crop establishment and or irrigation facilities to meet crop demand. Around 316 km of re-excavation will be made in suitable sites in close links with FMP Groups. Canal water to be used for household consumption. Dykes will be used for sheltering of domestic animals during flood, fishing facilities created, navigation facilities improved and duck culture introduced.

69. Thousands of canals flowing over the project area make the map crisscross like net. The canals are used as source of irrigation water, household use, fishing, duck culture and navigation purpose. The south-west and south-central is developed by Ganges tidal flood plain. The south-central have the underground water holding aquifer at a depth of more than 1000ft. Which is not feasible or cost effective to extract for irrigation purpose. Also experts ask to avoid ground water extraction; as it may cause salinity problem. But plenty of surface water is there. During 1980's BADC used more than 8000 (Eight thousand) Low Lift Pumps and irrigate most of the cultivable land. The south-east also has a lot of canals connecting the water body. During monsoon the river and canal carries excess sediment with the flow. When the high tide from south make the flow stable or stagnant the silt & clay deposit to form char. Year after year deposition of sediment decrease the water reservoir capacity.

70. For winter irrigation, canals cannot provide sufficient water due to its less storage capacity. Also rain water cannot stored at canal to drain out the excess water from the field. The farmers pointed the priority to re-excavate the canal to ensure the surface water supply at dry period. Some of the areas needed canal both for water supply & drainage development.

71. *Construction of on-farm water management structures* - The small-scale structure will be built in the water course and canals at farm level as civil works to regulate water. The tidal canals in the project sites divide the homesteads. The structures will be constructed for crossing the canal to wider road and easier transportation of agricultural crop, goods and farm machines. Approximately 291 sites will have provision of such structures.

72. The project area has a lot of water courses towards the field to enter the tide water at high tide & drain out the water again at low tide. The water course or canal needs foot bridge or cattle crossing to be used by farmers to carry tillage equipment, seedlings, fertilizer, cattle & for regular movement to take care of crops. Some of the village road have pipe culverts of small & insufficient diameter to drain out the excess irrigation water or excessive rainfall. Some of new depression needs pipe culvert or water pass to drain out stagnant water. The small-scale structure will be built in the water course to connect market to field & homesteads.

73. The project area under consideration lacks rural agricultural infrastructure in comparison with other area. To facilitate communication facility some small structure construction is needed.

74. *Community pond excavation with homestead solar irrigation pump sets* - for water storage for productive uses - This will be mostly done in the southwest part where prevalence of salinity is more. Efficient irrigation system management for HVC will be implemented at the homestead level. In

addition, solar energy will be used for domestic purpose and homestead vegetables. Efficient micro-irrigation like drip irrigation systems to be introduced for increasing irrigation efficiency for HVC.

75. Previously all homesteads have a pond for fish culture and house hold use. But now without any re-excavation or renovation of pond or village water body it becomes ditches with store of waste water & breeding place of mosquito. The pond and ditches of private & public ownership needed to re-excavate to store rain water.

76. The solar pump will be installed near the pond to continuous pumping & storing water over surface to make gravity flow of water to the plant, fruit trees & vegetables with drip type of irrigation using small water control tap.

77. *Promotion of solar irrigation pump sets and drip irrigation*- to maximise water use efficiency - Solar energy in the remote southern districts is getting popular for domestic supply. Where feasible, solar energy (no operating cost, thus cheaper option for energy saving) along with high efficiency drip irrigation system will be installed to support high value crops in the project sites. Research institutes may be involved in technological support and share experiences in installation of these high efficiency systems. Around 50 pump sets will be installed in suitable sites.

78. *Installation of buried pipe system*- for new pump and BADC existing pump (for water lifting devise from surface water sources) for irrigation to increase irrigation water use efficiency. In continuation of similar intervention through previous projects and programs the buried pipe system will be installed. The activities will be undertaken in newer schemes and in some cases it will be extended to old schemes to further increase command area. The system will reduce water loss thus reduce irrigation charge to almost half. Buried pipe irrigation system also saves land and water compared to conventional earthen or constructed channel. A total of about 260 kilometres of buried pipe will be installed including extension of existing schemes.

79. Conveying irrigation water from source to the field with buried pipe is most popular to the farmer. Buried pipe reduces water loss up to no loss condition with no loss of valuable agricultural land as in case of constructed canal or earthen canal and it needs almost no maintenance work. So the system will reduce the irrigation cost almost half and increasing the command area under one pumping unit, the cost may be reduced more. Moreover, when a small land is separated by small ditch, homestead or orchard it can be connected by buried pipe irrigation system.

80. *Provision of hose pipe for irrigation scheme* - for conveyance of water to remote locations to extend the irrigation command area. Hose pipes will be provisioned for conveyance of water to remote locations which will increase irrigation area. It will reduce conveyance loss and conveniently distribute water, where needed. Approximately 12,500 meters of hose pipe will be installed in the selected project sites.

81. Hose pipe for irrigation is a new idea introduced in the project area. The small and marginal farmers appreciate this type of water conveyance system. Due to its most flexibility it can go around homestead, trees, ditches or any other obstruction of smaller height. It is easier to carry by farmer to field and store the same after irrigation work.

i) Artisan well installation - in areas of the confined (pressurized) aquifer zone in the southeast part. In the south-eastern part of the proposed project sites artisan aquifers zones are available and piezometric surface is close to the surface. This does not need abstraction through pumping. Tapping water from such shallow depth will be affordable and easy to use for irrigation. The resources will be utilized to irrigate high value crops of commercial importance. Around 100 suitable sites of such artisan well will be installed

ii) Dug well: South-western coast of Bangladesh have some saline problem to some extent. But the pond water infiltrate from surface water is drinkable and the dug well receive the same surface and sub-surface water which can be used for irrigation.

iii) Installation of rainwater harvesting structures - considering acute shortages of fresh water during dry season rainwater harvesting will be introduced at the household level both for irrigation and drinking water purpose. During the project implementation around 3,000 will be installed in the project duration.

82. Key activities of component 3 of the project are mainly efficient use of irrigation technology. Thus, it is expected that after project completion irrigation efficiency of the project site increase from 35% to 42%.

Sub-component 3.2 - Institutional support for Capacity Building

83. The interventions under this sub-component will address enhancing efficiency in service delivery of agency and relevant stakeholders. This will focus community ownership of the water management infrastructure through (i) Formation, mobilization, training and development of Water User Groups(WUGs), following government participatory water management guideline, (ii) skill development of the agency and water users and (iii) developing institutional facilities for better service delivery (office, transportation and other logistic support).

84. The activities proposed are based on the assessment of the existing facilities/ infrastructures in the proposed project sites. There are 18 offices of BADC in the proposed project areas where some renovations have been proposed. Activities under the sub-component are:

- Renovation of office/training center in the project sites (ten) for better office accommodation and pertaining training to the engineers, technicians, pump operators/managers, water user groups (farmers) etc.
- Overseas training for skill enhancement of relevant engineers and planners in efficient irrigation and drainage system design and planning
- Printing and publication of reports, project documentations and training manuals

85. **Component Exit Strategy and Sustainability**: The proposed project includes formation of WUGs who will be the primary beneficiaries of this component. The capacity of the groups will be enhanced through training so that after completion of the project, the groups will have the necessary knowledge and skills to be responsible for general O&M of the interventions of the water management infrastructures. The project plans to build the capacities of BADC and their engineers, which after this initiative will be able to better contribute to the development of the South and potentially cascade their knowledge and support other areas of Bangladesh. In addition, the work foreseen between BADC personnel and the WUGs and communities at large will create strong linkages which will support any future project of this kind.

86. *Synergy building* with other components, monitoring and evaluation will be undertaken through TA part in line with the local counterpart staff. Training under institutional support for capacity building will be implemented through technical assistance (TA).

87. **Risks and Mitigation:**

Risks	Risk before mitigation	Risk reduction approach	Residual risk
Component 3			
Natures of risks, social, business, environment…			
3. Lack of interest of the beneficiary groups in ownership building of the infrastructures	*Medium*	*a. The need for irrigation and water management interventions is recognized in the area;* *b. Reasons for such intervention thoroughly explained;* *c. Trust building will be made to bring about greater understanding between agency and beneficiary.* *d. Awareness raising workshops will be held to build trust.*	*Low*
4. Lack of coherence among the	*Medium*	*e. Strong coordination capacity and leadership in the*	*low*

components in selection of sites of interventions		*project Director and the steering committee;* *f. FAO will support the process and technically backstop the selection.*	
5. Delay in implementation of infrastructure works	*Medium to high*	*g. Strong monitoring from BADC to, adhere to the time line, linkages with local authorities.*	*Low*

Appendix 5: Institutional aspects[38] and implementation arrangements

A. Institutional aspects of MoA[39]

1. The Ministry of Agriculture (MoA) is one of the 39 ministries of the Government of the Peoples Republic of Bangladesh. It comprises seven wings with responsibilities of policy formulation, planning, monitoring and administration. The ministry has sixteen agencies40 which are responsible for implementation of different projects and plans of MOA. At present, the ministry has been managing 131 investment projects and 3 technical assistance projects through these agencies (MOA, FY 2016-2017). Of these, 8 investment projects and all three technical projects are foreign aided, and the rest are revenue projects. Most of these projects have been implemented by the leadership of relevant agencies where MOA's role is supervisory. However, two large-scale projects have been directly managed by the MoA, namely Integrated Agricultural Productivity Project (IAPP), FY 2011-2016 and National Agricultural Technology Project-Phase II (NATP-II), FY2016-2021 through forming a Project Management/Coordination Unit (PMU/PCU) managed by the Ministry and components by the relevant agencies through forming Project Implementation Units. Phase – I of NATP (FY 2008-2014) was also directly managed by the MoA through a PCU and different components by the relevant agencies.

Table 1: List of projects led by MoA and others

Project Name	Duration	Led by	Agencies involved	Region covered	Districts under southern region	Funded by
On-going Projects						
Integrated Agricultural Productivity Project (IAPP)	2011-2016	MoA and MoFL	DAE, DLS, DoF, BADC, BARI, BRRI, SCA, BFRI, FAO	Rangpur and Barisal	Barisal, Jhalakathi, Barguna, Patuakhali	GAFSP
National Agricultural Technology Project – Phase II (NATP-II)	2015-2021	MoA and MoFL	DAE, DLS, DoF, BARC, BARI, BRRI, KGF, Hortex Foundation	All divisions	Khulna, Satkhira, Chittagong and Cox'Bazar	World Bank and IFAD
Second Crop Diversification Project (SCDP)	2011-2016	DAE	BRAC*	Southwest and northwest	Khulna, Pirojpur, Satkhira, Bagerhat, Jhalakathi, Barisal	ADB
Cereal Systems Initiative for South Asia in Bangladesh – Mechanization and Irrigation (CSISA-MI)	2014-2017	CIMMYT	iDE*, DAE and private sector (agril. machineries importers, local manufacturers, dealers)	Southwest and central	All districts of Southwest and south central	USAID (FtF)
Recent Past Projects						
National Agricultural Technology Project – Phase I (NATP-I)	2008-2013	MoA and MoFL	DAE, DLS, DoF, BARC, BARI, BRRI, KGF, Hortex Foundation	120 upazilas	Khulna, Satkhira, Chittagong and Cox'Bazar	World Bank
Emergency Sidr Cyclone Recovery and Restoration Project (ECRRP)	2010-2014	FAO	MoA through DAE, DLS, DoF	Southwest and south central	13 Upazilas of 6 districts	World Bank

** engaged as Non-government entities. BRAC is engage for providing agricultural credit to the HVC producers. iDE is an International NGO working as co-partner and market facilitator with CIMMYT.*

[38] Based on background papers produced and provided at concept note stage, and mission findgins during the detailed and final design missions respectively in March and August 2017.

39 This section is extracted from the Background paper 1: Lessons from past and on-going projects led by Ministry of Agriculture prepared by FAO Bangladesh Team in preparation of the SACP design.

40(1) Department of Agricultural Extension (DAE), (2) Bangladesh Agricultural Development Corporation (BADC), (3) Bangladesh Agricultural Research Council (BARC), (4) Bangladesh Agricultural Research Institute (BARI), (5) Bangladesh Rice Research Instit
ute (BRRI), (6) Bangladesh Sugar Crop Research Institute (BSRI), (7) Bangladesh Jute Research Institute (BJRI), (8) Bangladesh Nuclear Agriculture Institute (BINA), (9) Soil Resources Development Institute (SRDI), (10) Cotton Development Board (CDB), (11) Agricultural Information Services (AIS), (12) Department of Agricultural Marketing (DAM), (13) Seed Certification Agency (SCA), (14) Barind Multipurpose Development Authority (BMDA), (15) Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN), and (16) Horticultural Export Development Foundation (Hortex Foundation).

2. Given the coherence to the SACP design, the ongoing project (IAPP) and recently completed NATP-I led by MoA are outlined, as follows.

3. **Integrated Agricultural Productivity Project (IAPP).** In June 2010, the Global Agriculture and Food Security Programme (GAFSP) granted Bangladesh US$ 50 million to finance an initiative of the Ministry of Agriculture, proposed as a project identified under the Country Investment Plan (CIP) for Agriculture, Food Security and Nutrition. The GAFSP-funded Integrated Agricultural Productivity Project (IAPP) was consequently developed in 2010-2011 by the Government with the assistance of the World Bank and FAO who were selected by the Government to be the supervising entities.

4. *IAPP implementation modality*. The Project Management Unit (PMU) is the central operation unit headed by a Project Director (deputed from the GoB at the rank of Joint Secretary) who reports to the Secretary, MoA. Deputy Project Director of PMU deputed from GoB, is mainly responsible for coordination with different stakeholders and assists the Project Director. The PMU has also experts in Project Management and Coordination, community mobilization, administration, safeguard and governance, procurement, financial management, MIS, ME & IEC, network and database to support the Project Director. There are two Regional Project Implementation Units (RPIU), one at Rangpur and the other at Barisal. The Community Mobilization Units are working in 8 project districts. The project has recruited one Community Facilitator in each Union to mobilize smallholders into farmers groups and one Field Assistant per Upazila for livestock part and one Field Assistant for Fisheries part, comprising 472 field extension agents for smooth operation of PMU. Project Components and Project Management Organogram has been shown in Fig 1 and Fig 2 respectively:

Key features of IAPP

Project: IAPP
Funded by: GAFSP
Investment Volume: US$ 50 millions
Duration: 2010-2016
Led by: Ministry of Agriculture
Major Focus: Enhancing productivity of broad agriculture (crop, fisheries and livestock)
Extension Approach: mobilizing smallholders into farmers organization (FO)
Name of FO: Livelihood Field School (Crop-LFS), Livestock Rearers Group, LFS-Fishers Group, Water User Group
Total FO:13238
Geo. Coverage: 4 districts in north and 4 districts in south region
HVC promoted: Pulses, oilseed and Vegetables
Major Inputs provided: Agricultural Machineries, seed processing device, and surface irrigation
Innovation: Livelihood Field School, variety release and technology dissemination, multi-agency (8) coordination

5. **National Agricultural Technology Project-Phase I (NATP-I)**. The NATP was a multi-sectoral project aimed to support GoB's strategy to improve national agricultural productivity and farm income, with a particular focus on small, marginal and women farmers. The project started on July 2007 and closed on 31 December 2014. It had four components: (i) Agricultural Research Support (ii) Agricultural Extension Support (iii) Supply Chain Development and (iv) Project Management and Coordination. The Research component comprises three sub components; i) Competitive Grants Program (CGP) ii) Sponsored Public Goods Research (SPGR) and iii) Enhancement of Research Institutional Efficiency (ERIE). The CGP has been executed by Krishi Gobeshona Foundation (KGF) while SPGR & ERIE by BARC.

Key features

Project: NATP (Phase I)
Funded by: World Bank and IFAD
Investment Volume: US$ 88 million
Duration: 2007-2014
Led by: MoA
Major Focus: HVC
Extension Approach: mobilizing smallholders into Common Interest Group (CIG)
Name of FO: CIG
Total FO: 20000
Geo. Coverage:120upazilas of 25 districts span a broad range of agro ecological zones across Bangladesh.
HVCs promoted: Fruits and vegetables
Innovation: Decentralized extension approach, Quality production-improved post–harvest management- group marketing of products through collection centers

6. *NATP-I Implementation Modality*. The Project Coordination Unit (PCU) was responsible for overall coordination of the implementation of the activities of all components while the PIUs of BARC, DAE, DLS, DOF and the executing agencies KGF and Hortex was responsible for implementation of the respective component activities. The PCU headed by the Project Director who coordinated and facilitated implementation of NATP Phase-I.Overall supervision of the whole project, policy direction

and guidance from the perspective of all stakeholders including farming community were the responsibility of the Project Steering Committee (PSC). PSC was alternately chaired by the Secretary, MOA and the Secretary of MOFL and represented by stakeholders from both public and private sectors. More specific coordination and guidance at the implementation level were provided by the Project Management Committee (PMC) chaired by the Additional Secretary, MOA and co-chaired by Additional Secretary/Joint Secretary of MOFL. In the project management committee representatives of planning wings of MOA and MOFL have been included as members. Structure of PSC and PMC is shown in Annex II & III.

7. **Comparative Strength of relevant agencies of MoA**. Among the 16 agencies of MoA, the Department of Agricultural Extension (DAE), Bangladesh Agricultural Development Corporation (BADC), Department of Marketing (DAM) and Bangladesh Agricultural Research Institute (BARI) are relevant agencies for proposed the SACP. Although relevant as positive agents for the proposed project, however, capacity of each agency varies in relation with their mandate, administrative boundaries, geographical coverage and manpower at grass roots level. Following matrix shows a comparative analysis of these four agencies to assess their capacity towards implementing a project in southern region:

8. **Harmony among four agencies**. The DAE as a lead agency along with BADC, DAM, and three research agencies (BARI, BRRI, SRDI) has been implementing Government funded Pirojpur-Gopalganj-Bagerhat Integrated Agricultural Development Project (PGB-IADP) with a budget of US$28 million which started from March 2015. The DAE-DAM-BADC has been jointly implementing Enhancing Cropping Intensity in Greater Sylhet Region (FY 2015-2019) with a revenue budget of US$9.5 million where DAE is lead. While BADC as a lead agency along with DAE, DAM and two research agencies (BARI, BRRI) has been implementing another US$28 million project name Mujibnagar Integrated Agriculture Development (MIADP). The NATP-II has just started in September 2016 where BARC and DAE will work together along with other agencies. These examples of successful implementation suggest that cooperation between agencies of the MoA is achievable.

9. **Lessons Learned from Past and Ongoing Projects**. The above two projects led by the Ministry of Agriculture (MoA) have been reviewed regarding implementation modalities, key achievements and operational complexities. The IAPP is on the verge of closing (December 2016) and NATP I was closed in 2014. Following are few feedback revealed from different documents including World Bank mission and project completion reports:

10. As a follow up of the NATP I, The NATP II takes into account some of the shortcomings identified under NATP and reflects the integrated approach required to achieve the PDO. The earlier NATP design featured thematic components (i.e., research, extension, supply chain), which often resulted in a fragmented, less well coordinated approach to improve the agricultural technology system. NATP implementation support missions have also reported the need to further strengthen the linkages between technology generation, transfer and adoption.

11. At IAPP, an informal structure of inter-departmental coordination and harmony developed, but lack of a common extension approach (among DAE, DLS and DoF) – and the reliance on specifically-hired project staff as CF, CEAL and LEAF - meant that ownership did not build up properly amongst the organizations at field level.

12. Both NATP I and IAPP largely focused on productivity enhancement, but with increased productivity smallholders often faced challenges in marketing. The lack of focus on commercialization and strengthening linkages between smallholders and markets means that 'productivity projects' may not deliver fully on expected results. Future projects should take care of this emerging issue of marketing and commercialization.

13. A uniform extension approach for mobilizing smallholders into groups is another issue to be considered. With regard to commercialization and market access, strong producer organizations can help modify transaction conditions, such as price and quantity, and can exert influence over the value

chain for a specific commodity. Although extension agencies practice group-based extension approaches, farmers groups are often simply a means to deliver project activities and inputs. The key principles for the development of strong organizations are not applied consistently. These key principles are: autonomy, inclusive leadership, strong bonding among members, business service provision and a clear owned purpose. Considering these key principles, producers organizations should be mobilized for which a uniform extension manual for all agencies is necessary.

14. M&E is one of the key areas in investment projects that should be rigorously considered during project design phase. At IAPP, M&E system functioning from year 3 due to delay in expert recruitment and lack of proper attention towards a robust M&E system. Once it was in place however it gave excellent results, as noted at the IAPP Results Learning Workshop (Cox's Bazaar, September 2016).

B. DAE and its service network

15. *Department of Agricultural Extension (DAE*) works throughout the country with a wide organizational setup. This organization headed by one Director General. It has 8 wings leaded by 8 directors. Field offices are as follows: Regional offices- 14, District Offices- 64, Horticulture centers-73, Quarantine center-30, Metropolitan Agriculture Offices 15, Upazila Agriculture Office - 479, and Agriculture Training Institutes (ATI) - 16. Other than these there are14092 agriculture Blocks covering the whole country. Every block is leaded by one Sub Assistant Agriculture Officer (SAAO). Overall, DAE has 685 formal offices set up throughout the country.

16. The southern region comprises of 3 Additional Directors offices, 14 district offices, 107 upazila agriculture offices, 3185 blocks,4 agriculture training Institutes and 3 horticulture centers. About 570 officers and 3185 SAAOs are working under DAE in the districts of the south (as defined by the Southern Masterplan).

17. The DAE has a number of technical wings, and the following are some selected ones that are highly relevant to the SACP implementation:

18. Horticulture Wing deals with the horticultural crops. It includes fruits, vegetables and flowers. Under this wing there are 73 horticulture centres and nurseries throughout the country. Horticulture wing prepare the plans for increasing the production of horticultural crops. Through the horticulture centers and the nurseries this wing provides good quality planting materials to farmers. In every horticulture center the mother plants of the fruit crops are maintained to produce quality planting materials. This wing maintains all the horticultural crop production data for the years. Among these horticulture centres, four located in the southern region.

19. Crops Wing deals with the development of crops like cereal, pulse, oils, jute, sugarcane, tobacco, betel leaf, bamboo etc. This wing acts as a key-link between Department of Agricultural Extension (DAE) and respective crop research institutions, which deal with these crops. Crops Wing practically deals with production and increase income generation of farmers, plans for field crop oriented training to make available update production technologies for its' stakeholders. This wing also contributes to formulate Government policies related to different crops activities, like production, utilization, marketing and distribution. It also provides technical advice to the Government through Director General on tariffs and other policy issues, such as production, utilization, marketing and distribution of crops. This wing oversees the conversion of up to date crops technology into extension messages and appropriate staff training modules. It also oversees the development of model programs available for use in the field for income generation.

20. Plant Protection Wing. Director, Plant Protection Wing responsible for this wing. Designing an annual work planned to the cultivated areas for keeping safe from disease and pest infestation. Plant protection wing of DAE provides surveillance and forecasting for field crops as required quick action on pest infested areas for better pest management, providing technical advices and justified control measures to the farmer's level through field level extension workers. Implementing & establishing integrated pest management (IPM) in farmer's level for preserving environment.

Providing registration certificate and licenses for different types of agricultural pesticide (AP) and public health products (PHP) as well as its production & marketing. Ensuring quality production and distribution of pesticides for judicial use of pesticide in farmer's level. Establishing linkage with international, national, non-Govt. and private origination for common issues and conceptions.

21. Training Wing largely conducts human Resources Development activity in DAE. Identification and dissemination of appropriate technology needs skilled manpower together with an open eye of the farmers towards technological advancement. Training wing generally involved in execution of Master Training Plans for skill development of DAE Officials, field level extension workers as well as farmers. Under the training wing 16 Agriculture Training Institute (ATI) are graduating Diploma Agriculturists. Every year these institutes enroll 2980 students. The graduates coming out from this institution work at the grass root level as SAAO in the DAE. They also work in the research intuitions, NGOs, INGOs and schools as teacher. There academic administration is under the control of the Bangladesh Technical Education Board (BTEB).

22. Agricultural extension service assists farmers to make efficient productive and sustainable use of their land and other resources. It is an educational process by which information / advice is generated, shared and used for decision making for farm / farm household livelihood development. The Agricultural Support Services Project (ASSP) and Agricultural Services Innovation and Reform Project (ASIRP) funded by the Government of Bangladesh (GoB), World Bank and UK Department for International Development have supported the strengthening of extension services in Bangladesh since 1992.

23. Extension Service Providers in Bangladesh. The agricultural extension system in Bangladesh comprises a multitude of governmental, nongovernmental and private sector agencies. All these Extension Service Providers (ESP) are in the business of providing agricultural advice to farmers:

- ✓ Government Organizations (GOs), traditionally providing services to male farmers operating larger farm holdings, and historically using a one-to-one basis for providing advice. The largest GO ESP is the Department of Agricultural Extension (DAE), which has 15000 field level Block Supervisors Traditionally, DAE concentrate on providing crop advice to small/medium farmers (who operate 60% of land, but only represent 22% of farmers). Separate GO agencies deal with advice on livestock (the Department of Livestock Services), fisheries (the Department of Fisheries) or tree crops (the Forest Department).
- ✓ Non-Government Organizations (NGOs), traditionally providing advice to farmer groups allied to the provision of micro-credit for income generation, favoring to target their services towards women and smaller farm operators.
- ✓ Private sector organizations, which are a more recent addition to the extension system, largely comprising seed, irrigation and fertilizer dealers (which expanded as a result of deregulation in the 1990s). Information is usually provided to farmers at the point of sale.
- ✓ Farmers, who continue to generate and share information amongst themselves with little outside involvement. Historically, farmers have always obtained most of their agricultural information from other farmers. Although farmers are informal information sources, many ESPs have sought to strengthen farmer to farmer extension through the use of farmer groups, para-professionals etc. Importantly, the original source of information transferred by farmers may have been research or extension service providers.
- ✓ Mass media, which although not a separate service (the source of the message came originally from government, non-government or private sector agencies), acts as a significant source of information to farmers, independent of direct contact with an ESP. The range of extension service providers has increased in recent years there is now a high degree of pluralism, and quality is highly variable.

24. Agricultural Extension Service Delivery. Measuring the performance of an Extension Service Provider (ESP) is notoriously complex. Theoretically, a farmer will receive and assess information, may or may not take action as a result, and (should action have been taken) realize some benefit. This benefit is often multifarious, and might comprise changes in the use of agricultural inputs; changes in labor use or time allocation; changes in farm productivity (yields or outputs) or adjustment in any sphere of the farm household livelihood. Measuring such changes is hard enough; attributing them back to the provision of agricultural advice is almost impossible as so many other factors contribute to livelihood changes. One basic (imperfect) approach to service provider performance assessment is shown in Box. Farmers become aware of a source of extension advice (an ESP) and gain contact with that source. Advice is provided to the farmer, who understands a new idea and decides to try it on his or her farm. Practicing this idea produces a good result (in the farmers' opinion), and the farmer decides to use the advice again. There are many caveats to this performance model not least the fact that farmers very rarely fully adopt 100% of advice provided they frequently adapt ideas to their own needs and circumstances.

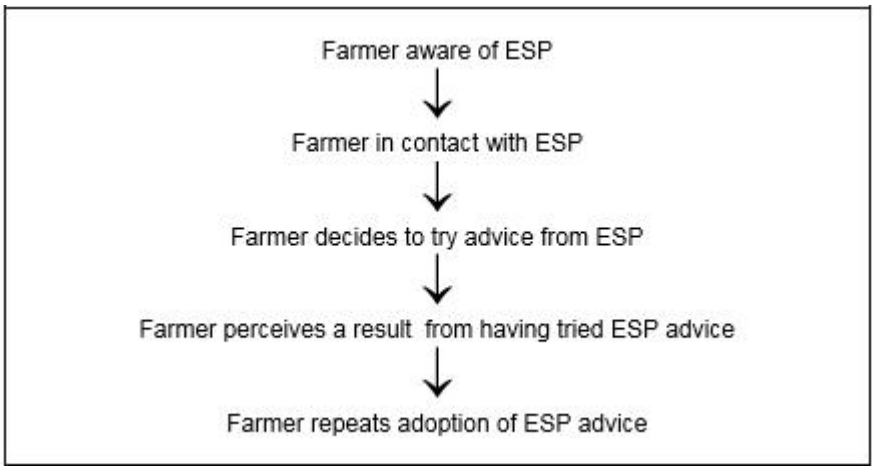


Figure: Flow of extension service delivery

25. Models of Extension Service under DAE. For many years, DAE delivered its services through the Training and Visit (T&V) system. But this system has not been sustained. There were found to be some significant weaknesses of this system, and a new coordinated system has been introduced through a project named Agricultural Services Innovation and Reform Projects (ASIRP). Under this project an integrated system was developed focusing the Extension and Research linkage.

26. DAE strengths and weaknesses can be summarized as follows regarding HVC:

Strength:

a) Qualified man power throughout the country up to block level.
b) Well organized Government organization
c) The Mission and Vision statement of DAE is in favor of High Value crop production
d) It also covers the priority of Ministry of Agriculture
e) The DAE has got well ahead project implementation capacity and experience
f) Working experience with diversified farmers group
g) DAE has a separate horticulture wing
h) There are 73 horticulture centers throughout the country

Weakness:

a) Lack of knowledge on HVC and understanding of market oriented agricultural practices.

b) Top down planning still focused on production aspects rather than economic return or value chain

c) Lack of location specific production planning considering potentiality of HVC production

d) Value chain analysis is only project based

e) Irrigation facilities not been designed in favor of horticultural crop production

f) Lack in Post-harvest management facilities and skills

g) Effective and vibrant Research-Extension linkage is not in place.

27. Government has taken a strategic decision to develop the southern region as a potential crop production zone through an integrated initiative including research, technology transfer, infrastructure development, commercialization of agriculture and high value crop production.

28. Department of Agricultural Extension (DAE) has the potential to implement any initiative concerned with its mandate. The office set up and trained manpower of DAE is capable to work in grass root level in collaboration with all other actors working in the field of agricultural development. Keeping pace with present need, DAE has already embraced the concept of high value crop production throughout the country. However, the existing manpower will need to be trained up on value chain, market linkage and location specific high value crop production and planning.

C. Department of Agricultural Marketing (DAM)

29. Presently, DAM has offices set-up in all 11 project districts. The agency is mandated to develop agribusiness through improving linkages between farmers and markets. Consultation with government counterparts highlighted the following requirements for the department, with particular focus on post-harvest facility, office capacity and market linkage. DAM has been operating from the rented accommodation without its own office premises. Having own office premises, ideally in close association with DAE, and with the necessary logistics and ICT facilities would significantly enhance the capacity of DAM.

30. Presence of Department of Agricultural Marketing (DAM) in the South:

Organizations	Regional/District Offices	Location/ Districts
Department of Agricultural Marketing (DAM)	1. District Marketing Office, Department of Agricultural Marketing, House No-69/A, Road No -04, Sonadanga Residential Area, Khulna	Khulna
	2. District Marketing Office, Department of Agricultural Marketing, 131, Amir Ali Mansion, Bagerhat	Bagerhat
	3. District Marketing Office, Department of Agricultural Marketing, Kaligonj Road, Satkhira.	Satkhira
	4. District Marketing Office, Department of Agricultural Marketing, Barisal	Barisal
	5. Department of Agricultural Marketing (DAM) District Office, Pirojpur	Pirojpur
	6. District Marketing Office, Department of Agricultural Marketing, Bhola	Bhola

D. Bangladesh Agricultural Development Corporation (BADC)

31. Bangladesh Agricultural Development Corporation (BADC) the successor of the East Pakistan Agricultural Development Corporation, established under the Agricultural Development Corporation Ordinance, 1961 (E.P. Ordinance XXXVII of 1961). The corporation has completed 55 years of its establishment on 16 October, 2016. BADC, an autonomous corporate body under the Ministry of Agriculture, serves to the whole of Bangladesh and has a nationwide network of outlying field offices down to the upazila level and at some places even below that level. In 2009 the corporation is made more vibrant and is given some more responsibilities such as providing irrigation facilities to the farmer through surface water utilization, import of non-urea fertilizer through G2G arrangement and strengthening of seed production activities with the task of multiplication of high yielding and different stress tolerant varieties of seeds allocating financial support through new projects and programmes.

32. Minor Irrigation Wing. BADC started its irrigation activity only through operation of 1555 Low Lift Pumps (LLP) in the FY 1961-62. In the FY 1967-68, BADC began to install Deep Tube Wells (DTW) and from the FY 1972-73, it had started to supply Shallow Tube Wells (STW) in order to increase irrigated areas as well as to increase crop production. At present, there are 171041 LLPs, 36034 DTWs, 1563791 STWs and BADC is also using some manual & traditional devices to cover 54.02 lakh hectares of land for irrigation in Boro season all over the country (BADC Survey & Monitoring Report, 2014-15). BADC is constructing Rubber Dams to reserve surface water and irrigating through gravity flow. 4 Rubber Dams have already been constructed and other 2 are under construction. So far, 11 Solar irrigation pumps in different districts have already been set up. Besides these, BADC has made irrigation system acceptable to the farmers through water management, operation and maintenance of irrigation equipment, smooth and optimum use of water at field level. At Present, BADC is implementing a numbers of Project & Program for the development of Minor Irrigation System.

33. The present strategies of Minor Irrigation Wing:

a) To increase irrigated areas from about 54 lakh hectare to 60 lakh hectare within 2021 (about one lakh hectare per year);

b) To give emphasis on use of surface water for irrigation by expanding the availability of surface water through excavation/ reexcavation of khal/nalas;

c) To prevent groundwater depletion through optimum use of groundwater;

d) To increase irrigation efficiency from 34% to 48%;

e) To minimize yield gap from 3 ton/ha. to 1 ton/ha. by 2021; and

f) To increase cropping intensity.

34. The main activities and functions in Minor Irrigation Wing:

a) Excavation/ re-excavation of khal/nalas to preserve surface water and also for drainage purpose;

b) Construction of different types of hydraulic/retaining structures for augmentation of surface water and rain water harvesting;

c) Installation of different capacity Low Lift Pumps and Force Mode Pumps of diesel and electric operation. Force Mode Pumps are also installed where groundwater is below the suction limit of centrifugal pump;

d) Construction of surface and sub-surface (buried pipe line) irrigation channel to minimize water loss;

e) Construction of Rubber Dams in small river, creeks etc.;

f) Rehabilitation, repair, maintenance of old Deep Tube Wells;

g) Introduction of Solar irrigation pumps (use of renewable energy);

h) Installation of Smart Card Pre-paid Meter for optimum use of water and recovery of the irrigation charges;

i) Survey and Monitoring of irrigation equipment, irrigated areas and groundwater table monitoring through auto water table recorder and data logger and database development;

j) To make a database of saline water intrusion in the coastal area of the country due to climate change and forecasting.

E. Bangladesh Agriculture Research Institute (BARI)

35. BARI is the largest research institute in the country conducting research on more than 100 crops including HVC (excluding commodities such as rice, sugar crops, jute and tea) and having more than 700 scientific professionals. Over the years BARI has developed 440 crop varieties and 452 other technologies. It has updated its research capacity in developing laboratories for analytical services, through a series of projects funded by GoB and development partners. The On-Farm Research Division (OFRD) of BARI is located in major agro-ecological zones to bridge with farmers having multiple farming through improved technologies. Three regional stations of BARI will be involved in the project namely:

a) Regional Research Station, Jessore

b) Regional Research Station,Chittagong (Hathajari)and

c) Regional Research Station, Barisal (Rahmatpur)

36. BARI maintains other stations in the regions and also be involved in the project activities which are:

a) Satkhira (Binerpota),

b) Patuakhali(Lebukhali), regional horticulture sub-center

c) Chittagong (Pahartoli)

d) Khulna-OFRD

e) Noakhali-OFRD

Support from two more research stations of southern belt, OFRD, Gopalganj and Regional Pulse Research Station, Madaripur will also be required to facilitate research activities.

F. Field staffing and workload

37. DAE. In the SACP project area (11 districts comprising 30 upazilas), the DAE network has 66 technical positions approved for the district level and only 29 are in place (44%), 180 approved for upazila level and 82 in place (46%), and 857 approved for union level and 577 in place (67%). While DAE's technical officers in those three levels are very experienced and dedicated staff, insufficient workforce remains an issue for assuming further implementation responsibilities for SACP. SAAOs at upazila and union levels will be the most responsive operational capacity of DAE for SACP implementation. Currently each SAAO is in charge of 3-4 farmer groups in average and the increase of additional 2-4 groups was not perceived as overloaded by SAAOs extensively interviewed during the detailed and final design missions respectively in March and August 2017.

38. BADC operates in two levels in the project areas, with at district level 190 positions approved and 107 in place (56%), and at upazila level 119 approved and 84 in place (71%). Similarly to DAE's, BADC technical staff are highly professional, experienced and dedicated. BADC's involvement in component 3 especially in the area of surface water management, would not pose critical operational issue for the implementation.

39. DAM is the least deployed department and its physical office hasn't completed yet in all the project districts. DAM has no upazila presence so far and some required but some far limited work at upazila level has been outsourced to the technical service providers. DAM has 96 approved technical positions in the 11 districts and only 42 in place (44%). 120 upazila technical positions were approved but none has entered into duty. The mission was informed that the proposed Upazila set-up already been approved by The Ministry of Public Administration (MOPA) subject to condition that it will be implemented depending on finalizing recruitment rule within the next 5 years.

40. DAE and BADC district-level officers typically travel 8-10 days in the field and their upazila officers 15-17 days in average.

G. FAO in Bangladesh

41. FAO Representation in Bangladesh is the workplace of a total 222 employees, including regular programme staff, national and international consultants/experts as well as administrative and support staff. Apart from the main office in Dhaka, FAO has six additional project offices in the capital embedded in the Ministry of Food, Ministry of Environment and Forestry, Institute of Public Health, Bangladesh Food Safety Authority and the Livestock department. FAO Bangladesh works across the following key areas: food security and nutrition, food safety, sustainable and efficient food and agriculture systems, rural poverty reduction and livelihoods' resilience. FAO Bangladesh has built a forty-year long close partnership primarily with MoA but also with other Ministries relevant to its mandate and development partners active in Bangladesh. FAO is recognized as the leading agency in the promotion of enhanced, sustainable and climate-smart agricultural technologies, methods and practices. See more details on FAO Bangladesh, its programmes and partnerships at: http://www.fao.org/bangladesh/fao-in-bangladesh/our-team/en/.

H. Implementation arrangement

42. **Project governance**. The overall responsibility for SACP will be assumed by the Ministry of Agriculture (MoA), which is the Lead Project Agency. The Project will be implemented under the overall direction of a **Project Steering Committee (PSC)** chaired by the Secretary of MoA and encompassing representatives from the related ministries such as MoF represented by ERD, line agencies and other stakeholders that are related to the Project. The PSC will evaluate and approve annual work plans, reports and budgets, and provides directives on strategic aspects of the implementation management.

43. The overall responsibility for SACP will be assumed by the Ministry of Agriculture (MoA), which is the Lead Project Agency.

44. **Inter-department coordination and Project Office**. Mechanism and efficiency of inter-department coordination between DAE, DAM, BADC and BARI were further reviewed by the mission and an assessment of institutional capacities[41] was undertaken in this regard based on the project background paper No 1. The mission concluded that the four agencies are under the same MoA and they had collaborated in management and coordination of other projects. Inter-department coordination is maintained as part of the Ministry's organizational activities, as well as under the management framework of GAFSP-IAPP (2010 – 2016), that involved DAE, BADC, BARI and other

[41] The assessment will be attached to the Final Design Report as working document.

departments. Ongoing World Bank and IFAD-assisted NATP-II also involves inter-department coordination.

45. **Project Steering Committee (PSC).** The Project will be implemented under the overall direction of a Project Steering Committee (PSC) chaired by the Secretary of MoA and encompassing representatives from the ministries such as ERD, line departments that are related to the Project. The PSC will evaluate and approve annual work plans, and provides directives on strategic aspects of the implementation management.

46. **A Project Implementation Committee (PIC)** will be formed to provide technical guidance and bring in synergy with stakeholders and partners other than the MoA. The committee will be chaired by the Additional Secretary (PPC) and it will be composed of Project Director, Component Directors and Project Coordinator of BARI, one PO from the IFAD-assisted projects in the Ministry of Agriculture, representatives of the MOA, Planning Commission, ERD, IMED, selected leading private firms and trade associations, and IFAD and FAO country offices. The PIC will play the role of technical exchange platform and synergy building among different development projects, where good practices and lessons learnt can be drawn to support the SACP implementation at operational level, and shared for cross-benefits.

47. The project structure of operational management and coordination will be established along the DAE vertical structure from central to the Union, with DAE, DAM, BADC, and BARI participation at applicable levels where available, and managerial and technical officers appointed from respective agencies. The project will fund Operational Support Teams (OST) at both central and district levels to support the Project Office and District Coordination Units (DCUs). DAE SAAOs and Marketing facilitators engaged by DAM will be the key contacts in reaching the farmer groups, with help of lead farmers selected among farmer groups.

48. ***At central level*, the Project Office** proposed for SACP will pay special attention to the leading functions of DAE and coordination among implementing agencies. Component Directors from principal implementing agencies namely DAE, DAM and BADC, and Project Coordinator from BARI will be supported by an operational support team of externally recruited experts whose positions are funded by the Project.

49. The PD's responsibilities are summarized as follows:

(a) Ensure that the project strategy is applied through the implementation of all activities,

(b) Coordinate the programming of planned activities under the Project,

(c) Assume the inter-project coordination with the ongoing IFAD-assisted projects,

(d) Prepare and consolidate AWPBs,

(e) Coordinate the timely and proper implementation of approved AWPBs by each of the implementing line agencies,

(f) Ensure sound financial management of the project and consolidate project-related budgets, statements of expenditure and progress reports,

(g) Ensure timely project M&E and progress reporting,

(h) Preparing withdrawal applications,

(i) Ensure the undertaking of the annual auditing of the Project, and

(j) Other mandates and tasks that the Government and IFAD agree to assign

50. **PO staffing.** The Project Office will be staffed both with government-seconded officers and by externally recruited Operational Support Team.

51. **Government-seconded officers** will fill the following positions: Project Director, four Component Coordinators respectively from DAE, DAM and BADC and BARI, and one Senior M&E Officer

52. **An Operational Support Team (OST)** will be included in the PO and consultant specialists will be recruited through external and open process. The OST will be composed of one Project Management Specialist, one Financial Management Specialist, one Procurement Specialist and one Procurement Assistant, one M&E and KM Specialist, five Accountants (one supporting the PD, and four supporting respective implementing agencies), three Technical Component Coordinators, one Gender Development and Safeguard/Governance Specialist, and other support staff where required.

53. ***At district level*, a District Coordination Unit (DCU)** will be established as technical hub and composed of one lead technical officer from each of the District DAE, DAM, BARI and BADC, and other necessary staff required in all the project districts. The DCU will be embedded in the respective District DAE office. Under the over direction of the Project Director in the Project Office, the DCU will be led by the Deputy Director of District DAE and it will be responsible for coordination of the project activities implemented by the district project line agencies and/or other contracted service providers, ensuring operational coordination through the structure of upazila and union offices to the grassroots level, ensure the timely and operational functions in the areas of project financial management, M&E and KM, procurement support and follow-ups, at its own level and the lower levels. It will collect physical and financial periodic progress reports from the involved implementing agencies, maintain district consolidate records, prepare reports and deliver them to the Project Office. Other responsibilities include:

(a) Overseeing work of executing agencies and service providers and the selection of the target groups that will participate in project activities;

(b) Facilitating district and lower levels' participatory planning activities to determine which activities will be implemented in which communities;

(c) Reviewing and recommending to the PO the community-level implementation work plans prepared by the line agencies;

(d) Coordinating the involvement of district technical agencies and their grassroots-level extension, NGOs, private sector players, as well as farmers' groups; and

(e) facilitating liaison with target communities, assisting with the collection of M&E data, and documentation of project activities.

54. **Upazila and Union Offices' Participation**. DAE offices at Upazila and Union will participate in extending the operational coordination from the DCU to the target groups. Upazila Agricultural Officer and Union Sub-Assistant Agricultural Officers (SAAOs) will be the focal persons for the field implementation. Similarly, BADC's upazila Sub-Assistant Engineers will participate in field implementation.

55. DAM will engage through outsourcing Marketing Facilitators at upazila level to work with the farmer groups in the unions.

56. In each project union, three lead farmers will be selected from the selected farmer groups and they will be engaged on a basis of daily basis remuneration in accordance with actual day (s) occurred, to support the field work of upazila officers of DAE, BADC and DAM marketing facilitators.

57. **Farmer Producer and Marketing Groups** are the entry point for SACP implementation. The project strategy and activities are geared towards ensuring that, by the end of the Project, farmer groups grow into more professional players in targeted value chains, and some of them graduate into production and marketing cooperatives. DAE SAAOs, BADC Sub-Assistant Engineers and DAM-engaged Marketing Facilitators will work to reach the target farmers and their groups with assistance from the engaged lead farmers, mainly in facilitating the identification of their priority needs and connecting them to the support by the Project, delivering project messages, supporting farmers

groups and communities to set up better organisations and structures in value-added production enhancement and post-harvest management, collecting performance data for transmission to the DCU through DAE Upazila and Union offices, and providing feedbacks on performance of service providers.

58. Implementation responsibilities. Component-wise lead implementation agencies are as follows:

- DAE for component 1,
- DAM for component 2,
- BADC for component 3, and
- BARI will support the three implementing agencies with researches linked to areas of interventions identified under the three technical components.

59. Options will be explored to link the benefit M&E system with the project management M&E system (which will be in line with IFAD's revised results and impact management system (RIMS)). Such linkage will avoid duplication of data collection and improve the possibility of attribution of results to project activities.

60. **Country Programme Support Unit (CPS unit)**. In the perspective of a country Programme Support unit (CPS) aiming at improved cost efficiency for the Country Programme management, capacity building is foreseen and detailed programming will be led by the ERD. The SACP will actively participate in this in-country initiative.

61. In addition, the operational modalities under the project management component, SACP will participate in investing in the establishment of a Country Programme Support unit (CPS unit) for the overall Country Programme in Bangladesh. The potential tasks are the following: facilitate cross-learning with other on-going IFAD project implementing similar activities to accelerate start-up; support knowledge generation and sharing across IFAD financed projects including annual KM events; support on-going IFAD financed project in preparation of project completion, MTR and design; support weak performing project through staff-sharing and technical assistance in respective areas. The staffing of the CPS unit is to be finalized with ERD and MoA, as its reporting line.

62. This Joint Technical Assistance Delivery Mechanism aims at providing Project Management Units with demand-driven support services in areas of common interest, with a view to improve project performance and strengthen coherence and coordination between the projects. It has four specific objectives:

- Harmonising approaches and procedures across projects and ensuring their alignment on national and IFAD procedures;
- Sharing knowledge generated by the projects, between the projects, with Implementing Agents and other IFAD partners nationally and internationally;
- Strengthening the capacities of project teams in areas of common interest; and
- Making economies of scale by pooling resources to the benefit of a group of projects.

63. The CPSU will provide technical support services in three key areas: M&E, Knowledge Management and Communication, and Financial Management. However, the design of this mechanism is flexible enough to respond to project needs in other technical areas as they arise and jointly identified by IFAD financed projects.

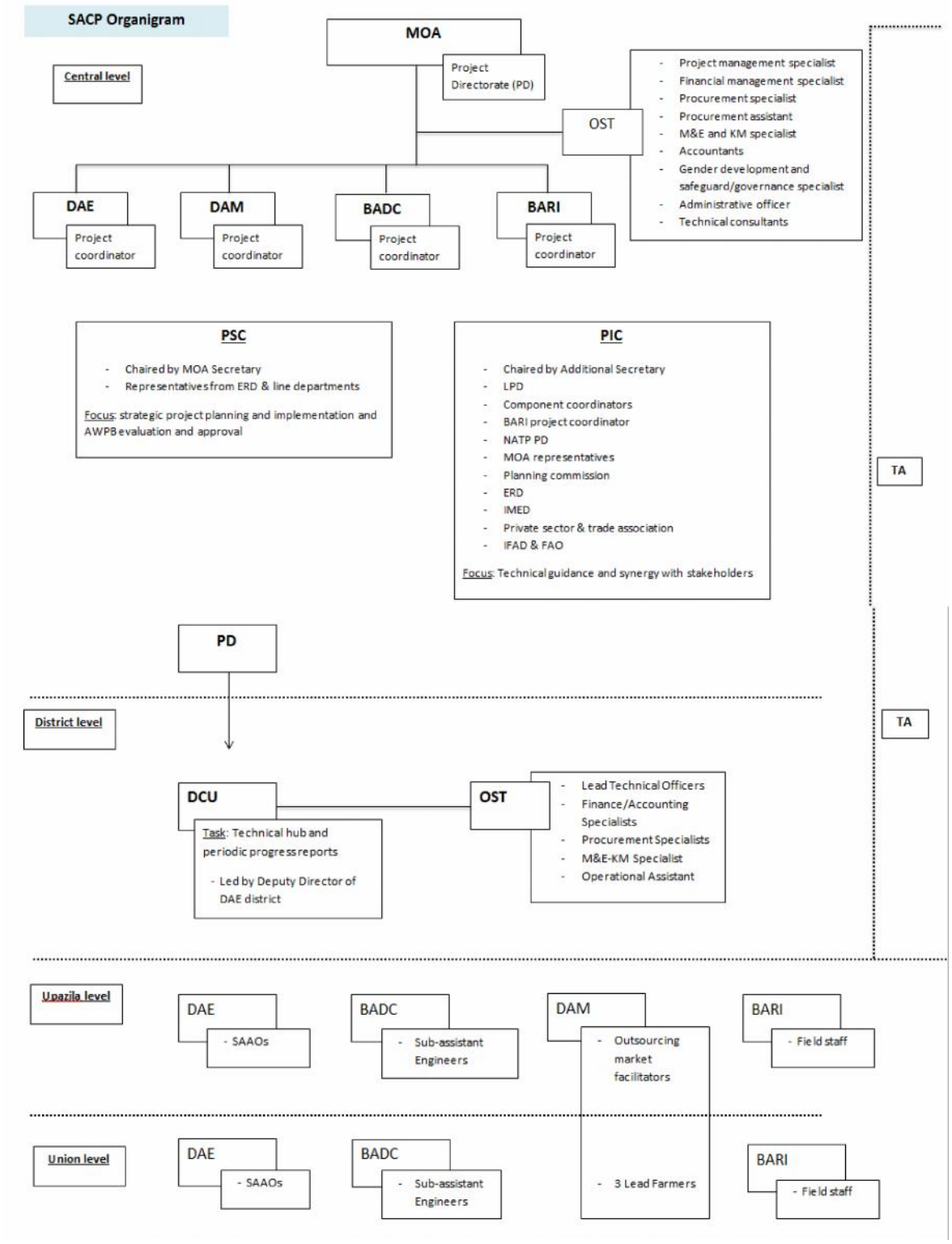
64. The discussion on the modalities and responsibilities of the PSU will be further reviewed jointly by IFAD, ERD, MoA and other involved ministries and agencies in a bid to ensure ownership and sustainability.

65. Support to new project design and start-up. The future CPSU team will also assist new Project Directors and staff in: (i) setting up their M&E/KM system, including SIMES; (ii) organising

baseline studies; (iii) setting up a financial and procurement management system meeting IFAD and GoB requirements; (iv) building the capacities of new staff, particularly with regard to M&E, KM, communication and financial management.

66. The main lead partners as implementing agencies of project key interventions are as follows:

#	Subcomponents	Implementing Agencies
1.1	Assessment of HVCs and group mobilization	DAE, DAM
1.2	Demand-driven research	BARI
1.3	Extension Service for smallholder farmer on HVCs	DAE
1.4	Institutional support for research and extension	DAE, BADC
2.1	Capacity building of farmer marketing groups	DAM, DAE
2.2	Post-harvest and processing investments	DAM
2.3	Development of food safety measures along the value chain	DAM, DAE
3.1	Sustainable surface water management	BADC, DAE
3.2	Institutional support for Capacity Building	DAE, DAM, BADC, BARI
	TA	DAE, FAO


SACP Organigram
Central level
MOA
Project Directorate (PD)
OST
- Project management specialist
- Financial management specialist
- Procurement specialist
- Procurement assistant
- M&E and KM specialist
- Accountants
- Gender development and safeguard/governance specialist
- Administrative officer
- Technical consultants
DAE
Project coordinator
DAM
Project coordinator
BADC
Project coordinator
BARI
Project coordinator
PSC
- Chaired by MOA Secretary
- Representatives from ERD & line departments
Focus: strategic project planning and implementation and AWPB evaluation and approval
PIC
- Chaired by Additional Secretary
- LPD
- Component coordinators
- BARI project coordinator
- NATP PD
- MOA representatives
- Planning commission
- ERD
- IMED
- Private sector & trade association
- IFAD & FAO
Focus: Technical guidance and synergy with stakeholders
TA
PD
District level
TA
DCU
Task: Technical hub and periodic progress reports
- Led by Deputy Director of DAE district
OST
- Lead Technical Officers
- Finance/Accounting Specialists
- Procurement Specialists
- M&E-KM Specialist
- Operational Assistant
Upazila level
DAE
- SAAOs
BADC
- Sub-assistant Engineers
DAM
- Outsourcing market facilitators
BARI
- Field staff
Union level
DAE
- SAAOs
BADC
- Sub-assistant Engineers
- 3 Lead Farmers
BARI
- Field staff

Appendix 6: Planning, M&E and learning and knowledge management

1. **Planning, M&E, learning and knowledge management**. Results-based management approach will ensure that all processes and activities of the project are in line with the project goal, objectives and expected outcomes. As part of this approach, the integrated monitoring and evaluation (M&E) and knowledge management (KM) system will be developed in accordance with IFAD guidelines and government frameworks. Planning, monitoring and evaluation will be results-oriented to enable tracking of progress towards the project outputs, outcomes and sustainability.

2. **Planning**. The SACP will apply a results-based management approach which establishes a solid linkage between planning (including resource allocation), implementation, monitoring and evaluation. This approach will ensure all processes and activities of the project are in line with the project goal, objectives and expected results.

3. The project will be implemented in 11 districts covering 30 upazilas with activities implemented by the Lead Agency with the existing management and coordination structure at DAE central level and Coordination Unit (CU) at district level. In addition, activities will be directed at multiple stakeholders, including landless, marginal, small farmers as well as other actors along the value chain. As the project will involve with several implementing partners including DAE, DAM, BADC, and BARI, this complexity affects project management and must be dealt with in an effective way to reduce bureaucracy and unduly lengthy planning and reporting processes.

4. **Annual Work Plan and Budget**. The project AWPB will be a basis for implementation and should clearly describe the strategic direction of the project for the coming years by resenting a budget estimate, the expected results under each component and how these results would be achieved with risk analysis if any. The preparation of AWPBs will be jointly conducted by the project management in consultation with local implementing partners and beneficiaries where relevant. A participatory annual planning process with stakeholders will be set up to ensure the bottom-up feedback on community needs, priorities, contextual opportunities and limitation.

5. In preparing the first AWPB, the Project Management should be aware of available budget and the amount of Initial Deposit released in order to prioritize critical investments identified. It would be necessary to anticipate the following project fiscal year's budget to avoid shortage of funds available for the succeeding year. Counterpart matching funds should be secured and accounted in the AWPB.

6. In preparing the AWPB, narrative presentation should be concise and precise; spreadsheet tables and schemas should be used where needed to illustrate targets, achievements, costs and financing.

7. An AWPB primary consists of seven parties (chapters), which first update the past achievements with focus on the previous year's, then address the projections for the upcoming fiscal year:

(a) Update on past achievements

(b) Narrative introduction

(c) Summary of physical and financial Achievements (N/A for PY1 AWPB)

(d) Projections for the upcoming fiscal year:

(e) Summarized presentation by components

(f) Detailed presentation by components

(g) Cost and financing

8. The AWPB along with procurement plan will be drawn up by the Project Office with the supervision of the Project Director and the support of M&E and Finance units and technical staff, in consultation with DCUs, implementing partners and stakeholders including beneficiaries (e.g. farmer groups and women) where relevant. The PO will prepare draft consolidated AWPB for each Fiscal Year, based upon district level plans and AWPBs prepared by each implementing agency for their respective section of the Project implementation. Each draft AWPB will include, among other things, a detailed description of planned Project activities for the relevant Project Year, the sources and uses of funds there for and updated the procurement plan.

9. The PO will submit a draft consolidated AWPB to the PSC for its approval no later than 90 days before the beginning of the relevant Fiscal Year. Once approved, the PO will submit the draft AWPB to IFAD for comments and approval, no later than 60 days before the beginning of the relevant Fiscal Year.

10. The PD, DCU, operational support team and related implementing agencies will adopt the AWPBs substantially in the form approved by PSC and IFAD. The PO will provide copies thereof to IFAD, prior to the commencement of the relevant Project Year. If required by IFAD, the PO will propose adjustments in the AWPB with the approval of the PSC. Such adjustments will be effective upon approval by the IFAD. The AWPB will be informed by an assessment of current implementation progress and will describe the strategic direction of the project for the coming year along with results expected (targets) under each component and how those results will be achieved. This will be complemented by a resource plan, budget and risk analysis for each result. The AWPB will also include plans for training and technical assistance, M&E and procurement for the year in question.

11. **Monitoring and evaluation**. The integrated Monitoring and Evaluation (M&E) and Knowledge Management (KM) system will be developed in accordance with IFAD guidelines and government frameworks. It will have with three main objectives as following:

(i) *monitoring results*: it will enable the tracking project outputs and outcomes, within farmer groups and communities, between genders, age groups and different social groups.

(ii) *implementation guiding and policy dialogue*: the information and analysis of data will support timely results-based management at all levels to develop profitable and sustainable activities and to adapt strategies accordingly. It will also support policy decision making of MOA to better respond to the challenges of agricultural commercialisation in the Southern Bangladesh.

(iii) *knowledge sharing and scaling up of good practices*: the integrated M&E and KM system will capture lessons, shortcomings for risk management, good practices, successful innovations and technologies options or scaling up.

12. **Strategic principles.** The integrated M&E and KM system's features will be: (i) *open and easily accessible*, i.e. information and knowledge should be available to all stakeholders and not restricted to project or MOA staff; (ii) *participatory and accountable*: the process of planning, monitoring and knowledge dissemination will involve associate project stakeholders and beneficiaries with two-way communication i.e. upward (to and from government and IFAD) but also downward (to and from project stakeholders and target groups) and horizontal (with other projects); (iii) *focused on analysis, learning and sharing* in support of decision-making and policy dialogue, and not merely on data production and consolidation; (iv) *harmonised* with and connected the government's relevant information systems such as *Access to Information* (a2i) Programme and to IFAD country portfolio M&E system; (v) *inclusive* to allow women, poor and marginalised groups participate in the system; (vi) *strengthening*: building capacity and better respond to the people needs and market demand.

13. **Purpose and scope**. The Monitoring and Evaluation System will be developed as a tool to ensure the efficacy of the project in delivering results and in bringing about important learning to inform the replication and scaling-up agenda of the government and other development partners. For this purpose, the M&E system will ensure the collection, analysis and communication of information

on project progress and effectiveness for results-based management as well as provide for carrying out thematic studies and evaluations of pilot initiatives that can inform decision-making and risk management at both local and national levels.

14. **Data collection and monitoring reporting framework**. The participatory M&E and KM system will be decentralized from the Lead Agency at central level to Coordination Units at district, upazila and union levels under the guidance of a Project Director with the support from TA and in consultation with project stakeholders. It will incorporate regular data collection and feedback from beneficiaries and implementing partners. The data will be collected and analyzed at upazila and district levels for both outputs and outcomes to the extent possible prior to the compilation and in-depth analysis by the Lead Agency at central level. The SACP management will report to IFAD and as well downstream to implementing partners and beneficiaries.

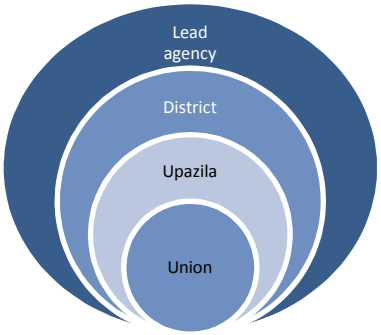


Figure: Data collection level

(i) Union and Upazila level, information will be gathered by SAAO and market facilitators, and concerned field-level staff of BARI and BADC. To avoid multiple counting of beneficiaries, activities will be recorded in a master beneficiary database or by household;

(ii) District level (DCU), concerned M&E officers will provide guidance and support to the upazila, and will assemble data on the achievements of their respective components. The data collected at this level will also analysed to identify lessons, good practices and bottleneck which will feed into the SACP MIS system monitored at the central level;

(iii) At central level (PD), information will encompass overall project performance as periodic progress reports (semi–annual and annual) to be submitted to IFAD. It will be the responsibility of the Project Director and M&E Officer.

15. **Human resource capacity for M&E**. The project's M&E system will lead by the M&E Specialist in the operational support unit under the supervision of Project Director at the central level. It will be also supported by M&E officers based at the DCUs who will be the day-to-day performing data collection and periodic qualitative and quantities analysis. At the field-level, SAAOs under DAE, Market Facilitators under DAM and concerned staff under BARI and BADC will directly collect information and interact with beneficiaries and stakeholders. Relevant training and capacity development specifically on aspects relevant to the project M&E (e.g. participatory monitoring and evaluation, use of information technology in M&E, risk monitoring, analytical assessment, etc.) will be availed of as required and in line with the AWPB training plan and the capacity development plan of the M&E manual.

16. **RIMS and logframe.** The SACP logical framework will be used as roadmap for annual planning, monitoring and evaluation. In line with IFAD's revised Results and Impact Management System (RIMS), expected results will be measured at two levels; outputs and outcomes on a semi and annual basis. Core indicators will be integrated in the logical framework from the project design and will be monitored through its participatory M&E system. The project logframe will be linked to the economic and financial analysis.

17. Data will be collected against both qualitative and quantitative indicators disaggregated by gender, age and other socio-economic status to the extent possible so as to enable a proper assessment as to whether the project is reaching its intended target beneficiaries, poor households, smallholders, women and vulnerable groups. Furthermore, the M&E system will collect and analyse information about project outreach, effectiveness of the targeting strategy and target group specific benefits, environmental impact and vulnerability and cost-effectiveness of implemented activities. This requires strong coordination and collaboration among staff at the lead agency and implementing partners. IFAD is currently revising RIMS and if possible, SACP will align with the updated version of the system**.**

18. **Linkage SACP with COSOP**. SACP will identify relevant project indicators to COSOP level. In addition to the logframe and RIMS indicators, the project will report on the COSOP indicators to IFAD country office (CO) in Bangladesh on a semi-annual basis. The results will be consolidated and analysed at the country level to integrate into excel and on-line COSOP monitoring and evaluation system. For this purpose, the project will use SIMES for data storage and analysis. The COSOP monitoring system will be used to track and improve the capacity of all projects in achieving the strategic objectives mentioned in the COSOP.

19. **Key elements of the project M&E system** are as follows: (i) a practical M&E manual detailing objectives, scope, clear reporting structure, staffing, capacity building plan, roles and responsibilities, budget and M&E-related activities with timeframe; (ii) annual M&E plans; (iii) IFAD RIMS reporting: quarterly update on the achievement of each indicator set in the project logframe, even in the first few years of implementation when higher-level results are not yet expected; (iv) Management information system (v) baseline, mid-term outcome and completion studies; (vi) annual outcome surveys; (vii) annual and semi-annual reports to be submitted to IFAD; (viii) risk assessment and exist strategy; (ix) thematic studies and (x) field visits and joint implementation reviews.

20. **Management Information System (MIS).** SACP will develop a Management Information System (MIS) to support data management. The project MIS will track and regularly update financial and technical data on project outputs and outcomes, lessons learnt, good practices, and other important sector information to analyse project performance along with appropriate formats such as dashboards, charts and maps. A computerized MIS will be designed to allow decentralized inputting of data and centralized analysis and storage can serve as a useful tool for project management and other relevant stakeholders. The MIS will be under the responsibility of the Senior M&E Officer.

21. An ICT-enabled data collection tools (possibly GIS mapping, mobile phones or tablets, standard IFAD Monitoring and Evaluation system (SIMES) excel database, and online monitoring platform) will also be developed to timely monitor on-going interventions and feed data into the MIS. The MIS will be designed and set up by an MIS expert upon assessment of information needs for decision making at various levels. The MIS processes data into information useful for the various levels of decision-making in the project, including also feeding project-specific data into the broader management information system of the *Access to Information* (a2i) Programme of Prime Minister's Office which is currently developing an agricultural service portal and e-services.

22. *Analysis*. Data will be consolidated and analysed at district and central level so as to provide information on the performance of the various components, detect problems, identify possible solutions and track good practices to share through the knowledge management system.

23. *M&E manual* will be developed immediately upon start-up detailing the project results chain; the M&E framework; the scope, organisation and contents of the M&E system; roles and responsibilities; how data (sex- and age-disaggregated where appropriate) will be collected, analysed, reported, used and otherwise managed (tools and methods); a timeline for M&E related activities; staffing and capacity building plan; budget; etc.

24. *Annual M&E plans* will be elaborated and submitted alongside AWPBs. The annual M&E plans will describe the specific M&E related activities taking place during the year, including day-to-day monitoring, any thematic studies, annual outcome survey or other methods for assessing results, approach for extracting lessons and knowledge management activities.

25. *Impact* will be assessed on the basis of methodologically sound baseline, mid-term and completion surveys which use the same approach so as to allow a meaningful before, during implementation at completion in order to carry out a comparison analysis. These surveys will include a comparison group so a difference-in-differences analysis can be conducted at the end of the project to strengthen the assessment of effectiveness and impact. The surveys will elicit data at the impact and outcome level according to the project logical framework and RIMS indicators as well as socio-demographic data and other relevant information for targeting, planning and evaluation. It is essential

that a baseline study will be carried out immediately upon start-up in order to inform overall project planning, ensure benchmarks and realistic targets are set for outcomes and impact. The baseline study will include a household survey to assess socio-economic level of beneficiaries and group beneficiaries in different sub-target groups. It will also assess the knowledge, attitude and behaviour of farmers. The Mid-term and impact evaluation will follow the same methodology as the baseline study to allow meaningful comparison, although the scope of the impact evaluation may be broadened to cover other aspects of project relevance, effectiveness, efficiency, impact and sustainability to adequately inform the project's completion report. A midterm review will be conducted in year three or half way of project implementation. The review will assess the relevance (i.e. internal and external validity of project design), effectiveness (progress towards targets), and efficiency (funds disbursed vis-à-vis achievements) of the project. Any suggested changes in design, implementation approach, cost or targets should be assessed and endorsed by IFAD.

26. *Outcomes* will be monitored regularly through the logical framework, MTR assessment and thematic outcome surveys to ensure the project is on track vis-à- vis results and allow timely decision-making if results are not being achieved as expected. As per the theory of change, there may be several levels of outcomes. Some can be measured by implementing partners on the ground as part of their day-to-day reporting, while other outcomes may need to be captured through AOSs. It is relevant to start outcome monitoring at the time of the baseline survey and continue on an annual basis to allow tracking of the validity of the proposed theory of change and results chain. The project results chain is a description of the project logic according to the theory of change which details how results are expected to derive from the implementation of project interventions. This will allow the project to describe progress according to the logframe and thereby inform project management of the likelihood of reaching development objectives and outcomes.

27. *Output* monitoring focuses on the proximal results of activities. The main tool for this is the AWPB and regular progress reports given that it also describes the results which planned activities are expected to achieve. Concurrently, AWPB progress monitoring involves tracking implementation of activities and budget expenditure. This allows the integration of physical and financial reporting with ensuing cost- effectiveness and efficiency analyses. Each implementing partner contributes to output and AWPB progress monitoring reports submitted to the relevant line agencies and compiled at the lead agency in line with the overall SACP M&E framework. Progress monitoring will start at the field level. Project beneficiaries and field-level implementers will be the first link in the chain of reporting, which subsequently continues to union, district levels of implementing agencies and to the central level at the lead agency and IFAD on a quarterly, semi-annual and annual basis respectively.

28. *Outreach* will be measured as the number of people, households and groups (farmer groups) benefitting from project interventions disaggregated by sex, age and socio-economic groups where possible. Primarily this will be participants of farmer production and marketing groups, but additionally, a strategy must be developed for how to calculate the beneficiaries from water management infrastructure and other activities. The lead agency will explore the possibility of developing a register of direct beneficiaries to avoid double counting when outreach is being assessed. Indirect beneficiaries are defined as people benefitting from project services (e.g. through improved food safety along value chain services) while not themselves being in direct contact with project implementers. Targeting effectiveness will be assessed in an on-going fashion through tracking of results by sub-target groups including the different socio-economic groups (landless, marginal, smallholder, medium and large farmers) as well as women and youth. The needs and realities of these groups are different, project interventions will be different and following on this, measurement of results must be able to clarify whether benefits are accruing to all sub-target groups effectively.

29. *Cost-effectiveness* of interventions and of the project overall will be assessed in two ways: (i) day-to-day tracking of AWPB and procurement combining physical and financial progress; (ii) as part of thematic studies of specific interventions; and finally as an end-of-project assessment of the

cost of bringing people out of poverty (cost per beneficiary), of increased HVC productivity and other core aspects of the project as per the development objective and core outcomes.

30. *Risk assessment.* The project logframe includes a column on assumptions that are highly relevant to monitor for assessing the validity of the results chain of the project and to manage risks related to project outreach, targeting, effectiveness and sustainability. At the same time, new risks may be identified in connection with AWPB preparation and should be included in the risk monitoring matrix.

31. *Thematic studies* will be carried out as per need and relevance for the evaluation of pilot initiatives, assessment of targeting effectiveness, gender equality and women's empowerment etc.

32. *Field visits and joint implementation review missions* will be carried out on a regular basis by project staff, IFAD supervision teams and government representatives. Qualitative data will be sought on these field visits to complement quantitative data in the performance monitoring processes. Missions will validate results reported through RIMS and in general.

33. **Theory of Change (ToC).** Learning from the experiences of other IFAD-funded projects in Bangladesh, there is a need to develop a more comprehensive and reliable M&E and KM system whereby the project is able to show the outcomes and results intended by the interventions. Past experiences show that often M&E is used in the projects for accountability, remains at project level, focuses only data compilation not much on qualitative analysis and nor for learning. As a result, the M&E system often fails to produce data around the intervention's ultimate goals/ desired changes.

34. Thus, learning from these experiences, the project will use the ToC model together with M&E tool. The ToC model will provide a road map defining where the project aims to reach and how and how often the targeted changes and assumptions can be monitored by the Project Office and District Coordination Units (DCUs) and operational support teams. In addition, the ToC model also reduces the amount of data and information to collect by applying a reflective and systemic M&E and helps in a more realistic planning. The process will be participatory whereby project staff, project stakeholders and beneficiaries are involved in developing the theory as well as in periodical revisions and updates, at least once in every six months.

35. **Learning and knowledge management.** The core relevance of the M&E system is in the use of the information for planning and decision-making as well as accountability. An integrated knowledge management and communication (KMC) strategy will be developed in line with IFAD policy on KM and built on three core pillars of knowledge management: people, process and technology. It will include information management, monitoring and evaluation, innovation and experimentation, internal and external communication and learning. The previously mentioned MIS and M&E system will be a core part of this strategy and will be sources of information from which key lessons need to be extracted and appropriately disseminated.

36. *Knowledge tools and platform.* Similar to the overall and annual M&E plans, the project will develop KM plans and incorporate KM into the M&E plans. The primary aspect will be internal knowledge management but given the proliferation of interventions related to development of the high value crops (HVC) production and marketing in Bangladesh. Progress reports will include sections on lessons learned, challenges and best practices and these must be captured by project management, analysed across the project and communicated for improved implementation. Some vehicles for this communication will be quarterly review meetings with implementing partners, planning workshops, and newsletters. Through this process attention will be put on ensuring that lessons are used in decision-making.

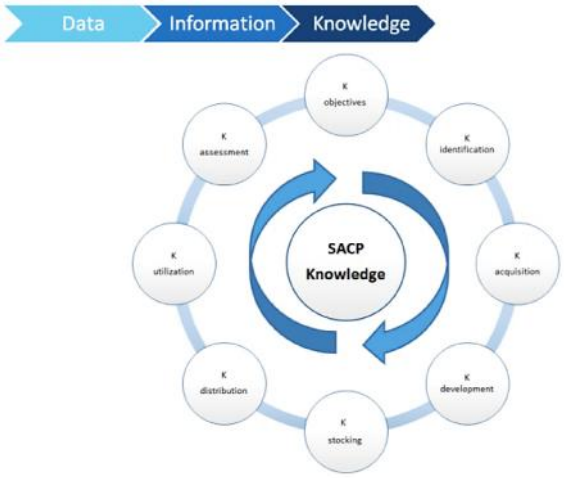
37. **Multi-stakeholders' platform** in each region will provide a venue for smallholder farmers, institutional buyers, private sector and relevant stakeholders to better facilitate input and output market linkages and to discuss industry problems and constraints in a holistic manner thereby ensuring that the interests of all stakeholders are represented and protected. In addition, DAE together with other implementing agencies will organize monthly coordinating meeting to share the

achievements and innovations, successes and (potential and current) problems, lessons, good practices as well as possible solutions including non-project based solutions and policy issues.

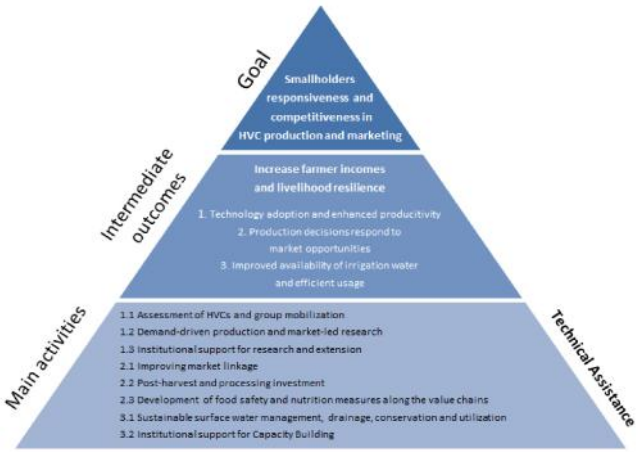
38. A project website will be developed at early stage of implementation to be used as a knowledge sharing platform and also linked to IFAD communication channels. Learning flows will be developed in KMC strategy and used on a regular basis, including planning workshops, stakeholder review meetings, knowledge products and communication materials to be shared with all stakeholders. Quarterly review meetings with implementing partners will be organized by project to focus on progress, lessons learnt in terms of challenges and good practices etc.

39. Flowing of information from and to beneficiaries and implementing partners in the field is of utmost relevance in fostering ownership and participation. Another important aspect will be liaising with other development actors, exchanging knowledge and best practices between SACP and other projects will be arranged for lateral knowledge transfer and learning. This might be in the form of exchange visits, bulletins, participating in thematic/innovation enhancement networks and partnerships as well as South-South cooperation. Moreover, SACP will draw from the expertise of and collaborate with the *Access to Information* (a2i) Programme of Prime Minister's Office which is currently developing an agricultural service portal and e-services for the production of relevant knowledge products and communication materials, including press releases, extension materials, and radio spots.

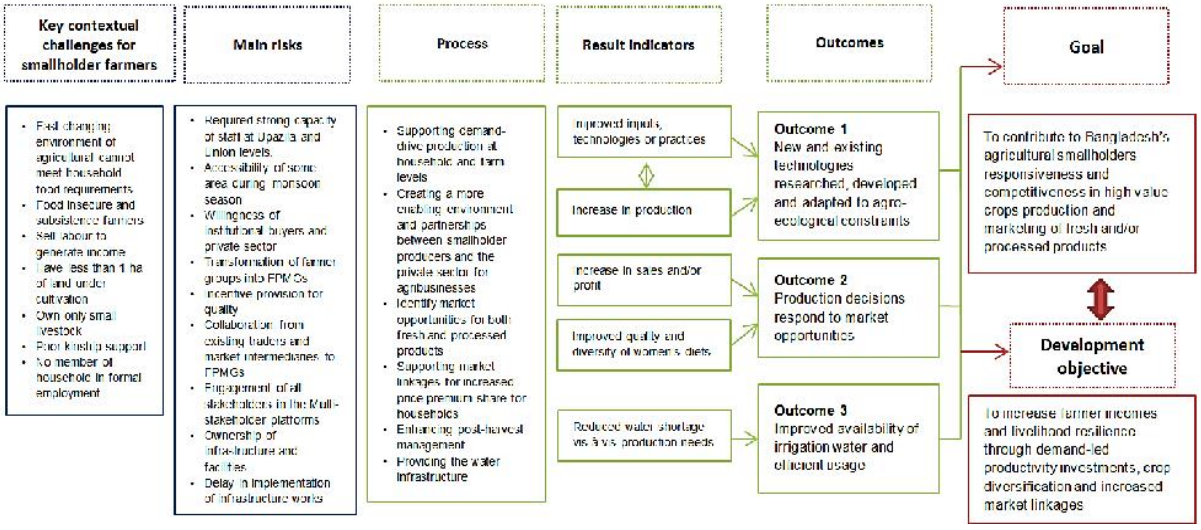
Knowledge Framework



SACP Planning Triangle



SACP Logic Model



Appendix 7: Financial management and disbursement arrangements

I. Financial Management Assessment

40. The lead project agency and the implementing agencies are required to maintain acceptable financial management systems to guarantee an appropriate use of funds and reliability in the financial reporting. A financial management assessment of the Smallholder Agriculture Competitiveness Project (herein referred to as "SACP" or the "Project") was carried out in accordance with IFAD's Guidance Note on Undertaking Financial Management Assessment at Design, issued in 2012. The objective of the FM assessment is to provide assurance that the lead project agency and the implementing agencies will have sufficiently strong financial management systems and controls in place to properly manage, control and report project finances in order to ensure that project funds are used economically and efficiently for the purpose intended. On the understanding that SACP will be implemented by the implementing agencies at applicable levels, the assessment has found the proposed arrangements to be acceptable.

41. The assessed FM risk of the project is considered high as summarized in Table 1.

Public Financial Management and Governance

42. The Public Expenditure and Financial Accountability 2016 (PEFA), assessment indicates that seven performance indicators improved, fourteen remain the same and seven deteriorated since the last PEFA of 2010. Control in budget execution, reporting, accounting and audit still remain weak in Bangladesh PFM.

43. In the second multi-year PFM reform strategy 2016-2021, three important issues have been prioritized. These are: capacity development in revenue mobilization, implementation of the Budget and Accounts Classification System (BACS) and the implementation of a modern information technology system (Integrated Budget and Accounting System iBAS++). Existing initiatives to improve auditing systems and ensure transparency and accountability in government expenditure will be continued. The thrust of the current PFM reform is to build on the past and to strengthen initiatives that have struggled to take hold. Overall, weaknesses remain, particularly in the control environment and tax system, as well as inefficiencies resulting from the fragmentation of recurrent and development budgets.

44. Internal controls and internal audit remain an area of substantial weakness across the PFM system in Bangladesh. The control environment is dependent on detailed financial rules and regulations that outline in great detail internal controls that should be followed for all transactions; however, these are often circumvented by officers themselves to expedite their workloads (PEFA 2016).

45. Manual accounting remains the prevalent practice across Bangladesh public institutions. Annual financial reports are prepared using a combination of IPSAS and Bangladesh Government accounting standards, which accommodate the 'modified-cash' basis of accounting. Initiatives such us the iBAS++ (important element of the World Bank project SPEMP) are being designed to support both cash and accrual basis of accounting and intend to provide transparency and an enhanced control framework to support financial decision-making at all levels of government. A recent World Bank Policy Note reviewed key issues for the successful implementation of iBAS++, such as the capability to be used for

donor funded projects. The implementation of IBAS++ is not expected to be effective in the short term.

46. In terms of government administration, Bangladesh is divided into eight administrative divisions: Barisal, Chittagong, Dhaka, Mymensingh, Khulna, Rajshahi, Rangpur and Sylhet. Each division is named according to the largest city within its jurisdiction, which at the same time serves at its administrative centre. The divisions are composed of 64 districts, or zilas, each run by a Deputy Commissioner appointed by the government. The districts are further divided into 489 sub-districts called Upazilas, which in turn are made up of Unions.

47. Every administrative unit maintains a representation from its line Ministry, with whom consolidates its financial information. The Office of the Controller General of Accounts (CGA) is responsible for compilation and consolidation of Finance and Appropriation accounts of all Ministries, following the accounting principles and procedures established by the Office of the Comptroller & Auditor General (OC&CAG).

48. All financial transactions made under the administrative architecture of Bangladesh are handled by 56 banks widely spread across their entire territory, that operate under the full control and supervision of the Central Bank of Bangladesh. Government transactions are made mainly via checks and cash transactions are not a common practice across government institutions.

Financial Management of the Implementing Agency

49. The implementation of SACP is expected to count with the following strengths in the area of FM: (i) given strong GoB commitment, institutional and policy framework for implementing agricultural development projects; (ii) some of the implementing agencies have exposure to the IFAD´s financial management policies; and (iii) IFAD has co-financed some projects implement by the MoA.

50. The main weakness that the project will need to face is that the implementation will be carried out in eleven cost centres located in the targeted districts. At this level, the FM capacity is very low, and finding trained accountants is very difficult. Therefore, identifying finance staff for the DCUs will be a challenge that the project will need to address effectively. FM training on a continuous basis will also need to be present during the life of the project.

51. The inherent risk of the project is deemed to be high.

Table 1: Key Financial Management Risks and Mitigation Measures

Type of risk	Risk rating	Risk mitigating measures	Residual risk rating
Inherent Risks	High		High
Project Control Risks			

Organization and Staffing Limited capacity of the FM staff, both at the PO level and at the District Level. FM Consultants requires intensive training.	High	From the beginning, the project will reach out to outside expertise, including technical assistance and consulting services with intensive training and close monitoring. **PD** 1 Financial Management Specialist + 2 Finance Assistants **DCUs** 11 Accountants	High
Budgeting DAE follows the guidelines of the Planning Division in preparing the "Development Project Proforma/Proposal" (DPPs) for development projects, which is a detailed budget required for every approved project. This is the basis to prepare the AWPB for each fiscal year on each project component and cost category.	Low	DAE has extensive experience preparing DPPs.	Low
Funds Flow Funds for SACP will flow to designated accounts (DAs) in the Central Bank of Bangladesh under SAFE arrangements. The implementing agencies will maintain individual accounts in local currency to receive funds from the Project Accounts. The projects will minimize the use of cash. However, some expenditure will be incurred in cash where payment by cheques may create complicacy, such as for allowances for trainings, workshops and seminars.	Medium	The DAs (one for the grant and one for the loan) will be administered by the PD, and transfers to the Implementing Agencies will be treated as advances in the financial Statements until its liquidation.	Medium
Internal Controls Due to the change from manual accounting to an automated accounting system, SACP will have to generate the capacity to work on an automated environment. Also, to adapt the GoB provisions to make them suitable for this type of environment.	High	SACP will be required to establish adequate internal controls and procedures in the PIM and in the Financial Manual to guarantee: (a) operations are being conducted effectively and efficiently; (b) financial and operational reporting is reliable; (c) applicable laws and regulations are being complied with, and (d) assets and records are safeguarded.	High

Accounting Accounting records across the institutions of Bangladesh´s government are maintained manually in physical books; in some cases, reporting is performed using Excel, especially when the funds come from donor-funded projects.	High	SACP will procure an accounting software package conforming to international standards during start-up, this will be used by the PO and the four Implementing Agencies. A simplified accounting system will be established at the DCUs. The software will be customized to provide useful information according to IFAD's requirements and International Accounting Standards. Training and regular assistance will be a substantial part of the implementation, not only to manage the software but also to create a capacity in basic accounting principles.	High (the performance will be evaluated after one year of project´s implementation)
Financial Reporting Manual accounting systems limit the reliability and usefulness of financial reporting. Consolidation of financial information from the District offices to the Implementing Agencies and the PO is expected to be an issue at the beginning of the project.	High	Financial Reports will be produced directly from the automated project accounting system (with the capability to report by component and by category of expenditure), and not from any other stand-alone manual or electronic system. Semi-annual (IFRs) will be prepared by the PO and submitted to IFAD within 45 days after the end of each calendar quarter.	High
Internal Audit There is no formal internal audit function in place.	High	Internal auditing will be carried out by private firm twice in the life of the project. The preparation of the audit plan will take into account the different levels and agencies involved in the implementation.	High (the results of the first internal audit will be assessed in terms of quality and pertinence)
External audit All donor funded projects are audited by FAPAD on a yearly basis. Its performance for IFAD co-funded projects, in terms of quality and timelines, has improved in recent years.	Medium	In line with its constitutional mandate, external audit is conducted by FAPAD. This Directorate depends on the Office of the Comptroller &Auditor General (OC&CAG), the supreme audit institution in Bangladesh. To mitigate the risk of late submission, the projects will be required to submit their unaudited financial statements within two months of year end. According to the performance of the project and in addition to the FAPAD audit, it may be possible that IFAD requests the project to be audited by an external audit firm.	Medium
OVERALL RISK	**High**	**RESIDUAL OVERALL RISK**	**High**

52. **Organization and Staffing**. A Project Office, headed by a Project Director deputed from the government service will be created to lead the implementation of SACP. All line agencies such as DAE, BADC, BARI and DAM will be headed by a full-time Project Component

Coordinator on deputation from their respective agency. Support staff will be assigned by the government to ensure the due operational functions of the project.

53. The Finance Unit, at the PO level, will be composed of three full-time staff filled with individual consultants openly recruited: one Financial Management Specialist and two Finance Assistants.

54. The Implementing Agencies, will be composed by Accountants openly recruited. Four in total for DAE, BADC, BARI and DAM respectively.

55. Every cost centre located at the district level (DCUs), will be composed of one full-time staff filled with and individual Accountant openly recruited: eleven district accountants. In larger districts may be necessary to recruit one more Finance Assistant.

56. The duties, responsibilities, lines of supervision, and limits of authority of finance staff will be defined in their ToR and will be documented in the SACP finance manual.

57. **Budgeting**. The lead implementing agency of SACP will prepare a consolidated "Development Project Proforma/Proposal" (DPP) following the guidelines of the Planning Division. DPP cost allocation table and the category wise budget allocation of the financing agreement sets the budget for the entire term of the project. However, detailed budgets and procurement plans for each fiscal year on each project component and cost category, will also be produced to provide a framework for FM purposes, which is also required for the consolidated Annual Work Plan Budget (AWPB). These budgets will be monitored periodically to ensure actual expenditures are in line with the budgets, and to provide input for necessary revisions. The project budget will be included in line departments' overall budget.

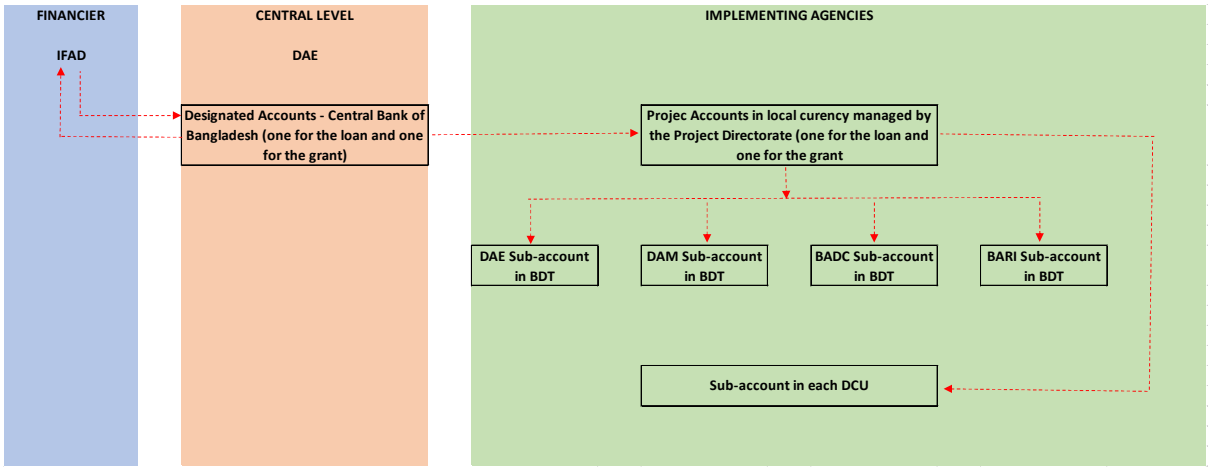
58. The procured accounting software will include budgetary control features that will enable project accurate tracking of actual expenditure on a similar chart of accounts as the budget, and the preparation and review of regular budget monitoring reports.

59. **Funds Flow and Disbursements.** There will be two Designated Accounts at the Central Bank of Bangladesh under SAFE arrangements to receive the funds of the loan and the grant respectively. The DAs will be managed by the PD, and transfers to the Implementing Agencies will be made according to consolidated financial information and approved AWPBs. The project will open two Project Accounts in local currency to receive transfers from the Designated Accounts at the PO level. Also, four project sub-accounts in local currency will be opened for the corresponding implementing agencies, namely DAE, DAM, BADC and BARI to receive transfers from the Project Accounts. A separate sub-account will also be opened for each DCU, if needed to receive transfers from the Project Accounts.

60. The PO will be responsible for transferring project funds to the operating accounts of the Implementing Agencies. These transfers will be treated as advances at the PD, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated.

61. A start-up advance will be provided once the financing agreement has become effective, to facilitate implementation readiness activity, pending satisfaction of the disbursement conditions specified in the financing agreement. The ceiling of the start-up will be agreed upon at negotiations based on a realistic plan.

62. Transfers to entities implementing SACP activities will be treated as advances, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated.



63. **Internal Controls**. SACP will be required to establish adequate internal controls and procedures in the PIM and in the Financial Manual to guarantee: (a) operations are being conducted effectively and efficiently; (b) financial and operational reporting is reliable; (c) applicable laws and regulations are being complied with, and (d) assets and records are safeguarded.

64. At a minimum, the procedures should include the following measures: (a) Reliable personnel with clear responsibilities i.e. segregation of duties; (b) Adequate financial records management system with complete audit trail; (c) Physical safeguard, including use of safe, locks, guards, limited access, and access by authorized persons to provide security for program assets; (d) Independent check, with procedures made subject to random independent reviews.

65. **Accounting**. The accounting policies and procedures of the project will be governed by the Bangladesh Government Accounting Standards under cash basis of accounting, and the existing GoB system outlined in the Project Accounting Manual of the Ministry of Finance. The PO will have the primary responsibility to maintain an adequate FM system across all levels of implementation of the project and to provide accurate and timely financial information to the Government and IFAD.

66. The project will procure and adopt an accounting system package conforming international standards during start-up. In addition, a simplified FM system will be implemented at the District Coordination Units to ensure proper reporting to each of the Implementing Agencies. The project will guarantee the availability of resources to conduct periodic training on the use of the accounting software to strengthen the capacity at the district level.

67. As there have been positive results from the use on an accounting software by LGED which has been recalibrated to meet the accounting and reporting requirement for both government and IFAD, MoA should consider using the same software for SACP, which would provide the Project better value for money.

68. The key project accounting functions for which PO would be responsible are as follows: (i) consolidation of budget preparation and monitoring from the Implementing Agencies; (ii) payments for major eligible project expenditure; (iii) disbursement of project funds to the

implementing agencies as per approved work plan on the basis of 3-month estimated expenditure; (iv) maintenance of books and bank accounts; (v) cash flow management including advances to the implementing agencies; (vi) consolidation of financial reports from DCUs, and (vi) preparation of Withdrawal Application to claim funds from IFAD.

69. The key accounting function for which DCUs would be responsible are as follows: (i) contribution to the budget preparation; (ii) fund requisition to PO on the basis of three months estimated expenditure and approved work plans; (iii) preparation and submission of standard reporting format (fund utilization report); (iv) collection and consolidation of reports from the DCUs together with bank statements; (v) submission of reports to PD.

70. **Financial reporting.** The PO will be responsible of consolidating the financial information from the Implementing Agencies and to prepare semi-annual and annual (audited) Financial Reports (FRs) for all relevant parties. The Implementing Agencies (DAE, BADC, DAM and BARI) will be responsible of consolidating the financial information from the District Coordination Units (DCUs). The FRs will be consistent with International Accounting Standards and the project's Finance Manual. Semi-annual Financial Reports with accurate and updated financial information will be prepared by the PO for submission to IFAD within 45 days from the end of each semester.

71. Financial Reports will be produced directly from the automated project accounting system (with the capability to report by component and by category of expenditure), and not from any other stand-alone manual or electronic system. The PO and the Implementing Agencies will need to have the capacity to record GoB contributions, as well as in-kind contributions of private companies and beneficiaries, if necessary.

72. **Internal auditing**. Will be carried out by private firm twice in the life of the project. The preparation of the audit plan will take into account the different levels and agencies involved in the implementation.

73. Going beyond the financial aspects and transactions, the internal audit will be expected to be carried out under the following key internal audit functions: (i) ascertaining whether the system of internal checks and controls operating within the project for preventing errors and fraud is effective in design as well as in operation; (ii) ascertaining reliability of accounting and other records as well as seeing that accounting methods provide the information necessary for preparation of correct financial statements; (iii) ascertaining the extent to which the project's assets are safeguarded from any unauthorized use or losses; (iv) ascertaining whether administrative and financial regulations of the government and IFAD's requirements are followed; and (v) ascertaining the effectiveness of the system of internal control adopted in preventing, as well as detecting waste, idle capacity and extravagance.

74. The terms of reference for the internal audits will be prepared by the PO and submitted for the IFAD´s no-objection.

75. **External audit.** The Foreign Aided Projects Audit Directorate (FAPAD) of the Office of the Comptroller & Auditor General (OC&CAG) of Bangladesh will conduct an audit of the project's annual financial statements within six months of the end of the fiscal year. The audit will be carried out on a yearly basis and in compliance with the IFAD Guidelines on Project Audits. According to the performance of the project and in addition to the FAPAD audit, it may be possible that IFAD requests the project to be audited by an external audit firm.

76. External auditors will be required to express their opinion based on IFAD Guidelines on Project Audits. A detailed management letter containing the assessment of the internal

controls, audit findings, update on previous audit observations, compliance with IFAD Financing Agreement covenants and suggestions for improvement will be prepared and submitted together with the audit report.

77. **Supervision and review on FM.** Shall be undertaken at least annually, usually as part of the IFAD annual direct supervision, and with additional support missions as necessary during project implementation to ensure that the financing proceeds are used for the purpose for which they were granted, which may take two weeks at the most. The scope of the supervision will be carried out in accordance with IFAD's Guidance Note on Undertaking Financial Management Assessment at Supervision, issued in 2015.

Appendix 8: Procurement

1. **Introduction**. Public Procurement Act 2006 (PPA) and the Public Procurement Rules 2008 (PPR) are the two legal documents that deal with public procurement in Bangladesh. The PPA and PPR disseminate the purpose and principles of Bangladesh's public procurement and procedural requirements. It has contained good international practices, including: (a) non discriminatory selection of bidders; (b) wide advertising of procurement opportunities; (c) public opening of bids in a single location; (d) disclosure of all contract awards above a specified threshold on the CPTU's website; (e) clear accountability for delegation and decision making; (f) annual post-procurement audit (review); (g) sanctions for fraudulent and corrupt practices; and (h) review mechanism for handling bidders' protests.

2. The PPA and PPR allow for advances in technology by providing for electronic processing in public procurement in Bangladesh. The system for doing this is the E-Government Procurement (e-GP) system. E-GP is a lone web portal from where, and through which, Procuring Agencies and Procuring Entities, can perform their procurement related activities using a dedicated secured web based dashboard. e-GP is hosted at the CPTU Data Centre, and it's use is governed by the E-Government Procurement (e-GP) Guidelines.

3. Procurement of goods, works and services of SACP shall be carried out in accordance with the provisions of the Public Procurement Act 2006 (PPA) and the Public Procurement Rules 2008 (PPR), to the extent that are consistent with IFAD Procurement Guidelines. If there is any conflict between the government and IFAD procedures about any unique procurement, the provisions identified in IFAD Project Procurement Guidelines and IFAD Project Procurement Handbook as referenced by the Financing Agreement shall prevail.

4. All National Competitive Bidding (NCB) procurement under SACP will be done through the electronic government procurement (e-GP).

5. International Competitive Bidding (ICB) shall be the mandatory procurement method for activities estimated to cost: (i) Goods estimated to cost above USD 200,000 or equivalent; (ii) Civil works estimated to cost above USD 1,000,000.00 or equivalent; and (iii) Services estimated to cost above USD 100,000 or equivalent.

6. **Staffing and capacity development**. Procurement will be conducted by the Project Office and implementing agencies (DAE, DAM, BARI and BADC) according to the level of authority structured for the project. A detailed list of common items will be prepared for procurement through Project Office.

7. A recent assessment done by World Bank for NATP II project revealed that the implementing agencies have the experience in the procurement function; however, their human resources capacity is assessed as not sufficient to handle the project procurement activities. To minimize the associated risk, procurement specialists will be hired in the principal cost centers of the project.

8. **Procurement of vehicles and equipment**. Vehicle and motorcycles for the projects will most likely to be procured through Direct Procurement from Government owned enterprises. The option exists for procurement from other suppliers through the National Open Tender Method (NOTM).

Purchase of computers, photocopiers, and other office equipment, equipment and tools for post-harvest management and processing would primarily from local suppliers by NOTM – although there also exists the option of Request for Quotations (RFQ) for standard specification items in lots specified in Schedule II of PPR. Office furniture may be procured by either RFQ or NOTM. Attention is required to see that requirements are bulked up wherever practical.

9. Vehicle operating costs would be procured using RFQ and direct procurement. Procurement for office running expenses would follow the same procedure. The procuring entity may undertake direct cash purchase of low value goods and urgent essential services such as maintenance, repairs transportation etc. in a lot of under BDT 25,000.

10. **Procurement of studies, survey, and other specialized services.** *Procurement of Studies*: It is envisaged that some of the research work will be carried out by implementing agencies and M&E. There will also be requirement of specialized agencies to conduct studies on Demand Driven and Market Oriented Research. The procurement of consultancy services to carry out these studies and researches would follow the Request for Expression of Interest method. For selection of successful tenderers, either Quality and Cost Base Selection (QBCS) or Fixed Budget Selection (FSB) or Lest Cost Selection (LCS) negotiation method will be used.

11. *Procurement of Training*: Training organized by Project Office or the Implementing Agencies could be procured through RFQ method if there is small number of qualified organizations. Single Source Selection method may be used– where there is only a single qualified supplier, or the supplier is a government agency that has proven record of working in the required area of expertise. However, for many courses, the Project Office or respective implementing agency will organize each element of the training, and individual trainers may be hired via Selection of Individual Consultant (SIC), with training allowances, food and miscellaneous costs paid for via direct procurement or RFQ.

12. **Recruitment of contracted position**. There will be need for hiring new staff for SACP, some project staff including the Project Director, four Project Directors from respective implementing agencies (DAE, DAM, BADC & BARI) and one Administrative Officer would be seconded from Government. Operational Support Team (OST) will be composed of Project Management, Financial Management, Procurement, M&E and KM, Procurement, Gender, Technical Component Coordinators, and other required staff would be recruited by PO on a contract basis. For such recruitment, a recruitment committee would form headed by the PO with representative of implementing agencies. Candidate would be short listed according to ToR which specifies the tasks to be carried out and required qualifications, experience and other conditions if any. Short listed candidates would then be interviewed. For senior positions (PD, Component Directors, Specialists of FM, M&E/KM, Procurement and Gender) the CVs of the top three candidates for each position would be sent to IFAD for approval prior to their appointment. Draft ToRs would be included in the draft Project Implementation Manual.

13. Some senior and specialized advisory posts would be filled by the consultants. The preferred method is to recruit individual consultant using Selection of Individual Consultants (SIC) method. The process to be followed will be the same as prescribed for senior positions in above paragraph.

14. **Working with private sector, NGOs and other service providers**. The project activities contain a number of cost sharing components by Private Sector and Beneficiaries. The costs structure will be defined in Memorandum of Understanding with respective organizations. Procurement procedures by the private sector will be defined in memorandum. For beneficiaries, it will follow the guidelines for Matching Grant Fund.

15. **Procurement of works** . All infrastructural projects, would be implemented by contractors selected through NOTM. There is also the option for RFQ for low value simple works, provided that the estimated value of such works shall not exceed the threshold specified in Schedule II of PPR.

16. **Review of Procurement Decisions**. As an added risk mitigation measure, IFAD would undertake prior and post review of procurement decisions and detail of these would be referenced in the Letter to the Borrower/Recipient.

17. **Thresholds for prior review from the IFAD**. For consistency with the IFAD Procurement Guidelines, the following shall be subject to prior review by IFAD for award of goods and civil works estimated to cost above USD 200,000 equivalent and service estimated to cost USD 100,00 equivalent.

18. The afore-mentioned threshold may be modified from time to time during the project implementation period.

19. **Ex post review**. To ensure that the procurement process is carried out in accordance with agreed procurement guidelines, IFAD will review arrangements for procurement of goods, works and services. The extent of this review process will be contained in the Letter to the Borrower/Recipient.

20. **Register of Contracts**. To conduct subsequent review or procurement analysis, it is recommended to maintain a procurement register by Project Office and other implementing agencies, which should include summary and explanation of the relative procurement process, in English.

Appendix 9: SACP cost and financing

A. MAIN ASSUMPTIONS

Price and physical Contingencies[42]: Price contingencies have been applied on all items. Domestic inflation rate at the time of the mission was 5.5% and the same has been projected for the project duration. Foreign inflation rate is assumed at 2.0%. *Physical contingencies* were calculated at a rate of 2% for all items except salaries and allowances.

Exchange Rates: The initial exchange rate for the analysis has been set at Bangladesh Taka 82 to one USD, the rate prevailing during December 2017. Exchange rates during implementation phase and the foreign exchange rates forecasts for the Project costs estimates as well as the conversions from BDT values into USD are calculated using current exchange rate (BDT/USD). It is likely that the BDT per USD may decline slightly between 2018 and 2020.

Taxes and duties: Taxes and duties have been estimated using the prevailing tax rates at the time of data collection (March 2017). All items, which contained implicit duties and taxes, have been accounted for all items, while nationally purchased items are subject to national and local taxes of different types. For vehicles, equipment and materials, inputs, and operating costs that are purchased locally, only VAT or other local taxes of 10% has been assumed. For civil work, a tax rate of 9.5% has been assumed. A tax rate of 15% has been assumed for consulting services, studies, training and workshop. For salaries and allowance, not tax has been assumed. TA is subject to taxes but administered by FAO, these taxes are exempt.

Project Life: The Project life is 6 years starting the fiscal 2018/19 and expected to complete in 2023/24. Cost estimates for the project period have accordingly been calculated and presented in corresponding Bangladesh Fiscal Year: July to June.

Unit costs: Unit costs together with physical units have been identified for most items and these are input in domestic currency unit, namely BDT and most of the item under TA, the unit costs are input in USD. In certain instances a lump sum allocations have been computed so as to give flexibility in procurement or for the implementation of such activity. All unit costs under salaries and operating costs are indicative and are subject to changes during implementation. Efforts were made to use prevailing unit costs for vehicles and office equipment such as laptops, printers, desk-tops and furniture and materials and these may vary subject to varying specifications.

It is noted that *"all unit costs are indicative and are used for the purposes of estimating the overall project costs. These are, therefore, subject to changes and revision during project implementation and also at the time of preparing Annual Work Plans and Budgets"*.

Financiers: The Project will be financed by the following financiers: (i) IFAD loan, (ii) Government of Bangladesh, (iii) Private Sector, (iv) Beneficiaries, and (v) IFAD Grant. The cost tables will accordingly be revised.

B. PROJECT COSTS

Total project cost: Total Project Cost is estimated at USD 109.85 million. This is inclusive of all contingencies of USD 3.99 million, beneficiary contribution in the form of participation at USD 6.6

[42] According to Economic and Policy Division of GOB, the overall physical contingencies should not exceed 2% rate and that of the price contingencies at 8% rate. In order to comply with this ceiling, price contingencies at current inflation rate were applied to: all civil work items, vehicles and equipment, technical assistance, salary and allowances and all operating costs.

million and USD 8.1 million private sectors, USD 28.65 million will be funded from the government including staff salaries, rentals and in the form of waiver of taxes and duties.

Financing plan: The proposed financiers for the Project are IFAD loan, the Government, beneficiaries, private sector, and IFAD grant. IFAD PBAS loan will finance about USD 64.5 million about 58.7% of total project costs, the government counterpart funding will be about USD 28.65 million (26.1% of the total project cost) including taxes. The IFAD grant is estimated at USD 2 million (1.8% of the total project cost).

Table A9.1 Financing Plan by Components - Including Contingencies (000 USD)

	IFAD loan		*IFAD grant*		*Private sector*		*Beneficiaries*		*Borrower/ counterpart*		*Total*
Component	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*
1. Enhanced production of high-value crops and technology adoption	10 505.6	61.2	404.6	2.4	1 956.1	11.4	838.1	4.9	3 459.5	20.2	17 163
2. Processing and marketing of high-value crops	20 443.0	59.9	665.6	2.0	6 175.5	18.1	23.7	0.1	6 792.7	19.9	34 100
3. Climate-resilient surface water resource management	26 238.9	57.1	161.5	0.4	-	-	5 706.7	12.4	13 850.9	30.1	45 958
4. Project management	7 310.7	57.9	768.4	6.1	-	-	-	-	4 543.6	36.0	12 622
Total	**64 498.2**	**58.7**	**2 000.0**	**1.8**	**8 131.6**	**7.4**	**6 568.5**	**6.0**	**28 646.6**	**26.1**	**109 845**

Total investment costs are estimated at USD 94.66 million and these accounts for about 86% of the total project costs, USD 15.18 million are recurrent costs. The category of civil work accounts for 38.4% of the total project cost, followed by training and workshop (22.9%) and goods, services and inputs (18.6%), salary and allowance (12.1%), vehicles and equipment (3.3%), technical assistance (2.9%) and lastly the operating costs (1.8%).

Project Costs by Disbursement Accounts: Disbursement accounts, derived from the expenditure accounts, provide the basis for determining the financing plan for the Project. Following Disbursement accounts have been set in accordance with IFAD circular:[43] works, vehicles and equipment, goods, services and inputs, training, workshop, surveys and studies, technical assistance, salaries and allowances and operating costs. These are provided in Table A9.2 below.

Table A9.2 Expenditure Accounts by Financier (000 USD)

	IFAD loan		*IFAD grant*		*Private sector*		*Beneficiaries*		*Borrower/ counterpart*		*Total*
Expenditure category	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*
I. Investment costs											
A. Works	25 041.2	59.3	-	-	-	-	5 706.7	13.5	11 484.3	27.2	42 232.2
B. Vehicles and equipment	2 542.2	70.0	-	-	-	-	-	-	1 089.5	30.0	3 631.8
C. Goods, services and inputs	10 753.6	52.7	482.3	2.4	6 357.3	31.2	861.7	4.2	1 933.3	9.5	20 388.3
D. Training, workshop, survey and studies	18 577.7	73.7	-	-	1 774.3	7.0	-	-	4 841.6	19.2	25 193.6
E. Technical assistance	1 517.7	47.2	1 517.7	47.2	-	-	-	-	182.9	5.7	3 218.4
Total investment cost	58 432.5	61.7	2 000.0	2.1	8 131.6	8.6	6 568.5	6.9	19 531.6	20.6	94 664.2
II. Recurrent costs											

[43] Standardised category Descriptions for Loan/Grant Allocations Tables (Schedule-2) in Financing Agreement, ref: IFAD Circular number IC/FOD/02/2013 dated 29 August 2013.

A. Salary and allowance	6 065.8	45.8	-	-	-	-	-	-	7 192.6	54.2	13 258.4
B. Operating costs	-	-	-	-	-	-	-	-	1 922.4	100.0	1 922.4
Total recurrent cost	6 065.8	40.0	-	-	-	-	-	-	9 115.0	60.0	15 180.6
Total	**64 498.2**	**58.7**	**2 000**	**1.8**	**8 131.6**	**7.4**	**6 568.5**	**6.0**	**28 646.6**	**26.1**	**109 845.0**

C. PROPOSED ALLOCATIONS UNDER SCHEDULE -2 OF FINANCING AGREEMENT

Financing rules: In order to accommodate changes in unit cost estimates and physical quantities, the following financing rules have been adopted as the IFAD financing amount is fixed at USD 64.5 million of the loan amount and USD 2.0 million of the grant for technical assistance at 50% from IFAD loan and 50% from IFAD Grant.

Category	Loan Amount (in USD)	Grant Amount (in USD)
Works	22 560 000	
Vehicles & equipment	2 320 000	
Good Services & Inputs	9 600 000	400 000
Training & Workshops	16 930 000	
Consultancies	1 500 000	1 500 000
Recurrent costs	5 240000	
Unallocated	6 350 000	100 000
TOTAL	64 500 000	2 000 000

Above allocations included a 2% of physical contingencies and a 5% of price contingencies.

DETAILED COST TABLES

Table -1: Enhanced production of HVC and technology adoption

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Detailed Costs	Unit	Quantities								Unit Cost - Negotiation (BDT)	Unit Cost - Negotiation (US$)	Base Cost (US$ '000)								Totals Including Contingencies (US$ '000)								Fin. Rule
		18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total			18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	
I. Investment Costs																												
A. Small holder Group Mobilization and Consultations																												
& assessments on HVCs and available technologies																												
1. Conduction of Participatory Rural Appraisal (PRA) for mobilization of smallholders into CIG and CMG groups	group	3 000	4 000	3 000	-	-	-	-	10 000	6,017	73	225.0	300.0	225.0	-	-	-	-	750.0	220.1	293.5	220.1	-	-	-	-	733.7	LOAN (80%)
2. Training of Trainers (ToT) for SAAOs on PRA and group mobilization	ToT	35	25	20	10	-	-	-	90	200,556	2,446	87.5	62.5	50.0	25.0	-	-	-	225.0	85.6	61.1	48.9	24.5	-	-	-	220.1	LOAN (80%)
3. Market-led Research on identification, assessment and prioritization of HVC Value Chains	LS	1	-	-	-	-	-	-	1	12,033,333	146,748	150.0	-	-	-	-	-	-	150.0	146.7	-	-	-	-	-	-	146.7	LOAN (80%)
4. Consultation on Identification, prioritization and selection of proven technologies	Workshop	15	15	15	-	-	-	-	45	100,278	1,223	18.8	18.8	18.8	-	-	-	-	56.3	18.3	18.3	18.3	-	-	-	-	55.0	LOAN (80%)
5. Developing and printing of the technology manuals for trainning, deomonstration and field trial	LS											15.6	-	-	-	-	-	-	15.6	15.3	-	-	-	-	-	-	15.3	LOAN (80%)
Subtotal Small holder Group Mobilization and Consultations																												
& assessments on HVCs and available technologies												496.9	381.3	293.8	25.0	-	-	-	1 196.9	486.1	373.0	287.4	24.5	-	-	-	1 170.9	
B. Demand-driven and market led research																												
1. Action research on appropriate technologies for HVCs	LS_year	1	1	1	1	1	1	-	6	2,506,944	30,572	31.3	31.3	31.3	31.3	31.3	31.3	-	187.5	30.6	30.6	30.6	30.6	30.6	30.6	-	183.4	LOAN (80%)
2. Breeder seed production for pulses, oilseeds and other potential HVCs for BADC	LS/year	1	1	1	1	1	1	-	6	2,506,944	30,572	31.3	31.3	31.3	31.3	31.3	31.3	-	187.5	30.6	30.6	30.6	30.6	30.6	30.6	-	183.4	LOAN (80%)
3. Farmers Field trial on stress tolerant varieties of fruits, vegetables, oilseed, cereal crops, etc.	Trial	120	120	120	120	-	-	-	480	32,089	391	48.0	48.0	48.0	48.0	-	-	-	192.0	47.0	47.0	47.0	47.0	-	-	-	187.8	LOAN (80%)
4. Farmers Field Trial on appropriate scale mechanization (Zero-tillage seeder, PTOS, High Speed tiller, bed planter, Axial Flow Pump, Drip Irrigation, Dug Well Irrigation, furrow irrigation)	Trial	10	10	10	10	-	-	-	40	362,604	4,422	45.2	45.2	45.2	45.2	-	-	-	180.8	44.2	44.2	44.2	44.2	-	-	-	176.9	LOAN (80%)
5. Linkage development between BARI and manufacturers of agri-machineries	w orkshop	3	3	3	3	-	-	-	12	120,333	1,467	4.5	4.5	4.5	4.5	-	-	-	18.0	4.4	4.4	4.4	4.4	-	-	-	17.6	LOAN (80%)
6. Research on agro-processing	LS year	1	1	1	-	-	-	-	3	1,002,778	12,229	12.5	12.5	12.5	-	-	-	-	37.5	12.2	12.2	12.2	-	-	-	-	36.7	LOAN (80%)
7. Multiplication of Germplasm of HVCs (Research and Extension)	LS year	1	1	1	-	-	-	-	3	2,506,944	30,572	31.3	31.3	31.3	-	-	-	-	93.8	30.6	30.6	30.6	-	-	-	-	91.7	LOAN (80%)
8. Action research on market driven HVCs	LS											10.0	30.0	20.0	-	-	-	-	60.0	9.8	29.3	19.6	-	-	-	-	58.7	LOAN (80%)
9. Staff training and overseas exposure visits /a	batch	-	1	1	1	1	-	-	4	3,208,889	39,133	-	40.0	40.0	40.0	40.0	-	-	160.0	-	39.1	39.1	39.1	39.1	-	-	156.5	LOAN (80%)
Subtotal Demand-driven and market led research												214.0	274.0	264.0	200.2	102.5	62.5	-	1 117.1	209.3	268.0	258.2	195.9	100.3	61.1	-	1 092.8	
C. Extension Service for Small holder farmer on HVCs (8M)																												
1. Demo set-up with Smallholder Groups																												
a. Fruits	Demo	600	600	600	600	600	-	-	3 000	25,069	306	187.5	187.5	187.5	187.5	187.5	-	-	937.5	183.4	183.4	183.4	183.4	183.4	-	-	917.2	LOAN (80%)
b. Vegetable (block demo)	Demo	600	600	600	600	600	-	-	3 000	25,069	306	187.5	187.5	187.5	187.5	187.5	-	-	937.5	183.4	183.4	183.4	183.4	183.4	-	-	917.2	LOAN (80%)
c. Other crops (block demo of pulses, oilcrops, maize, etc.)	Demo	600	600	600	600	600	-	-	3 000	10,028	122	75.0	75.0	75.0	75.0	75.0	-	-	375.0	73.4	73.4	73.4	73.4	73.4	-	-	366.9	LOAN (80%)
Subtotal emo set-up with Smallholder Groups												450.0	450.0	450.0	450.0	450.0	-	-	2 250.0	440.2	440.2	440.2	440.2	440.2	-	-	2 201.2	
2. Field days																												
a. Fruit	Field Day	50	100	50	50	50	-	-	300	20,056	245	12.5	25.0	12.5	12.5	12.5	-	-	75.0	12.2	24.5	12.2	12.2	12.2	-	-	73.4	LOAN (80%)
b. Vegetable	Field Day	50	100	100	50	50	-	-	350	20,056	245	12.5	25.0	25.0	12.5	12.5	-	-	87.5	12.2	24.5	24.5	12.2	12.2	-	-	85.6	LOAN (80%)
c. Others (pulses, oilcrops, maize, etc.)	Field Day	50	100	100	50	50	-	-	350	20,056	245	12.5	25.0	25.0	12.5	12.5	-	-	87.5	12.2	24.5	24.5	12.2	12.2	-	-	85.6	LOAN (80%)
Subtotal ield days												37.5	75.0	62.5	37.5	37.5	-	-	250.0	36.7	73.4	61.1	36.7	36.7	-	-	244.6	
3. Market-led Farmers Field School	Field Day	100	300	300	300	300	-	-	1 300	50,139	611	62.5	187.5	187.5	187.5	187.5	-	-	812.5	61.1	183.4	183.4	183.4	183.4	-	-	794.9	LOAN (80%)
4. F2F exchange visit	Visit	150	150	150	150	150	150	-	900	20,056	245	37.5	37.5	37.5	37.5	37.5	37.5	-	225.0	36.7	36.7	36.7	36.7	36.7	36.7	-	220.1	LOAN (80%)
5. On the job technical training to farmer on demand basis /b	Group	-	1 800	2 400	1 800	-	-	-	6 000	36,100	440	-	810.0	1 080.0	810.0	-	-	-	2 700.0	-	792.4	1 056.6	792.4	-	-	-	2 641.5	LOAN (80%)
6. Suport to sustainable production practices																												
a. Establish common facility center on cost sharing	Center	100	100	100	100	100	-	-	500	150,414	1,834	187.5	187.5	187.5	187.5	187.5	-	-	937.5	185.8	190.6	195.7	200.9	206.3	-	-	979.3	LOAN (65%)
b. Farm Marchinary for common facility center on cost sharing	Set	100	100	100	100	100	-	-	500	150,417	1,834	187.5	187.5	187.5	187.5	187.5	-	-	937.5	183.4	183.4	183.4	183.4	183.4	-	-	917.2	LOAN (100%)
Subtotal uport to sustainable production practices												375.0	375.0	375.0	375.0	375.0	-	-	1 875.0	369.2	374.1	379.1	384.4	389.7	-	-	1 896.5	

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Detailed Costs	Unit	Quantities 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Unit Cost - Negotiation (BDT)	Unit Cost - Negotiation (US$)	Base Cost (US$ '000) 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Totals Including Contingencies (US$ '000) 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Fin. Rule
I. Investment Costs																												
7. Establishment of seed villages (to produce foundation seeds)	Village	-	10	10	10	10	10	-	50	1,002,778	12,229	-	125.0	125.0	125.0	125.0	125.0	-	625.0	-	122.3	122.3	122.3	122.3	122.3	-	611.4	LOAN (80%)
8. Beneficiary participation(10% of the total cost)	LS											261.3	387.0	303.5	-	-	-	-	951.8	255.7	378.6	296.9	-	-	-	-	931.2	BEN (100%)
9. Traiining, demonstration and consultattion, information services provided by Private Input Company, processors, w holesaler,etc. to the target small hold	LS/year	-	1	1	1	1	1	-	5	32,080,000	391,220	-	400.0	400.0	400.0	400.0	400.0	-	2 000.0	-	391.2	391.2	391.2	391.2	391.2	-	1 956.1	PRIVATE (100%)
Subtotal Extension Service for Small holder farmer on HVCs (8M)												1 223.8	2 847.0	3 021.0	2 422.5	1 612.5	562.5	-	11 689.3	1 199.6	2 792.3	2 967.7	2 387.4	1 600.3	550.2	-	11 497.5	
D. Capacity Building of extension and research agencies																												
1. Exposure visit and training outside the country: extension practitioner (DAE, DAM, BADC), researchers and farmers to abroad /c	Visit	-	1	1	-	1	1	-	4	5,013,889	61,145	-	62.5	62.5	-	62.5	62.5	-	250.0	-	61.1	61.1	-	61.1	61.1	-	244.6	LOAN (80%)
E. Infrastructure for research and extension facility																												
1. Renovation of DAE office and trainning facility	Site	-	5	5	5	-	-	-	15	1,203,315	14,675	-	75.0	75.0	75.0	-	-	-	225.0	-	76.2	78.3	80.4	-	-	-	234.9	LOAN (65%)
2. Renovation, repair and improve lab facilities of BARI research stations	Site	-	4	2	2	-	-	-	8	1,203,315	14,675	-	60.0	30.0	30.0	-	-	-	120.0	-	61.0	31.3	32.1	-	-	-	124.5	LOAN (65%)
3. Construction and Renovation of BADC Seed Processing Center	Site	-	1	2	1	-	-	-	4	10,103,403	123,212	-	125.9	251.9	125.9	-	-	-	503.8	-	128.0	262.9	135.0	-	-	-	525.9	LOAN (65%)
Subtotal Infrastructure for research and extension facility												-	260.9	356.9	230.9	-	-	-	848.8	-	265.3	372.5	247.5	-	-	-	885.3	
F. Workshop and training																												
1. Worshop on dissemination of PIM	Workshop	4	-	-	-	-	-	-	4	250,694	3,057	12.5	-	-	-	-	-	-	12.5	12.2	-	-	-	-	-	-	12.2	LOAN (80%)
2. Training on Monitoring tools and techniquies for field staff	Batch	15	-	-	-	-	-	-	15	200,556	2,446	37.5	-	-	-	-	-	-	37.5	36.7	-	-	-	-	-	-	36.7	LOAN (80%)
Subtotal Workshop and training												50.0	-	-	-	-	-	-	50.0	48.9	-	-	-	-	-	-	48.9	
G. Vehicle and Equipment																												
1. Vehecle for DAE																												
Jeep	Vehicle	1	-	-	-	-	-	-	1	9,605,556	117,141	118.8	-	-	-	-	-	-	118.8	118.3	-	-	-	-	-	-	118.3	LOAN (70%)
Double cabin pickup	Vehicle	2	-	-	-	-	-	-	2	5,763,333	70,285	142.5	-	-	-	-	-	-	142.5	141.9	-	-	-	-	-	-	141.9	LOAN (70%)
Subtotal ehecle for DAE												261.3	-	-	-	-	-	-	261.3	260.2	-	-	-	-	-	-	260.2	
2. Vehicle for BARI																												
Jeep	Vehicle	1	-	-	-	-	-	-	1	9,605,556	117,141	118.8	-	-	-	-	-	-	118.8	118.3	-	-	-	-	-	-	118.3	LOAN (70%)
Double cabin pickup	Vehicle	1	-	-	-	-	-	-	1	5,763,333	70,285	71.3	-	-	-	-	-	-	71.3	71.0	-	-	-	-	-	-	71.0	LOAN (70%)
Subtotal ehicle for BARI												190.0	-	-	-	-	-	-	190.0	189.3	-	-	-	-	-	-	189.3	
3. Motorcycle for DAE /d	Motorcycle	60	-	-	-	-	-	-	60	183,618	2,239	136.2	-	-	-	-	-	-	136.2	135.7	-	-	-	-	-	-	135.7	LOAN (70%)
4. Motorcycle for BARI	Motorcycle	10	-	-	-	-	-	-	10	183,618	2,239	22.7	-	-	-	-	-	-	22.7	22.6	-	-	-	-	-	-	22.6	LOAN (70%)
5. Computer and printer for DAE (for Upazila)	Set	88	-	-	-	-	-	-	88	84,933	1,036	92.4	-	-	-	-	-	-	92.4	92.0	-	-	-	-	-	-	92.0	LOAN (70%)
6. Photocopy marchine for DAE (for Upazila)	Set	15	-	-	-	-	-	-	15	203,840	2,486	37.8	-	-	-	-	-	-	37.8	37.7	-	-	-	-	-	-	37.7	LOAN (70%)
7. Computer and printer for BARI at research station	Set	9	-	-	-	-	-	-	9	84,933	1,036	9.5	-	-	-	-	-	-	9.5	9.4	-	-	-	-	-	-	9.4	LOAN (70%)
8. Photocopy marchine for BARI at research station	Set	5	-	-	-	-	-	-	5	203,840	2,486	12.6	-	-	-	-	-	-	12.6	12.6	-	-	-	-	-	-	12.6	LOAN (70%)
9. Furniture and fixing for DAE	Set											93.8	-	-	-	-	-	-	93.8	93.4	-	-	-	-	-	-	93.4	LOAN (70%)
10. Projector for DAE /e	each	30	-	-	-	-	-	-	30	152,071	1,855	56.4	-	-	-	-	-	-	56.4	56.2	-	-	-	-	-	-	56.2	LOAN (70%)
11. Furniture and fixing for BARI	Set											15.0	-	-	-	-	-	-	15.0	14.9	-	-	-	-	-	-	14.9	LOAN (70%)
Subtotal Vehicle and Equipment												927.6	-	-	-	-	-	-	927.6	924.0	-	-	-	-	-	-	924.0	

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I. Investment Costs																												
H. Technical Assistance																												
1. Training needs assessment study	Training	1	-	-	-	-	-	-	1	1,203,333	14,675	15.0	-	-	-	-	-	-	15.0	14.7	-	-	-	-	-	-	14.7	LOAN (50%), GRANT (50%)
2. International M&E Expert	pers_month	-	3	3	3	-	-	-	9	981,333	11,967	-	36.0	36.0	36.0	-	-	-	108.0	-	35.9	35.9	35.9	-	-	-	107.7	LOAN (50%), GRANT (50%)
3. International Consultants on HVC	pers_month	-	6	3	-	-	-	-	9	981,333	11,967	-	72.0	36.0	-	-	-	-	108.0	-	71.8	35.9	-	-	-	-	107.7	LOAN (50%), GRANT (50%)
4. International consultant (FFS)	pers_month	-	4	4	-	-	-	-	8	981,333	11,967	-	48.0	48.0	-	-	-	-	96.0	-	47.9	47.9	-	-	-	-	95.7	LOAN (50%), GRANT (50%)
5. National Consultants for M&E	pers_month	-	12	12	12	-	-	-	36	401,111	4,892	-	60.0	60.0	60.0	-	-	-	180.0	-	58.7	58.7	58.7	-	-	-	176.1	LOAN (50%), GRANT (50%)
6. National Consultant (FFS)	pers_month	-	12	12	12	-	-	-	36	401,111	4,892	-	60.0	60.0	60.0	-	-	-	180.0	-	58.7	58.7	58.7	-	-	-	176.1	LOAN (50%), GRANT (50%)
7. Technical Support Service /f	LS/year	0.5	1	1	1	0.5	-	-	4	1,203,333	14,675	7.5	15.0	15.0	15.0	7.5	-	-	60.0	7.3	14.7	14.7	14.7	7.3	-	-	58.7	LOAN (50%), GRANT (50%)
8. Travel expenses /g	LS/year	0.5	1	1	1	0.5	-	-	4	2,005,556	24,458	12.5	25.0	25.0	25.0	12.5	-	-	100.0	12.2	24.5	24.5	24.5	12.2	-	-	97.8	LOAN(50%),GRANT (50%)
9. Project Servicing Expenses (at 7% of total expenditure)	LS/year											2.5	22.1	19.6	13.7	1.4	-	-	59.4	2.5	21.6	19.2	13.4	1.4	-	-	58.1	LOAN (50%), GRANT (50%)
Subtotal Technical Assistance												37.5	338.1	299.6	209.7	21.4	-	-	906.4	36.7	333.7	295.4	205.9	20.9	-	-	892.6	
Total Investment Costs												2 949.7	4 163.7	4 297.7	3 088.4	1 798.9	687.5	-	16 985.9	2 904.6	4 093.5	4 242.3	3 061.0	1 782.6	672.5	-	16 756.6	
II. Recurrent Costs																												
A. Project Staff																												
1. Upazila Agriculture Officer	Person Month	360	360	360	360	360	360	-	2 160			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
2. Additional Agriculture Officer	Person Month	360	360	360	360	360	360	-	2 160			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
3. Agriculture Extension Officer	Person Month	360	360	360	360	360	360	-	2 160			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
4. Asst Agriculture Extension Officer	Person Month	360	360	360	360	360	360	-	2 160			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
5. Sub-Assistant Agriculture Officer	Person Month	4 500	4 500	4 500	4 500	4 500	4 500	-	27 000			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
6. Chief Scientific Officer/Principle Scientific Officer	Person Month	24	24	24	24	24	24	-	144			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
7. Scientific Officer	Person Month	24	24	24	24	24	24	-	144			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
8. Driver for BARI	pers_month	12	24	24	24	24	24	-	132	20,000	244	3.0	6.0	6.0	6.0	6.0	6.0	-	33.0	2.9	5.9	5.9	5.9	5.9	5.9	-	32.2	GOVT
9. Driver for DAE	pers_month	18	36	36	36	36	36	-	198	20,000	244	4.5	9.0	9.0	9.0	9.0	9.0	-	49.5	4.4	8.8	8.8	8.8	8.8	8.8	-	48.3	GOVT
Subtotal Project Staff												7.5	15.0	15.0	15.0	15.0	15.0	-	82.5	7.3	14.6	14.6	14.6	14.6	14.6	-	80.5	
B. O&M of Vehicle																												
1. Fuel cost for DAE	Month	18	36	36	36	36	36	-	198	28,000	341	6.3	12.6	12.6	12.6	12.6	12.6	-	69.3	6.1	12.3	12.3	12.3	12.3	12.3	-	67.6	GOVT
2. Fuel cost for BARI	Month	12	24	24	24	24	24	-	132	28,000	341	4.2	8.4	8.4	8.4	8.4	8.4	-	46.2	4.1	8.2	8.2	8.2	8.2	8.2	-	45.1	GOVT
3. Fuel cost for motorcycle of DAE	Month	720	720	720	720	720	720	-	4 320	2,560	31	23.0	23.0	23.0	23.0	23.0	23.0	-	138.2	22.5	22.5	22.5	22.5	22.5	22.5	-	134.9	GOVT
4. Fuel cost for motorcycle of BARI	Month	60	120	120	120	120	120	-	660	2,560	31	1.9	3.8	3.8	3.8	3.8	3.8	-	21.1	1.9	3.7	3.7	3.7	3.7	3.7	-	20.6	GOVT
5. Vehicle Maintenance cost for DAE	Month	-	36	36	36	36	36	-	180	16,000	195	-	7.2	7.2	7.2	7.2	7.2	-	36.0	-	7.0	7.0	7.0	7.0	7.0	-	35.1	GOVT
6. Vehicle Maintenance cost for BARI	Month	-	24	24	24	24	24	-	120	16,000	195	-	4.8	4.8	4.8	4.8	4.8	-	24.0	-	4.7	4.7	4.7	4.7	4.7	-	23.4	GOVT
Subtotal O&M of Vehicle												35.5	59.9	59.9	59.9	59.9	59.9	-	334.9	34.6	58.4	58.4	58.4	58.4	58.4	-	326.7	
C. Office O&M																												
1. Operating cost for DAE	Month	360	360	360	360	360	360	-	2 160			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
2. Operating cost for BARI	Month	48	48	48	48	48	48	-	288			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
Subtotal Office O&M												-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D. Travel allowance																												
1. DAE	LS/year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
2. BARI	LS/year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
Subtotal Travel allowance												-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Recurrent Costs												43.0	74.9	74.9	74.9	74.9	74.9	-	417.4	41.9	73.1	73.1	73.1	73.1	73.1	-	407.2	
Total												2 992.7	4 238.6	4 372.6	3 163.2	1 873.8	762.4	-	17 403.3	2 946.5	4 166.5	4 315.4	3 134.1	1 855.7	745.5	-	17 163.8	

ia A batch of 8 Scientists
ib Assuming only 60% groups respond
ic Officers from DAE, DAM & MOA will lead the farmers
id 2 motor cycles per Upazila
ie one Projector per Upazila
if for hiring additional technical consultants (National)
ig Field travel expenses for the TA team

Table -2: Processing and marketing of HVC

Bangladesh
SACP Final Design
Table 2. Linking Smallholder Farmer to Market

Detailed Costs	Unit	Quantities 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Unit Cost - Negotiation (BDT)	Unit Cost - Negotiation (US$)	Base Cost (US$ '000) 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Totals Including Contingencies (US$ '000) 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Fin. Rule
I. Investment Costs																												
A. Improving market linkage																												
1. Buyer mapping and assessment																												
Printing materials on buyer mapping and assessment handbook	LS											2.0	-	-	-	-	-	-	2.0	2.0	-	-	-	-	-	-	2.0	LOAN (80%)
2. Business management skills development																												
Printing materials on business management skills handbook (Bangla)	Copy	800	-	-	-	-	-	-	800	401	5	4.0	-	-	-	-	-	-	4.0	3.9	-	-	-	-	-	-	3.9	LOAN (80%)
ToT for SAAOs on business management skills	ToT	15	15	-	-	-	-	-	30	202,000	2,463	37.8	37.8	-	-	-	-	-	75.5	37.0	37.0	-	-	-	-	-	73.9	LOAN (80%)
Farmer training on business management skills	Group	2 000	4 000	4 000	-	-	-	-	10 000	80,222	978	2 000.0	4 000.0	4 000.0	-	-	-	-	10 000.0	1 956.6	3 913.3	3 913.3	-	-	-	-	9 783.2	LOAN (80%)
Subtotal Business management skills development												2 041.8	4 037.8	4 000.0	-	-	-	-	10 079.5	1 997.5	3 950.2	3 913.3	-	-	-	-	9 861.0	
3. Creation and operation of multi-stakeholder platform																												
Quarterly meeting (food/snacks cost)	Meeting	4	4	4	4	4	4	-	24	80,222	978	4.0	4.0	4.0	4.0	4.0	4.0	-	24.0	3.9	3.9	3.9	3.9	3.9	3.9	-	23.5	LOAN (80%)
Beneficiary contribution (venue and logistics) 50%	LS											24.2	-	-	-	-	-	-	24.2	23.7	-	-	-	-	-	-	23.7	BEN (100%)
Subtotal Creation and operation of multi-stakeholder platform												28.2	4.0	4.0	4.0	4.0	4.0	-	48.2	27.6	3.9	3.9	3.9	3.9	3.9	-	47.1	
Subtotal Improving market linkage												2 072.0	4 041.8	4 004.0	4.0	4.0	4.0	-	10 129.7	2 027.0	3 954.1	3 917.2	3.9	3.9	3.9	-	9 910.1	
B. Post-harvest and processing investment																												
1. Farmer training on post-harvest and primary processing																												
Printing materials on post-harvest, primary processing per HVC (Bangla)	handouts	7 500	-	-	-	-	-	-	7 500	241	3	22.5	-	-	-	-	-	-	22.5	22.0	-	-	-	-	-	-	22.0	LOAN (80%)
ToT for SAAOs on post-harvest and primary processing	ToT	15	15	-	-	-	-	-	30	202,000	2,463	37.8	37.8	-	-	-	-	-	75.5	37.0	37.0	-	-	-	-	-	73.9	LOAN (80%)
Farmer training on post-harvest and primary processing	Group	2 000	2 800	2 800	2 000	-	-	-	9 600	80,222	978	2 000.0	2 800.0	2 800.0	2 000.0	-	-	-	9 600.0	1 956.6	2 739.3	2 739.3	1 956.6	-	-	-	9 391.9	LOAN (80%)
Private sector contribution 20%	LS											2 015.1	-	-	-	-	-	-	2 015.1	1 971.4	-	-	-	-	-	-	1 971.4	PRIVATE (100%)
Subtotal Farmer training on post-harvest and primary processing												4 075.4	2 837.8	2 800.0	2 000.0	-	-	-	11 713.2	3 987.0	2 776.2	2 739.3	1 956.6	-	-	-	11 459.2	
2. Promotion of agro-processing enterprise																												
Matching grant (Project share)	Enterprise	-	25	100	100	75	-	-	300	802,000	9,780	-	250.0	1 000.0	1 000.0	750.0	-	-	3 000.0	-	244.5	978.0	978.0	733.5	-	-	2 934.1	LOAN (100%)
Entreprenuer's share	enterprise	-	25	100	100	75	-	-	300	1,203,000	14,671	-	375.0	1 500.0	1 500.0	1 125.0	-	-	4 500.0	-	366.8	1 467.1	1 467.1	1 100.3	-	-	4 401.2	PRIVATE (100%)
Subtotal Promotion of agro-processing enterprise												-	625.0	2 500.0	2 500.0	1 875.0	-	-	7 500.0	-	611.3	2 445.1	2 445.1	1 833.8	-	-	7 335.4	
Subtotal Post-harvest and processing investment												4 075.4	3 462.8	5 300.0	4 500.0	1 875.0	-	-	19 213.2	3 987.0	3 387.5	5 184.4	4 401.8	1 833.8	-	-	18 794.6	
C. Safe food processing & nutrition training																												
1. Food safety and nutrition training																												
Printing materials on quality and food safely management system manual	Copy	-	-	500	-	-	-	-	500	401	5	-	-	2.5	-	-	-	-	2.5	-	-	2.4	-	-	-	-	2.4	LOAN (80%)
2-day center based training for farmer group leaders	Group	-	-	-	60	60	-	-	120	100,278	1,223	-	-	-	75.0	75.0	-	-	150.0	-	-	-	73.4	73.4	-	-	146.7	LOAN (80%)
1-day training for women farmer groups	Group	-	-	-	300	300	-	-	600	80,222	978	-	-	-	300.0	300.0	-	-	600.0	-	-	-	293.5	293.5	-	-	587.0	LOAN (80%)
1 day home level training for women	Group	-	-	-	100	100	-	-	200	80,222	978	-	-	-	100.0	100.0	-	-	200.0	-	-	-	97.8	97.8	-	-	195.7	LOAN (80%)
Subtotal Food safety and nutrition training												-	-	2.5	475.0	475.0	-	-	952.5	-	-	2.4	464.7	464.7	-	-	931.8	
2. Nutrition based value chains promotion																												
ToT for SAAOs on community based safe food processing	ToT	-	15	-	15	-	-	-	30	202,000	2,463	-	37.8	-	37.8	-	-	-	75.5	-	37.0	-	37.0	-	-	-	73.9	LOAN (80%)
2-day women based training in development of healthy horticulture based recipe	Group	-	-	40	40	-	-	-	80	80,222	978	-	-	40.0	40.0	-	-	-	80.0	-	-	39.1	39.1	-	-	-	78.3	LOAN (80%)
1/2 day women farmer demonstrations on safe food recipe preparation and competition	Group	-	-	60	60	-	-	-	120	80,222	978	-	-	60.0	60.0	-	-	-	120.0	-	-	58.7	58.7	-	-	-	117.4	LOAN (80%)
Subtotal Nutrition based value chains promotion												-	37.8	100.0	137.8	-	-	-	275.5	-	37.0	97.8	134.8	-	-	-	269.6	
Subtotal Safe food processing & nutrition training												-	37.8	102.5	612.8	475.0	-	-	1 228.0	-	37.0	100.3	599.5	464.7	-	-	1 201.4	

Bangladesh
SACP Final Design
Table 2. Linking Smallholder Farmer to Market

Detailed Costs	Unit	Quantities								Unit Cost - Negotiation (BDT)	Unit Cost - Negotiation (US$)	Base Cost (US$ '000)								Totals Including Contingencies (US$ '000)								Fin. Rule
		18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total			18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	
I. Investment Costs																												
D. Vehcle and Equipment																												
1. Vehicle for DAM regional offices																												
Jeep for Component Director	each	1	-	-	-	-	-	-	1	9,605,556	117,141	118.8	-	-	-	-	-	-	118.8	118.3	-	-	-	-	-	-	118.3	LOAN (70%)
Double cabin pickup for regional offices	each	2	-	-	-	-	-	-	2	5,763,333	70,285	142.5	-	-	-	-	-	-	142.5	141.9	-	-	-	-	-	-	141.9	LOAN (70%)
Subtotal Vehicle for DAM regional offices												261.3	-	-	-	-	-	-	261.3	260.2	-	-	-	-	-	-	260.2	
2. Motorcycle for Upazila Marketing Facilitator	Number	30	-	-	-	-	-	-	30	178,279	2,174	66.1	-	-	-	-	-	-	66.1	65.9	-	-	-	-	-	-	65.9	LOAN (70%)
3. Furniture	Region	3	-	-	-	-	-	-	3	5,055,556	61,653	187.5	-	-	-	-	-	-	187.5	186.8	-	-	-	-	-	-	186.8	LOAN (70%)
4. Photopier	Region	3	-	-	-	-	-	-	3	202,222	2,466	7.5	-	-	-	-	-	-	7.5	7.5	-	-	-	-	-	-	7.5	LOAN (70%)
5. Projector	Region	3	-	-	-	-	-	-	3	152,071	1,855	5.6	-	-	-	-	-	-	5.6	5.6	-	-	-	-	-	-	5.6	LOAN (70%)
6. Computer	set	20	-	-	-	-	-	-	20	84,933	1,036	21.0	-	-	-	-	-	-	21.0	20.9	-	-	-	-	-	-	20.9	LOAN (70%)
Subtotal Vehcle and Equipment												549.0	-	-	-	-	-	-	549.0	546.9	-	-	-	-	-	-	546.9	
E. Technical Assistance																												
1. Staff training (based need assessment study)	Training	0.5	1	1	1	0.5	-	-	4	3,208,000	39,122	20.0	40.0	40.0	40.0	20.0	-	-	160.0	19.6	39.1	39.1	39.1	19.6	-	-	156.5	LOAN (50%), GRANT (50%)
2. International Value Chain Specialist	pers_month	-	6	6	6	-	-	-	18	979,200	11,941	-	72.0	72.0	72.0	-	-	-	216.0	-	71.6	71.6	71.6	-	-	-	214.9	LOAN (50%), GRANT (50%)
3. International Consultants - Post-harvest & Quality management	pers_month	-	6	6	6	-	-	-	18	979,200	11,941	-	72.0	72.0	72.0	-	-	-	216.0	-	71.6	71.6	71.6	-	-	-	214.9	LOAN (50%), GRANT (50%)
4. National Consultants-Value Chain	pers_month	6	12	12	12	-	-	-	42	401,000	4,890	30.0	60.0	60.0	60.0	-	-	-	210.0	29.3	58.7	58.7	58.7	-	-	-	205.4	LOAN (50%), GRANT (50%)
5. National consultants, Nutrition	pers_month	-	12	12	12	-	-	-	36	401,000	4,890	-	60.0	60.0	60.0	-	-	-	180.0	-	58.7	58.7	58.7	-	-	-	176.0	LOAN (50%), GRANT (50%)
6. Technical Support Service - Agribusiness Expert	pers_month	-	12	12	12	-	-	-	36	408,000	4,976	-	60.0	60.0	60.0	-	-	-	180.0	-	59.7	59.7	59.7	-	-	-	179.1	LOAN (50%), GRANT (50%)
7. Travel expenses /a	per_year	0.5	1	1	1	0.5	-	-	4	2,005,000	24,451	12.5	25.0	25.0	25.0	12.5	-	-	100.0	12.2	24.5	24.5	24.5	12.2	-	-	97.8	GRANT (50%), LOAN (50%)
8. Project Servicing Expenses (at 7% of total costs)	LS											4.3	27.2	27.2	27.2	2.3	-	-	88.3	4.2	26.6	26.6	26.6	2.2	-	-	86.4	GRANT (50%), LOAN (50%)
Subtotal Technical Assistance												66.8	416.2	416.2	416.2	34.8	-	-	1 350.3	65.4	410.6	410.6	410.6	34.0	-	-	1 331.1	
Total Investment Costs												6 763.2	7 958.5	9 822.7	5 533.0	2 388.8	4.0	-	32 470.2	6 626.3	7 789.2	9 612.5	5 415.7	2 336.5	3.9	-	31 784.1	
II. Recurrent Costs																												
A. Staff salary																												
1. District Marketing Officer	Pers_month	-	12	12	12	12	12	-	60	62,000	756	-	9.3	9.3	9.3	9.3	9.3	-	46.5	-	9.1	9.1	9.1	9.1	9.1	-	45.4	GOVT
2. District Market Inspector	Pers_month	-	12	12	12	12	12	-	60	35,000	427	-	5.3	5.3	5.3	5.3	5.3	-	26.3	-	5.1	5.1	5.1	5.1	5.1	-	25.6	GOVT
3. Expert-Curer	Pers_month	-	12	12	12	12	12	-	60	25,000	305	-	3.8	3.8	3.8	3.8	3.8	-	18.8	-	3.7	3.7	3.7	3.7	3.7	-	18.3	GOVT
4. Upazilla Marketing Officer	Pers_month	360	360	360	360	360	360	-	2 160	40,000	488	180.0	180.0	180.0	180.0	180.0	180.0	-	1 080.0	175.6	175.6	175.6	175.6	175.6	175.6	-	1 053.7	GOVT
5. Office Assistance (Dhaka)	Pers_month	12	12	12	12	12	12	-	72	16,120	197	2.4	2.4	2.4	2.4	2.4	2.4	-	14.5	2.4	2.4	2.4	2.4	2.4	2.4	-	14.2	GOVT
6. Accountant (Dhaka)	Pers_month	12	12	12	12	12	12	-	72	20,150	246	3.0	3.0	3.0	3.0	3.0	3.0	-	18.1	2.9	2.9	2.9	2.9	2.9	2.9	-	17.7	GOVT
7. Assistance Administrative Officer (Dhaka)	Pers_month	12	12	12	12	12	12	-	72	20,150	246	3.0	3.0	3.0	3.0	3.0	3.0	-	18.1	2.9	2.9	2.9	2.9	2.9	2.9	-	17.7	GOVT
8. Driver (Regional Offices)	Pers_month	36	36	36	36	36	36	-	216	20,000	244	9.0	9.0	9.0	9.0	9.0	9.0	-	54.0	8.8	8.8	8.8	8.8	8.8	8.8	-	52.7	GOVT
Subtotal Staff salary												197.5	215.8	215.8	215.8	215.8	215.8	-	1 276.3	192.6	210.5	210.5	210.5	210.5	210.5	-	1 245.1	
B. Travel allow ance for engineers, technicians, and staff	year	1	1	1	1	1	1	-	6	10,000,000	121,951	125.0	125.0	125.0	125.0	125.0	125.0	-	750.0	122.0	122.0	122.0	122.0	122.0	122.0	-	731.7	GOVT
C. Operation and Maintenance																												
1. Motocycle O&M for Upazila Marketing Facilitator	per year	6	-	-	-	-	-	-	6	1,080,000	13,171	81.0	-	-	-	-	-	-	81.0	79.0	-	-	-	-	-	-	79.0	GOVT
2. Electricity	per year	1	1	1	1	1	1	-	6	300,000	3,659	3.8	3.8	3.8	3.8	3.8	3.8	-	22.5	3.7	3.7	3.7	3.7	3.7	3.7	-	22.0	GOVT
3. Local tax	per year	1	1	1	1	1	1	-	6	200,000	2,439	2.5	2.5	2.5	2.5	2.5	2.5	-	15.0	2.4	2.4	2.4	2.4	2.4	2.4	-	14.6	GOVT
4. Postal charge	per year	1	1	1	1	1	1	-	6	500,000	6,098	6.3	6.3	6.3	6.3	6.3	6.3	-	37.5	6.1	6.1	6.1	6.1	6.1	6.1	-	36.6	GOVT
5. Communication	per year	1	1	1	1	1	1	-	6	50,000	610	0.6	0.6	0.6	0.6	0.6	0.6	-	3.8	0.6	0.6	0.6	0.6	0.6	0.6	-	3.7	GOVT
6. Registration and road taxes	per year	1	1	1	1	1	1	-	6	100,000	1,220	1.3	1.3	1.3	1.3	1.3	1.3	-	7.5	1.2	1.2	1.2	1.2	1.2	1.2	-	7.3	GOVT
7. Fuel and maintenance	per year	1	1	1	1	1	1	-	6	1,000,000	12,195	12.5	12.5	12.5	12.5	12.5	12.5	-	75.0	12.2	12.2	12.2	12.2	12.2	12.2	-	73.2	GOVT
8. Issurance and Bank charge	per year	1	1	1	1	1	1	-	6	60,000	732	0.8	0.8	0.8	0.8	0.8	0.8	-	4.5	0.7	0.7	0.7	0.7	0.7	0.7	-	4.4	GOVT
9. Stationery	per year	1	1	1	1	1	1	-	6	500,000	6,098	6.3	6.3	6.3	6.3	6.3	6.3	-	37.5	6.1	6.1	6.1	6.1	6.1	6.1	-	36.6	GOVT
10. Advertisesment and tendering	per year	1	1	1	1	1	1	-	6	150,000	1,829	1.9	1.9	1.9	1.9	1.9	1.9	-	11.3	1.8	1.8	1.8	1.8	1.8	1.8	-	11.0	GOVT
11. Furniture O&M	per year	1	1	1	1	1	1	-	6	100,000	1,220	1.3	1.3	1.3	1.3	1.3	1.3	-	7.5	1.2	1.2	1.2	1.2	1.2	1.2	-	7.3	GOVT
12. computer and office equipment O&M	per year	1	1	1	1	1	1	-	6	100,000	1,220	1.3	1.3	1.3	1.3	1.3	1.3	-	7.5	1.2	1.2	1.2	1.2	1.2	1.2	-	7.3	GOVT
13. Office building Maintenance	per year	1	1	1	1	1	1	-	6	500,000	6,098	6.3	6.3	6.3	6.3	6.3	6.3	-	37.5	6.1	6.1	6.1	6.1	6.1	6.1	-	36.6	GOVT
Subtotal Operation and Maintenance												125.5	44.5	44.5	44.5	44.5	44.5	-	348.0	122.4	43.4	43.4	43.4	43.4	43.4	-	339.5	
Total Recurrent Costs												448.0	385.3	385.3	385.3	385.3	385.3	-	2 374.3	437.0	375.9	375.9	375.9	375.9	375.9	-	2 316.4	
Total												7 211.1	8 343.8	10 208.0	5 918.3	2 774.0	389.3	-	34 844.5	7 063.3	8 165.1	9 988.3	5 791.6	2 712.3	379.8	-	34 100.5	

\a for the TA staff

Table -3: Climate resilient surface water management

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Table 3. Climate resilient water resources management

Detailed Costs	Unit	Quantities								Unit Cost - Negotiation (BDT)	Unit Cost - Negotiation (US$)	Base Cost (US$ '000)								Totals Including Contingencies (US$ '000)								Fin. Rule
		18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total			18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	
I. Investment Costs																												
A. Sustainable water management for Producer Group and Farmer Marketing Group																												
1. Crop protection earthen dyke	Km	-	10	15	10	10	-	-	45			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
2. Re-excavation of khal/canal including SOHRA with channels																												
a. Re-excavation	Km	-	95	95	98	88	-	-	376	1,504,144	18,343	-	1 781.3	1 781.3	1 837.5	1 650.0	-	-	7 050.0	-	1 810.9	1 859.2	1 969.1	1 815.3	-	-	7 454.5	LOAN (65%)
b. Procurement of diesel operated Low Lift surface water pump set	Pomp set	125	125	-	-	-	-	-	250	404,444	4,932	625.0	625.0	-	-	-	-	-	1 250.0	622.6	636.2	-	-	-	-	-	1 258.8	LOAN (70%)
c. Installation of buried pipe line	Km	-	50	50	50	50	-	-	200	1,504,144	18,343	-	937.5	937.5	937.5	937.5	-	-	3 750.0	-	953.1	978.5	1 004.6	1 031.4	-	-	3 967.7	LOAN (70%)
Subtotal Re-excavation of khal/canal including SOHRA with channels												625.0	3 343.8	2 718.8	2 775.0	2 587.5	-	-	12 050.0	622.6	3 400.2	2 837.7	2 973.7	2 846.8	-	-	12 681.0	
3. Community pond excavation with homestead solar irrigation pump sets	Pond	-	20	35	20	20	-	-	95	1,253,453	15,286	-	312.5	546.9	312.5	312.5	-	-	1 484.4	-	317.7	570.8	334.9	343.8	-	-	1 567.2	LOAN (70%)
4. Extension of buried pipe line for existing BADC scheme	Km	-	12	12	14	10	-	-	48	1,504,144	18,343	-	225.0	225.0	262.5	187.5	-	-	900.0	-	228.7	234.8	281.3	206.3	-	-	951.2	LOAN (70%)
5. Rain water harvester installation	Site	-	750	750	750	750	-	-	3 000	200,552	2,446	-	1 875.0	1 875.0	1 875.0	1 875.0	-	-	7 500.0	-	1 906.2	1 957.1	2 009.3	2 062.9	-	-	7 935.4	LOAN (70%)
6. Construction of On Farm Water Management structure(Regulator) /a	Site	-	30	32	36	45	-	-	143	6,012,965	73,329	-	2 248.7	2 398.6	2 698.4	3 373.0	-	-	10 718.6	-	2 286.1	2 503.5	2 891.6	3 710.9	-	-	11 392.1	LOAN (70%)
7. Construction of Cattle Crossing/foot bridges	Site	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOAN (70%)
8. Construction of On Farm Water Management structure (water pass/equalizer/pipe culvert)	Site	-	50	50	50	50	-	-	200	300,829	3,669	-	187.5	187.5	187.5	187.5	-	-	750.0	-	190.6	195.7	200.9	206.3	-	-	793.5	LOAN (70%)
9. Construction of dug well with solar driven pump	Well site	-	2	3	3	2	-	-	10	1,002,762	12,229	-	25.0	37.5	37.5	25.0	-	-	125.0	-	25.4	39.1	40.2	27.5	-	-	132.2	LOAN (70%)
10. Provision of hose pipe for irrigation scheme	m	-	3 125	3 125	3 125	3 125	-	-	12 500	301	4	-	11.7	11.7	11.7	11.7	-	-	46.9	-	11.9	12.2	12.6	12.9	-	-	49.6	LOAN (70%)
11. Community Artisian well installation	wells	-	25	25	25	25	-	-	100	250,691	3,057	-	78.1	78.1	78.1	78.1	-	-	312.5	-	79.4	81.5	83.7	86.0	-	-	330.6	LOAN (70%)
12. Formation, training and development of Water User Groups(WUGs)	Group	-	260	260	260	260	-	-	1 040	55,153	673	-	178.8	178.8	178.8	178.8	-	-	715.0	-	174.9	174.9	174.9	174.9	-	-	699.5	LOAN (80%)
13. 20% Beneficiary participation /b	LS											250.0	959.4	1 046.0	1 027.3	1 027.3	1 027.3	-	5 337.1	247.7	975.3	1 091.8	1 100.9	1 130.4	1 160.6	-	5 706.7	BEN (100%)
Subtotal Sustainable water management for Producer Group and Farmer Marketing Group												875.0	9 445.4	9 303.8	9 444.2	9 843.8	1 027.3	-	39 939.4	870.2	9 596.6	9 699.3	10 103.9	10 808.5	1 160.6	-	42 239.2	
B. Institutional support																												
1. Construction of boundary wall for South Central	Site	2	-	-	-	-	-	-	2	3,508,750	42,790	87.5	-	-	-	-	-	-	87.5	86.7	-	-	-	-	-	-	86.7	GOVT
2. Overseas trainning (4 batches) /c	Batch	-	1	1	1	1	-	-	4	3,208,889	39,133	-	40.0	40.0	40.0	40.0	-	-	160.0	-	39.1	39.1	39.1	39.1	-	-	156.5	LOAN (80%)
3. Seminar and workshop	LS/year	-	1	1	1	1	1	-	5	200,556	2,446	-	2.5	2.5	2.5	2.5	2.5	-	12.5	-	2.4	2.4	2.4	2.4	2.4	-	12.2	LOAN (80%)
4. Printing and publication	year	1	1	1	1	1	-	-	5	140,389	1,712	1.8	1.8	1.8	1.8	1.8	-	-	8.8	1.7	1.7	1.7	1.7	1.7	-	-	8.6	LOAN (80%)
5. Vehicle and Equipment																												
a. Vehicles for BADC Engineers (1 Jeep and 3 pickup with canopy)																												
Jeep	each	1	-	-	-	-	-	-	1	9,605,556	117,141	118.8	-	-	-	-	-	-	118.8	118.3	-	-	-	-	-	-	118.3	LOAN (70%)
Pickup	each	3	-	-	-	-	-	-	3	5,763,333	70,285	213.8	-	-	-	-	-	-	213.8	212.9	-	-	-	-	-	-	212.9	LOAN (70%)
Subtotal Vehicles for BADC Engineers (1 Jeep and 3 pickup with canopy)												332.5	-	-	-	-	-	-	332.5	331.2	-	-	-	-	-	-	331.2	
b. Motorcycles	each	23	-	-	-	-	-	-	23	183,618	2,239	52.2	-	-	-	-	-	-	52.2	52.0	-	-	-	-	-	-	52.0	LOAN (70%)
c. Laptop, Computer, printer and accecessories	each	26	-	-	-	-	-	-	26	84,933	1,036	27.3	-	-	-	-	-	-	27.3	27.2	-	-	-	-	-	-	27.2	LOAN (70%)
d. Furniture & fixture for 18 offices	Region	3	-	-	-	-	-	-	3	5,055,556	61,653	187.5	-	-	-	-	-	-	187.5	186.8	-	-	-	-	-	-	186.8	LOAN (70%)
e. Photopier	each	18	-	-	-	-	-	-	18	203,840	2,486	45.4	-	-	-	-	-	-	45.4	45.2	-	-	-	-	-	-	45.2	LOAN (70%)
f. Projector	each	4	-	-	-	-	-	-	4	152,071	1,855	7.5	-	-	-	-	-	-	7.5	7.5	-	-	-	-	-	-	7.5	LOAN (70%)
g. Digital Display banner/ monitor with accessories	each	6	-	-	-	-	-	-	6	151,667	1,850	11.3	-	-	-	-	-	-	11.3	11.2	-	-	-	-	-	-	11.2	LOAN (70%)
h. LED TV (large;90–100') with accessories (for presentation)	each	1	-	-	-	-	-	-	1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOAN (70%)
i. Camera (Video)	each	18	-	-	-	-	-	-	18	121,333	1,480	27.0	-	-	-	-	-	-	27.0	26.9	-	-	-	-	-	-	26.9	LOAN (70%)
Subtotal ehicle and Equipment												690.6	-	-	-	-	-	-	690.6	688.0	-	-	-	-	-	-	688.0	
Subtotal Institutional support												779.9	44.3	44.3	44.3	44.3	2.5	-	959.4	776.4	43.3	43.3	43.3	43.3	2.4	-	952.0	
C. Technical Assistance																												
1. Training of Trainers (TOT)	training	1	1	1	-	-	-	-	3	481,333	5,870	6.0	6.0	6.0	-	-	-	-	18.0	5.9	5.9	5.9	-	-	-	-	17.6	LOAN (50%), GRANT (50%)
2. International consultants (irrigation, WUG & water harvesting)	pers_month	-	6	3	3	-	-	-	12	981,333	11,967	-	72.0	36.0	36.0	-	-	-	144.0	-	71.8	35.9	35.9	-	-	-	143.6	LOAN (50%), GRANT (50%)
3. Technical support services (unspecified National consultants))	pers_month	3	6	6	6	-	-	-	21	401,111	4,892	15.0	30.0	30.0	30.0	-	-	-	105.0	14.7	29.3	29.3	29.3	-	-	-	102.7	LOAN (50%), GRANT (50%)
4. Travel for TA staff	per year	0.5	1	1	1	0.5	-	-	4	1,470,072	17,928	9.2	18.3	18.3	18.3	9.2	-	-	73.3	9.0	17.9	17.9	17.9	9.0	-	-	71.7	LOAN (50%), GRANT (50%)
5. Project servicing expense (estimated at 7% of total expenditure)	LS											2.1	8.8	6.3	5.9	0.6	-	-	23.7	2.1	8.6	6.2	5.8	0.6	-	-	23.2	LOAN (50%), GRANT (50%)
Subtotal Technical Assistance												32.3	135.1	96.6	90.2	9.8	-	-	364.0	31.6	133.6	95.2	88.9	9.6	-	-	358.9	
Total Investment Costs												1 687.2	9 624.8	9 444.7	9 578.7	9 897.9	1 029.8	-	41 262.9	1 678.2	9 773.4	9 837.8	10 236.1	10 861.4	1 163.1	-	43 550.0	

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Table 3. Climate resilient w ater resources management

Detailed Costs	Unit	Quantities 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Unit Cost - Negotiation (BDT)	Unit Cost - Negotiation (US$)	Base Cost (US$ '000) 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Totals Including Contingencies (US$ '000) 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Oth Fin. Rule
II. Recurrent Costs																												
A. Staff salary																												
1. Assistant Project Co-ordinator	pers_month	12	12	12	12	12	12	-	72	62,000	756	9.3	9.3	9.3	9.3	9.3	9.3	-	55.8	9.1	9.1	9.1	9.1	9.1	9.1	-	54.4	GOVT
2. Project Engineer	pers_month	12	12	12	12	12	12	-	72	35,000	427	5.3	5.3	5.3	5.3	5.3	5.3	-	31.5	5.1	5.1	5.1	5.1	5.1	5.1	-	30.7	GOVT
3. Sub-Assistance Engeeniers	pers_month	276	276	276	276	276	276	-	1 656			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
4. Technicians	pers_month	552	552	552	552	552	552	-	3 312			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
5. Office Assistants	pers_month	516	516	516	516	516	516	-	3 096			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
6. Accountant	pers_month	192	192	192	192	192	192	-	1 152			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
7. Accounts & Finance Officer	pers_month	12	12	12	12	12	12	-	72	35,264	430	5.3	5.3	5.3	5.3	5.3	5.3	-	31.7	5.2	5.2	5.2	5.2	5.2	5.2	-	31.0	GOVT
8. Driver	pers_month	168	168	168	168	168	168	-	1 008	20,000	244	42.0	42.0	42.0	42.0	42.0	42.0	-	252.0	41.0	41.0	41.0	41.0	41.0	41.0	-	245.9	GOVT
9. Hired staff																												
a. Computer Operator	pers_month	12	12	12	12	12	12	-	72	30,227	369	4.5	4.5	4.5	4.5	4.5	4.5	-	27.2	4.6	4.7	4.8	5.0	5.1	5.2	-	29.4	LOAN (100%)
b. Data Entry Operator	pers_month	12	12	12	12	12	12	-	72	30,000	366	4.5	4.5	4.5	4.5	4.5	4.5	-	27.0	4.5	4.7	4.8	4.9	5.1	5.2	-	29.2	LOAN (100%)
c. Office Assistant	pers_month	12	12	12	12	12	12	-	72	30,000	366	4.5	4.5	4.5	4.5	4.5	4.5	-	27.0	4.5	4.7	4.8	4.9	5.1	5.2	-	29.2	LOAN (100%)
d. Driver	pers_month	48	48	48	48	48	48	-	288	30,000	366	18.0	18.0	18.0	18.0	18.0	18.0	-	108.0	18.2	18.7	19.2	19.7	20.2	20.8	-	116.7	LOAN (100%)
Subtotal Hired staff												31.5	31.5	31.5	31.5	31.5	31.5	-	189.2	31.8	32.7	33.6	34.5	35.5	36.4	-	204.5	
Subtotal Staff salary												93.4	93.4	93.4	93.4	93.4	93.4	-	560.2	92.1	93.0	93.9	94.8	95.8	96.8	-	566.5	
B. Travel allow ance for engineers, technicians, and staff	per_year	1	1	1	1	1	1	-	6	10,000,000	121,951	125.0	125.0	125.0	125.0	125.0	125.0	-	750.0	122.0	122.0	122.0	122.0	122.0	122.0	-	731.7	GOVT
C. Survey, Mobilization & Monitoring Allow ance	per year	1	1	1	1	1	1	-	6	1,100,000	13,415	13.8	13.8	13.8	13.8	13.8	13.8	-	82.5	13.4	13.4	13.4	13.4	13.4	13.4	-	80.5	GOVT
D. Field monitoring allow ance	per year	1	1	1	1	1	1	-	6	8,000,000	97,561	100.0	100.0	100.0	100.0	100.0	100.0	-	600.0	97.6	97.6	97.6	97.6	97.6	97.6	-	585.4	GOVT
E. O&M																												
1. Electricity	per year	1	1	1	1	1	1	-	6	600,000	7,317	7.5	7.5	7.5	7.5	7.5	7.5	-	45.0	7.3	7.3	7.3	7.3	7.3	7.3	-	43.9	GOVT
2. Local tax	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
3. Postal charge	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
4. Communication	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
5. Registration and road taxed for Car	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
6. Fuel	per year	1	1	1	1	1	1	-	6	3,160,000	38,537	39.5	39.5	39.5	39.5	39.5	39.5	-	237.0	38.5	38.5	38.5	38.5	38.5	38.5	-	231.2	GOVT
7. Issurance and Bank charge	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
8. Stationery	per year	1	1	1	1	1	1	-	6	958,000	11,683	12.0	12.0	12.0	12.0	12.0	12.0	-	71.9	11.7	11.7	11.7	11.7	11.7	11.7	-	70.1	GOVT
9. Advertisesment and tendering	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
10. logistic fees	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
11. Casual labor	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
12. Honorarium	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
13. Vehicle O&M	per year	1	1	1	1	1	1	-	6	1,350,000	16,463	16.9	16.9	16.9	16.9	16.9	16.9	-	101.3	16.5	16.5	16.5	16.5	16.5	16.5	-	98.8	GOVT
14. Furniture O&M	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
15. computer and office equipment O&M	per year											-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
16. Office building Renovation and Maintenance	per year	1	1	1	-	-	-	-	3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
17. irragation O&M	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
18. O&M of hydraulic structures	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
19. Overtime	per year	1	1	1	1	1	1	-	6			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOVT
Subtotal O&M												75.9	75.9	75.9	75.9	75.9	75.9	-	455.1	74.0	74.0	74.0	74.0	74.0	74.0	-	444.0	
Total Recurrent Costs												408.0	408.0	408.0	408.0	408.0	408.0	-	2 447.8	399.1	399.9	400.8	401.8	402.7	403.7	-	2 408.0	
Total												2 095.1	10 032.7	9 852.6	9 986.7	10 305.8	1 437.7	-	43 710.7	2 077.2	10 173.4	10 238.6	10 637.9	11 264.1	1 566.8	-	45 958.1	

\a including cattle-crossing and foot-bridges
\b in the form of materials, labour, etc
\c a batch of 8 persons, staff or scientists

Table -4: Institutional support for capacity building

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Table 4. Institutional Support and Project Management

Detailed Costs		Quantities								Unit Cost - Negotiation	Unit Cost - Negotiation	Base Cost (US$ '000)								Totals Including Contingencies (US$ '000)								Oth
	Unit	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	(BDT)	(US$)	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Fin. Rule
I. Investment Costs																												
A. KM and Communication product																												
(such as video documentary, printing material, stand etc.)	per year	0.5	1	1	1	1	1	0.5	6	1,002,778	12,229	6.3	12.5	12.5	12.5	12.5	12.5	6.3	75.0	6.1	12.2	12.2	12.2	12.2	12.2	6.1	73.4	LOAN (80%)
B. MIS softw are support	per year	0.5	1	1	1	1	1	0.5	6	1,671,229	20,381	10.4	20.8	20.8	20.8	20.8	20.8	10.4	125.0	10.2	20.4	20.4	20.4	20.4	20.4	10.2	122.3	LOAN (80%)
C. Accounting softw are, set up,																												
training and follow up support	LS	1	-	-	-	-	-	-	1	1,002,778	12,229	12.5	-	-	-	-	-	-	12.5	12.2	-	-	-	-	-	-	12.2	LOAN (80%)
D. Survey and study																												
1. Baseline, midterm, and Endline survey	survey	1	-	-	1	-	-	1	3	3,008,333	36,687	37.5	-	-	37.5	-	-	37.5	112.5	36.7	-	-	36.7	-	-	36.7	110.1	LOAN (80%)
2. Annual Outcome Survey	survey	-	1	1	1	1	1	1	6	1,504,167	18,343	-	18.8	18.8	18.8	18.8	18.8	18.8	112.5	-	18.3	18.3	18.3	18.3	18.3	18.3	110.1	LOAN (80%)
3. Other studies and surveys /a	LS	-	1	1	1	1	1	1	6	1,002,778	12,229	-	12.5	12.5	12.5	12.5	12.5	12.5	75.0	-	12.2	12.2	12.2	12.2	12.2	12.2	73.4	LOAN (80%)
Subtotal Survey and study												37.5	31.3	31.3	68.8	31.3	31.3	68.8	300.0	36.7	30.6	30.6	67.3	30.6	30.6	67.3	293.5	
E. Workshop and Trainning																												
1. Start up w orkshop at national level	LS	1	-	-	-	-	-	-	1	5,013,889	61,145	62.5	-	-	-	-	-	-	62.5	61.1	-	-	-	-	-	-	61.1	LOAN (80%)
2. Start up w orkshop at district level	district	11	-	-	-	-	-	-	11	501,389	6,114	68.8	-	-	-	-	-	-	68.8	67.3	-	-	-	-	-	-	67.3	LOAN (80%)
3. Annual Supervision w orkshop	per year	0.5	1	1	1	1	1	0.5	6	5,013,889	61,145	31.3	62.5	62.5	62.5	62.5	62.5	31.3	375.0	30.6	61.1	61.1	61.1	61.1	61.1	30.6	366.9	LOAN (80%)
4. Various training, national	Batch	5	5	5	5	-	-	-	20	752,083	9,172	46.9	46.9	46.9	46.9	-	-	-	187.5	45.9	45.9	45.9	45.9	-	-	-	183.4	LOAN (80%)
Subtotal Workshop and Trainning												209.4	109.4	109.4	109.4	62.5	62.5	31.3	693.8	204.8	107.0	107.0	107.0	61.1	61.1	30.6	678.7	
F. Policy participation and																												
engagement with COSOP activities																												
1. Support the country's agricultural census	census	1	-	-	-	-	-	-	1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOAN (80%)
2. Other policy engagement and COSOP activities	LS	1	1	1	1	1	-	-	5	1,002,778	12,229	12.5	12.5	12.5	12.5	12.5	-	-	62.5	12.2	12.2	12.2	12.2	12.2	-	-	61.1	LOAN (80%)
Subtotal Policy participation and																												
engagement with COSOP activities												12.5	12.5	12.5	12.5	12.5	-	-	62.5	12.2	12.2	12.2	12.2	12.2	-	-	61.1	
G. Vehicle and Equipment																												
1. Vehicles Jeep & pickups																												
4WD jeep	each	1	-	-	-	-	-	-	1	9,605,556	117,141	118.8	-	-	-	-	-	-	118.8	118.3	-	-	-	-	-	-	118.3	LOAN (70%)
Double cabin pickup	each	1	-	-	-	-	-	-	1	5,763,333	70,285	71.3	-	-	-	-	-	-	71.3	71.0	-	-	-	-	-	-	71.0	LOAN (70%)
Subtotal ehicles Jeep & pickups												190.0	-	-	-	-	-	-	190.0	189.3	-	-	-	-	-	-	189.3	
2. Equipment, miscellaneous /b	LS	1	-	-	-	-	-	-	1	2,022,222	24,661	25.0	-	-	-	-	-	-	25.0	24.9	-	-	-	-	-	-	24.9	LOAN (70%)
Subtotal Vehicle and Equipment												215.0	-	-	-	-	-	-	215.0	214.2	-	-	-	-	-	-	214.2	
H. Technical Assistance																												
1. Non-expendable Procurement /c	LS	1	-	-	-	-	-	-	1	6,837,778	83,388	85.0	-	-	-	-	-	-	85.0	83.4	-	-	-	-	-	-	83.4	LOAN (50%), GRANT (50%)
2. Expendable Procurement /d	LS/year	0.5	1	1	1	0.5	-	-	4	401,111	4,892	2.5	5.0	5.0	5.0	2.5	-	-	20.0	2.4	4.9	4.9	4.9	2.4	-	-	19.6	LOAN (50%), GRANT (50%)
3. International Operation Officer /e	pers_month	6	12	12	12	6	-	-	48	402,222	4,905	30.0	60.0	60.0	60.0	30.0	-	-	240.0	29.4	58.9	58.9	58.9	29.4	-	-	235.4	GRANT (50%), LOAN (50%)
4. National Consultant - KM and Communication	pers_month	-	3	3	3	3	-	-	12	401,111	4,892	-	15.0	15.0	15.0	15.0	-	-	60.0	-	14.7	14.7	14.7	14.7	-	-	58.7	LOAN (50%), GRANT (50%)
5. Technical support services	pers_month	-	4	4	4	-	-	-	12	401,111	4,892	-	20.0	20.0	20.0	-	-	-	60.0	-	19.6	19.6	19.6	-	-	-	58.7	LOAN (50%), GRANT (50%)
6. Office support staff for TA team	pers_month	12	24	24	24	12	-	-	96	80,222	978	12.0	24.0	24.0	24.0	12.0	-	-	96.0	11.7	23.5	23.5	23.5	11.7	-	-	93.9	LOAN (50%), GRANT (50%)
7. General Operation Expenses	LS/year	0.5	1	1	1	0.5	-	-	4	521,444	6,359	3.3	6.5	6.5	6.5	3.3	-	-	26.0	3.2	6.4	6.4	6.4	3.2	-	-	25.4	LOAN (50%), GRANT (50%)
8. TA staff Travel	LS/year	0.5	1	1	1	0.5	-	-	4	393,089	4,794	2.5	4.9	4.9	4.9	2.5	-	-	19.6	2.4	4.8	4.8	4.8	2.4	-	-	19.2	LOAN (50%), GRANT (50%)
9. Project Servicing Expenses (at 7% of total cost)	LS											9.5	9.5	9.5	9.5	4.6	-	-	42.4	9.2	9.2	9.2	9.2	4.5	-	-	41.4	LOAN (50%), GRANT (50%)
Subtotal Technical Assistance												144.7	144.9	144.9	144.9	69.8	-	-	649.0	141.8	141.9	141.9	141.9	68.3	-	-	635.8	
I. Country Program Support Unit /f	per year	0.5	1	1	1	1	1	0.5	6	6,591,638	80,386	41.1	82.2	82.2	82.2	82.2	82.2	41.1	493.1	40.2	80.4	80.4	80.4	80.4	80.4	40.2	482.3	GRANT (100%)
Total Investment Costs												689.3	413.5	413.5	451.0	291.5	209.3	157.8	2 625.8	678.5	404.7	404.7	441.4	285.3	204.7	154.3	2 573.5	

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Table 4. Institutional Support and Project Management
Detailed Costs

		Quantities								Unit Cost - Negotiation	Unit Cost - Negotiation	Base Cost (US$ '000)								Totals Including Contingencies (US$ '000)								
	Unit	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	(BDT)	(US$)	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Fin. Rule
II. Recurrent Costs																												
A. Staff Salary (at Project Directorate)																												
1. Lead Project Director	pers_month	6	12	12	12	12	12	6	72	90,200	1,100	6.8	13.5	13.5	13.5	13.5	13.5	6.8	81.2	6.6	13.2	13.2	13.2	13.2	13.2	6.6	79.2	LOAN (100%)
2. Project Coordinators, four	pers_month	24	48	48	48	48	48	24	288	60,000	732	18.0	36.0	36.0	36.0	36.0	36.0	18.0	216.0	18.2	37.3	38.3	39.4	40.5	41.6	21.4	236.7	LOAN (100%)
3. Administrative Officer	pers_month	6	12	12	12	12	12	6	72	40,000	488	3.0	6.0	6.0	6.0	6.0	6.0	3.0	36.0	2.9	5.9	5.9	5.9	5.9	5.9	2.9	35.1	GOVT
4. Other Supporting Staff	pers month	12	24	24	24	24	24	12	144	30,000	366	4.5	9.0	9.0	9.0	9.0	9.0	4.5	54.0	4.4	8.8	8.8	8.8	8.8	8.8	4.4	52.7	GOVT
Subtotal Staff Salary (at Project Directorate)												32.3	64.5	64.5	64.5	64.5	64.5	32.3	387.2	32.1	65.1	66.2	67.2	68.3	69.4	35.3	403.7	
B. Staff Salary (Operational Support Team)																												
1. Project Management Specialist	Person Month	6	12	12	12	12	12	6	72	320,000	3,902	24.0	48.0	48.0	48.0	48.0	48.0	24.0	288.0	24.2	49.8	51.1	52.5	54.0	55.5	28.5	315.5	LOAN (100%)
2. Financial Management Specialist	Person Month	6	12	12	12	12	12	6	72	320,000	3,902	24.0	48.0	48.0	48.0	48.0	48.0	24.0	288.0	24.2	49.8	51.1	52.5	54.0	55.5	28.5	315.5	LOAN (100%)
3. Procurement Specialist	pers_month	6	12	12	12	12	12	6	72	320,000	3,902	24.0	48.0	48.0	48.0	48.0	48.0	24.0	288.0	24.2	49.8	51.1	52.5	54.0	55.5	28.5	315.5	LOAN (100%)
4. Procurement Assistant	pers_month	6	12	12	12	12	12	6	72	80,000	976	6.0	12.0	12.0	12.0	12.0	12.0	6.0	72.0	6.1	12.4	12.8	13.1	13.5	13.9	7.1	78.9	LOAN (100%)
5. M&E-KM Specialist	pers_month	6	12	12	12	12	12	6	72	320,000	3,902	24.0	48.0	48.0	48.0	48.0	48.0	24.0	288.0	24.2	49.8	51.1	52.5	54.0	55.5	28.5	315.5	LOAN (100%)
6. Accountants	Person Month	36	72	72	72	72	72	36	432	64,000	780	28.8	57.6	57.6	57.6	57.6	57.6	28.8	345.6	29.1	59.7	61.3	63.0	64.8	66.5	34.2	378.6	LOAN (100%)
7. Technical Component Coordinators	Person Month	18	36	36	36	36	36	18	216			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOAN (100%)
8. Gender Development & Safeguard/Governance Specialist	Person Month	6	12	12	12	12	12	6	72	320,000	3,902	24.0	48.0	48.0	48.0	48.0	48.0	24.0	288.0	24.2	49.8	51.1	52.5	54.0	55.5	28.5	315.5	LOAN (100%)
9. Other Supporting Staff	Person Month	12	24	24	24	24	24	12	144	30,000	366	4.5	9.0	9.0	9.0	9.0	9.0	4.5	54.0	4.5	9.3	9.6	9.8	10.1	10.4	5.3	59.2	LOAN (100%)
Subtotal Staff Salary (Operational Support Team)												159.3	318.6	318.6	318.6	318.6	318.6	159.3	1 911.6	160.7	330.2	339.3	348.7	358.2	368.1	189.1	2 094.4	
C. Staff Salary (at District Level)																												
1. Lead Technical Officers	Person Month	198	396	396	396	396	396	198	2 376	35,000	427	86.6	173.3	173.3	173.3	173.3	173.3	86.6	1 039.5	87.4	179.6	184.5	189.6	194.8	200.2	102.8	1 138.9	LOAN (100%)
2. Finance/Accounting Specialists	Person Month	528	528	528	528	528	528	-	3 168	30,000	366	198.0	198.0	198.0	198.0	198.0	198.0	-	1 188.0	199.7	205.2	210.9	216.7	222.6	228.8	-	1 283.9	LOAN (100%)
3. Procurement Specialists	Person Month	528	528	528	528	528	528	-	3 168	30,000	366	198.0	198.0	198.0	198.0	198.0	198.0	-	1 188.0	193.2	193.2	193.2	193.2	193.2	193.2	-	1 159.0	GOVT
4. M&E-KM Specialist	Person Month	528	528	528	528	528	528	-	3 168	30,000	366	198.0	198.0	198.0	198.0	198.0	198.0	-	1 188.0	193.2	193.2	193.2	193.2	193.2	193.2	-	1 159.0	GOVT
5. Operational Assistant	Person Month	528	528	528	528	528	528	-	3 168	23,000	280	151.8	151.8	151.8	151.8	151.8	151.8	-	910.8	148.1	148.1	148.1	148.1	148.1	148.1	-	888.6	GOVT
Subtotal Staff Salary (at District Level)												832.4	919.1	919.1	919.1	919.1	919.1	86.6	5 514.3	821.6	919.3	929.8	940.7	951.9	963.4	102.8	5 629.5	
D. Staff Salary (at Upazila/Union Level)																												
1. Lead Farmers	Person Month	3 000	3 000	3 000	3 000	3 000	3 000	-	18 000	7,000	85	262.5	262.5	262.5	262.5	262.5	262.5	-	1 575.0	264.8	272.1	279.6	287.3	295.2	303.3	-	1 702.2	LOAN (100%)
E. Travel cost and allowance for National and District management offices	per year	0.5	1	1	1	1	1	0.5	6	1,000,000	12,195	6.3	12.5	12.5	12.5	12.5	12.5	6.3	75.0	6.1	12.2	12.2	12.2	12.2	12.2	6.1	73.2	GOVT
F. Office operating cost for National and Disstrict Management Offices	per year	0.5	1	1	1	1	1	0.5	6	1,000,000	12,195	6.3	12.5	12.5	12.5	12.5	12.5	6.3	75.0	6.1	12.2	12.2	12.2	12.2	12.2	6.1	73.2	GOVT
G. Vehicle O&M	per year	0.5	1	1	1	1	1	0.5	6	1,000,000	12,195	6.3	12.5	12.5	12.5	12.5	12.5	6.3	75.0	6.1	12.2	12.2	12.2	12.2	12.2	6.1	73.2	GOVT
Total Recurrent Costs												1 305.2	1 602.2	1 602.2	1 602.2	1 602.2	1 602.2	296.9	9 613.1	1 297.5	1 623.3	1 651.5	1 680.5	1 710.2	1 740.8	345.5	10 049.2	
Total												1 994.5	2 015.7	2 015.7	2 053.2	1 893.7	1 811.5	454.7	12 238.9	1 975.9	2 028.0	2 056.2	2 121.8	1 995.5	1 945.5	499.9	12 622.7	

ia such as assessment study, impact study, etc
ib purchase unspecified office equipment
ic such as computer, copier, furniture, office equipment,one vehicle etc all tax free to be handed over to PD in the terminal year
id stationery etc for the TA team
ie for the purposees of reporting, progress monitoring, TA team coordination etc
if to be placed under ERD

SUMMARY COST TABLES

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Components Project Cost Summary	**(BDT '000)**			**(US$ '000)**			**% Foreign Exchange**	**% Total Base Costs**
	Local	**Foreign**	**Total**	**Local**	**Foreign**	**Total**		
1. Enhanced production of HVC and technology adoption	1 217 083	180 011	1 397 094	14 842.5	2 195.3	17 037.7	13	16
2. Processing and marketing of HVC	2 480 911	314 890	2 795 802	30 255.0	3 840.1	34 095.1	11	32
3. Climate resilient w ater resource management	3 113 023	394 361	3 507 384	37 963.7	4 809.3	42 773.0	11	40
4. Project Management	950 415	29 486	979 901	11 590.4	359.6	11 950.0	3	11
Total BASELINE COSTS	7 761 433	918 748	8 680 181	94 651.6	11 204.2	105 855.9	11	100
Physical Contingencies	9 791	-	9 791	119.4	-	119.4	-	-
Price Contingencies	299 266	18 051	317 317	3 649.6	220.1	3 869.7	6	4
Total PROJECT COSTS	8 070 490	936 799	9 007 289	98 420.6	11 424.4	109 845.0	10	104

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Project Components by Year -- Base Costs
(US$ '000)

	Base Cost							
	18/19	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**Total**
1. Enhanced production of HVC and technology adoption	2 935.2	4 149.4	4 279.7	3 095.0	1 832.8	745.5	-	17 037.7
2. Processing and marketing of HVC	7 058.0	8 165.1	9 988.3	5 791.6	2 712.3	379.8	-	34 095.1
3. Climate resilient w ater resource management	2 059.2	9 820.2	9 638.2	9 769.3	10 080.9	1 405.2	-	42 773.0
4. Project Management	1 949.8	1 967.8	1 967.8	2 004.5	1 848.4	1 767.8	444.0	11 950.0
Total BASELINE COSTS	14 002.3	24 102.4	25 874.0	20 660.4	16 474.4	4 298.3	444.0	105 855.9
Physical Contingencies	14.8	19.9	19.9	19.9	19.9	19.9	5.1	119.4
Price Contingencies	46.0	410.7	704.6	1 005.1	1 333.3	319.4	50.7	3 869.7
Total PROJECT COSTS	14 063.0	24 533.0	26 598.5	21 685.4	17 827.6	4 637.6	499.9	109 845.0
Taxes	1 218.1	2 022.7	2 030.8	1 537.8	1 246.9	160.3	43.4	8 260.2
Foreign Exchange	2 128.9	2 735.2	2 695.0	2 123.7	1 522.0	203.8	15.8	11 424.4

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Procurement Arrangements - Non ICB/LCB Aggr (US$ '000)	**curement Method** National Competitive Bidding	Consulting Services	Other	N.B.F.	Total
A. Works	42 145.5	-	-	86.7	42 232.2
	(25 041.2)				(25 041.2)
B. Vehicle and equipment	3 631.8	-	-	-	3 631.8
	(2 542.2)				(2 542.2)
C. Goods, services and inputs	-	-	20 388.3	-	20 388.3
			(10 753.6)		(10 753.6)
D. Training, w orkshops, studies, surveys	-	-	25 193.6	-	25 193.6
			(18 577.7)		(18 577.7)
E. Technical assistance	-	2 743.3	475.1	-	3 218.4
		(1 299.6)	(218.1)		(1 517.7)
F. Salary and allow ances	-	-	2 018.0	11 240.3	13 258.4
			(1 816.2)	(4 249.5)	(6 065.8)
G. Opearting costs	-	-	-	1 922.4	1 922.4
Total	45 777.3	2 743.3	48 075.0	13 249.4	109 845.0
	(27 583.4)	(1 299.6)	(31 365.7)	(4 249.5)	(64 498.2)

Note: Figures in parenthesis are the respective amounts financed by IFAD Loan

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Disbursement Accounts by Financiers
(US$ '000)

	Government		IFAD Loan		IFAD GRANT		Beneficiary participation		Private Sector		Total			Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	For. Exch.	Taxes)	Taxes
1. Works	11 484.3	27.2	25 041.2	59.3	-	-	5 706.7	13.5	-	-	42 232.2	38.4	4 193.9	34 576.6	3 461.7
2. Vehicles & equipment	1 089.5	30.0	2 542.2	70.0	-	-	-	-	-	-	3 631.8	3.3	1 463.9	1 804.7	363.2
3. Goods, services and inputs	1 933.3	9.5	10 753.6	52.7	482.3	2.4	861.7	4.2	6 357.3	31.2	20 388.3	18.6	2 084.3	17 245.0	1 059.1
4. Training, workshops, surveys & studies	4 841.6	19.2	18 577.7	73.7	-	-	-	-	1 774.3	7.0	25 193.6	22.9	2 575.2	20 099.0	2 519.4
5. Technical assistance	182.9	5.7	1 517.7	47.2	1 517.7	47.2	-	-	-	-	3 218.4	2.9	1 107.1	1 928.4	182.9
6. Salary and allowances	7 192.6	54.2	6 065.8	45.8	-	-	-	-	-	-	13 258.4	12.1	-	12 584.4	674.0
7. Opearing costs	1 922.4	100.0	-	-	-	-	-	-	-	-	1 922.4	1.8	-	1 922.4	-
Total PROJECT COSTS	28 646.6	26.1	64 498.2	58.7	2 000.0	1.8	6 568.5	6.0	8 131.6	7.4	109 845.0	100.0	11 424.4	90 160.4	8 260.2

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Components by Financiers
(US$ '000)

	Government		IFAD Loan		IFAD GRANT		Beneficiary participation		Private Sector		Total			Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	For. Exch.	Taxes)	Taxes
1. Enhanced production of HVC and technology adoption	3 459.5	20.2	10 505.6	61.2	404.6	2.4	838.1	4.9	1 956.1	11.4	17 163.8	15.6	2 204.4	13 494.4	1 464.9
2. Processing and marketing of HVC	6 792.7	19.9	20 443.0	59.9	665.6	2.0	23.7	0.1	6 175.5	18.1	34 100.5	31.0	3 841.2	27 949.8	2 309.4
3. Climate resilient water resource management	13 850.9	30.1	26 238.9	57.1	161.5	0.4	5 706.7	12.4	-	-	45 958.1	41.8	5 018.7	37 316.1	3 623.2
4. Project Management	4 543.6	36.0	7 310.7	57.9	768.4	6.1	-	-	-	-	12 622.7	11.5	360.0	11 400.0	862.6
Total PROJECT COSTS	28 646.6	26.1	64 498.2	58.7	2 000.0	1.8	6 568.5	6.0	8 131.6	7.4	109 845.0	100.0	11 424.4	90 160.4	8 260.2

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Procurement Accounts by Financiers
(US$ '000)

	Government		IFAD Loan		IFAD GRANT		Beneficiary participation		Private Sector		Total			Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	For. Exch.	Taxes)	Taxes
1. Works	11 484.3	27.2	25 041.2	59.3	-	-	5 706.7	13.5	-	-	42 232.2	38.4	4 193.9	34 576.6	3 461.7
2. Vehicle and equipment	1 089.5	30.0	2 542.2	70.0	-	-	-	-	-	-	3 631.8	3.3	1 463.9	1 804.7	363.2
3. Goods, services and inputs	1 933.3	9.5	10 753.6	52.7	482.3	2.4	861.7	4.2	6 357.3	31.2	20 388.3	18.6	2 084.3	17 245.0	1 059.1
4. Training, workshops, studies, surveys	4 841.6	19.2	18 577.7	73.7	-	-	-	-	1 774.3	7.0	25 193.6	22.9	2 575.2	20 099.0	2 519.4
5. Technical assistance	182.9	5.7	1 517.7	47.2	1 517.7	47.2	-	-	-	-	3 218.4	2.9	1 107.1	1 928.4	182.9
6. Salary and allowances	7 192.6	54.2	6 065.8	45.8	-	-	-	-	-	-	13 258.4	12.1	-	12 584.4	674.0
7. Opearting costs	1 922.4	100.0	-	-	-	-	-	-	-	-	1 922.4	1.8	-	1 922.4	-
Total PROJECT COSTS	28 646.6	26.1	64 498.2	58.7	2 000.0	1.8	6 568.5	6.0	8 131.6	7.4	109 845.0	100.0	11 424.4	90 160.4	8 260.2

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Expenditure Accounts by Financiers (US$ '000)	**Government**		**IFAD Loan**		**IFAD GRANT**		**Beneficiary participation**		**Private Sector**		**Total**			**Local (Excl. Taxes)**	**Duties & Taxes**
	Amount	**%**	**Amount**	**%**	**Amount**	**%**	**Amount**	**%**	**Amount**	**%**	**Amount**	**%**	**For. Exch.**		
I. Investment Costs															
A. Works	11 484.3	27.2	25 041.2	59.3	-	-	5 706.7	13.5	-	-	42 232.2	38.4	4 193.9	34 576.6	3 461.7
B. Vehicles and equipment	1 089.5	30.0	2 542.2	70.0	-	-	-	-	-	-	3 631.8	3.3	1 463.9	1 804.7	363.2
C. Goods, services and inputs	1 933.3	9.5	10 753.6	52.7	482.3	2.4	861.7	4.2	6 357.3	31.2	20 388.3	18.6	2 084.3	17 245.0	1 059.1
D. Training, w orkshop, surveys and studies	4 841.6	19.2	18 577.7	73.7	-	-	-	-	1 774.3	7.0	25 193.6	22.9	2 575.2	20 099.0	2 519.4
E. Technical assistance	182.9	5.7	1 517.7	47.2	1 517.7	47.2	-	-	-	-	3 218.4	2.9	1 107.1	1 928.4	182.9
Total Investment Costs	19 531.6	20.6	58 432.5	61.7	2 000.0	2.1	6 568.5	6.9	8 131.6	8.6	94 664.2	86.2	11 424.4	75 653.6	7 586.2
II. Recurrent Costs															
A. Salary and allow ances	7 192.6	54.2	6 065.8	45.8	-	-	-	-	-	-	13 258.4	12.1	-	12 584.4	674.0
B. Opearating costs	1 922.4	100.0	-	-	-	-	-	-	-	-	1 922.4	1.8	-	1 922.4	-
Total Recurrent Costs	9 115.0	60.0	6 065.8	40.0	-	-	-	-	-	-	15 180.8	13.8	-	14 506.8	674.0
Total PROJECT COSTS	28 646.6	26.1	64 498.2	58.7	2 000.0	1.8	6 568.5	6.0	8 131.6	7.4	109 845.0	100.0	11 424.4	90 160.4	8 260.2

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Expenditure Accounts Project Cost Summary	**(BDT '000)**			**(US$ '000)**			**% Foreign Exchange**	**% Total Base Costs**
	Local	**Foreign**	**Total**	**Local**	**Foreign**	**Total**		
I. Investment Costs								
A. Works	2 869 794	326 755	3 196 550	34 997.5	3 984.8	38 982.3	10	37
B. Vehicles and equipment	174 668	119 136	293 805	2 130.1	1 452.9	3 583.0	41	3
C. Goods, services and inputs	1 500 932	170 912	1 671 845	18 304.1	2 084.3	20 388.3	10	19
D. Training, w orkshop, surveys and studies	1 854 706	211 165	2 065 871	22 618.4	2 575.2	25 193.6	10	24
E. Technical assistance	173 127	90 779	263 906	2 111.3	1 107.1	3 218.4	34	3
Total Investment Costs	6 573 228	918 748	7 491 977	80 161.3	11 204.2	91 365.6	12	86
II. Recurrent Costs								
A. Salary and allow ances	1 030 568	-	1 030 568	12 567.9	-	12 567.9	-	12
B. Opearating costs	157 637	-	157 637	1 922.4	-	1 922.4	-	2
Total Recurrent Costs	1 188 205	-	1 188 205	14 490.3	-	14 490.3	-	14
Total BASELINE COSTS	7 761 433	918 748	8 680 181	94 651.6	11 204.2	105 855.9	11	100
Physical Contingencies	9 791	-	9 791	119.4	-	119.4	-	-
Price Contingencies	299 266	18 051	317 317	3 649.6	220.1	3 869.7	6	4
Total PROJECT COSTS	8 070 490	936 799	9 007 289	98 420.6	11 424.4	109 845.0	10	104

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Project Components by Year -- Totals Including Contingencies	Totals Including Contingencies (BDT '000)								Totals Including Contingencies (US$ '000)							
	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total
1. Enhanced production of HVC and technology adoption	241 617	341 657	353 861	256 994	152 167	61 134	-	1 407 430	2 946.5	4 166.5	4 315.4	3 134.1	1 855.7	745.5	-	17 163.8
2. Processing and marketing of HVC	579 194	669 535	819 043	474 911	222 411	31 142	-	2 796 237	7 063.3	8 165.1	9 988.3	5 791.6	2 712.3	379.8	-	34 100.5
3. Climate resilient water resource management	170 332	834 217	839 568	872 309	923 660	128 476	-	3 768 562	2 077.2	10 173.4	10 238.6	10 637.9	11 264.1	1 566.8	-	45 958.1
4. Project Management	162 026	166 296	168 606	173 988	163 627	159 528	40 988	1 035 061	1 975.9	2 028.0	2 056.2	2 121.8	1 995.5	1 945.5	499.9	12 622.7
Total PROJECT COSTS	1 153 169	2 011 705	2 181 079	1 778 202	1 461 866	380 280	40 988	9 007 289	14 063.0	24 533.0	26 598.5	21 685.4	17 827.6	4 637.6	499.9	109 845.0

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Project Components by Year -- Investment/Recurrent Costs
(US$ '000)

	Totals Including Contingencies							
	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total
A. Enhanced production of HVC and technology adoption								
Investment Costs	2 904.6	4 093.5	4 242.3	3 061.0	1 782.6	672.5	-	16 756.6
Recurrent Costs	41.9	73.1	73.1	73.1	73.1	73.1	-	407.2
Subtotal Enhanced production of HVC and technology adoption	2 946.5	4 166.5	4 315.4	3 134.1	1 855.7	745.5	-	17 163.8
B. Processing and marketing of HVC								
Investment Costs	6 626.3	7 789.2	9 612.5	5 415.7	2 336.5	3.9	-	31 784.1
Recurrent Costs	437.0	375.9	375.9	375.9	375.9	375.9	-	2 316.4
Subtotal Processing and marketing of HVC	7 063.3	8 165.1	9 988.3	5 791.6	2 712.3	379.8	-	34 100.5
C. Climate resilient water resource management								
Investment Costs	1 678.2	9 773.4	9 837.8	10 236.1	10 861.4	1 163.1	-	43 550.0
Recurrent Costs	399.1	399.9	400.8	401.8	402.7	403.7	-	2 408.0
Subtotal Climate resilient water resource management	2 077.2	10 173.4	10 238.6	10 637.9	11 264.1	1 566.8	-	45 958.1
D. Project Management								
Investment Costs	678.5	404.7	404.7	441.4	285.3	204.7	154.3	2 573.5
Recurrent Costs	1 297.5	1 623.3	1 651.5	1 680.5	1 710.2	1 740.8	345.5	10 049.2
Subtotal Project Management	1 975.9	2 028.0	2 056.2	2 121.8	1 995.5	1 945.5	499.9	12 622.7
Total PROJECT COSTS	14 063.0	24 533.0	26 598.5	21 685.4	17 827.6	4 637.6	499.9	109 845.0
Total Investment Costs	11 887.6	22 060.8	24 097.3	19 154.3	15 265.8	2 044.2	154.3	94 664.2
Total Recurrent Costs	2 175.5	2 472.2	2 501.3	2 531.1	2 561.8	2 593.4	345.5	15 180.8

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Expenditure Accounts by Years -- Base Costs
(US$ '000)

	Base Cost								Foreign Exchange	
	18/19	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**Total**	**%**	**Amount**
I. Investment Costs										
A. Works	513.5	8 892.6	9 459.4	9 473.6	9 638.6	1 004.7	-	38 982.3	10.2	3 984.8
B. Vehicles and equipment	2 966.5	616.5	-	-	-	-	-	3 583.0	40.5	1 452.9
C. Goods, services and inputs	1 673.4	3 849.6	5 770.5	4 902.5	3 407.6	728.3	56.5	20 388.3	10.2	2 084.3
D. Training, w orkshop, surveys and studies	6 423.1	7 313.9	7 291.1	3 027.1	885.4	155.3	97.8	25 193.6	10.2	2 575.2
E. Technical assistance	275.5	1 019.8	943.0	847.2	132.9	-	-	3 218.4	34.4	1 107.1
Total Investment Costs	11 851.9	21 692.3	23 464.0	18 250.4	14 064.4	1 888.3	154.3	91 365.6	12.3	11 204.2
II. Recurrent Costs										
A. Salary and allow ances	1 796.2	2 098.8	2 098.8	2 098.8	2 098.8	2 098.8	277.5	12 567.9	-	-
B. Opearating costs	354.2	311.2	311.2	311.2	311.2	311.2	12.2	1 922.4	-	-
Total Recurrent Costs	2 150.4	2 410.0	2 410.0	2 410.0	2 410.0	2 410.0	289.7	14 490.3	-	-
Total BASELINE COSTS	14 002.3	24 102.4	25 874.0	20 660.4	16 474.4	4 298.3	444.0	105 855.9	10.6	11 204.2
Physical Contingencies	14.8	19.9	19.9	19.9	19.9	19.9	5.1	119.4	-	-
Price Contingencies	46.0	410.7	704.6	1 005.1	1 333.3	319.4	50.7	3 869.7	5.7	220.1
Total PROJECT COSTS	14 063.0	24 533.0	26 598.5	21 685.4	17 827.6	4 637.6	499.9	109 845.0	10.4	11 424.4
Taxes	1 218.1	2 022.7	2 030.8	1 537.8	1 246.9	160.3	43.4	8 260.2	-	-
Foreign Exchange	2 128.9	2 735.2	2 695.0	2 123.7	1 522.0	203.8	15.8	11 424.4	-	-

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Expenditure Accounts by Years -- Totals Including Co
(US$ '000)

	Totals Including Contingencies							
	18/19	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**Total**
I. Investment Costs								
A. Works	520.1	9 241.4	10 092.6	10 377.5	10 840.0	1 160.6	-	42 232.2
B. Vehicles and equipment	2 995.5	636.2	-	-	-	-	-	3 631.8
C. Goods, services and inputs	1 673.4	3 849.6	5 770.5	4 902.5	3 407.6	728.3	56.5	20 388.3
D. Training, w orkshop, surveys and studies	6 423.1	7 313.9	7 291.1	3 027.1	885.4	155.3	97.8	25 193.6
E. Technical assistance	275.5	1 019.8	943.0	847.2	132.9	-	-	3 218.4
Total Investment Costs	11 887.6	22 060.8	24 097.3	19 154.3	15 265.8	2 044.2	154.3	94 664.2
II. Recurrent Costs								
A. Salary and allow ances	1 821.3	2 161.0	2 190.1	2 219.9	2 250.6	2 282.2	333.3	13 258.4
B. Opearating costs	354.2	311.2	311.2	311.2	311.2	311.2	12.2	1 922.4
Total Recurrent Costs	2 175.5	2 472.2	2 501.3	2 531.1	2 561.8	2 593.4	345.5	15 180.8
Total PROJECT COSTS	14 063.0	24 533.0	26 598.5	21 685.4	17 827.6	4 637.6	499.9	109 845.0

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Expenditure Accounts Breakdown
(US$ '000)

	Base Cost				Physical Contingencies				Price Contingencies				Total Incl. Cont.				Base Costs + Price Cont. on Base Costs	Physical Cont. Plus Price Cont. on Physical Cont.
	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total		
I. Investment Costs																		
A. Works	3 984.8	31 798.2	3 199.3	38 982.3	-	-	-	-	209.1	2 778.4	262.4	3 249.9	4 193.9	34 576.6	3 461.7	42 232.2	42 232.2	-
B. Vehicles and equipment	1 452.9	1 771.8	358.3	3 583.0	-	-	-	-	11.0	32.9	4.9	48.8	1 463.9	1 804.7	363.2	3 631.8	3 631.8	-
C. Goods, services and inputs	2 084.3	17 245.0	1 059.1	20 388.3	-	-	-	-	-	-	-	-	2 084.3	17 245.0	1 059.1	20 388.3	20 388.3	-
D. Training, w orkshop, surveys and studies	2 575.2	20 099.0	2 519.4	25 193.6	-	-	-	-	-	-	-	-	2 575.2	20 099.0	2 519.4	25 193.6	25 193.6	-
E. Technical assistance	1 107.1	1 928.4	182.9	3 218.4	-	-	-	-	-	-	-	-	1 107.1	1 928.4	182.9	3 218.4	3 218.4	-
Total Investment Costs	11 204.2	72 842.4	7 319.0	91 365.6	-	-	-	-	220.1	2 811.2	267.3	3 298.6	11 424.4	75 653.6	7 586.2	94 664.2	94 664.2	-
II. Recurrent Costs																		
A. Salary and allow ances	-	11 963.0	604.9	12 567.9	-	107.5	11.9	119.4	-	514.0	57.1	571.1	-	12 584.4	674.0	13 258.4	13 127.8	130.6
B. Opearating costs	-	1 922.4	-	1 922.4	-	-	-	-	-	-	-	-	-	1 922.4	-	1 922.4	1 922.4	-
Total Recurrent Costs	-	13 885.4	604.9	14 490.3	-	107.5	11.9	119.4	-	514.0	57.1	571.1	-	14 506.8	674.0	15 180.8	15 050.2	130.6
Total	11 204.2	86 727.7	7 923.9	105 855.9	-	107.5	11.9	119.4	220.1	3 325.2	324.4	3 869.7	11 424.4	90 160.4	8 260.2	109 845.0	109 714.4	130.6

Appendix 10: Economic and Financial Analysis

Summary

The SACP economic and financial cost benefit analysis estimated that the project investments in enhanced production of high-value crops, processing and marketing of high-value crops, and surface water management would result in agricultural diversification and productivity increase. The analysis estimated the following benefits: (1) increased production and productivity of high value-added crops (*non*-paddy crops); (2) improved agricultural technology and practices that increase productivity; (3) improved water security for agricultural production to reduce water availability risk due to salinization and seasonal fluctuation; (4) improved marketing, post-harvest management, and value addition (agro-processing); (5) labor and job creation.

The analysis was estimated for 180,000 ha of targeted areas operated by 10,000 commodity interest groups with an average household landholding of 0.72 ha (average of the Southern region of Bangladesh). The average membership in each group is around 25 people, and the total cumulative numbers (beneficiaries) will be 250,000 people in the target areas. The cumulative landholdings by the targeted population will be 180,000 ha in the target 30 *upazilas* in 11 districts in the southern part of Bangladesh.

The project benefits were quantified based on crop production models of representative farms in the Southern region. Separate crop budgets were prepared for each representative commodity. The major crops that were covered in the analysis are the following: pulse crops (mung beans and grass pea), oil seeds (sunflower seeds), spices (garlic and turmeric), fruits (sapota, mango, hog plum, guava, and water melon), vegetables (pumpkin, eggplant, okra, tomatoes, ridge gourd, bitter gourd, arum, and country bean), and paddy (high yield Aus variety).

The project returns were estimated for a 20 year period calculated with the 2017 constant prices using a discount rate of 10 percent. Out of 20 years, 6 years were allocated for the project implementation period. The financial prices for traded agricultural inputs and commodities were converted to economic prices at import and export parity prices. The prices of non-traded goods and commodities were converted to economic prices using a standard conversion factor of 1.06.

The total project costs were estimated at around USD 109.14 million (around taka 8.72 billion), inclusive of price and physical contingencies. In addition, the recurring costs at 2% of the total project cost were accounted from the 7th projected year onwards after the conclusion of the final project implementation year.

The project as a whole was estimated to have an economic rate of return (IRR) of 16 percent, the net present value (NPV) was around BDT 2,482 million with a BCR of 1.30. The economic return would be robust, and the return could be maintained above the discount rate of 10% even with a cost increase and benefit decrease of 20% as well as a delay of benefit generation for 2 years.

Methodology of Economic Analysis

The economic analysis assessed the economic and financial returns to the project based on the following methodology.

i. The total project cost of USD 109.14 million was used for the calculation of economic and financial analysis, which is equivalent of 8.72 billion taka using the average exchange rate of 80 taka per 1 USD for the project implementation period. In addition, the O&M costs (recurring costs) for maintaining various water management facilities and post-harvest technologies are incorporated into the analysis. In the analysis, the project implementation period was 6 years. The total time frame used for the economic and financial analysis was 20 years, including 6 years of project implementation and 14 years of operation period.

ii. Price and cost of production data during the implementation period were available for the representative agricultural commodities that were commonly planted and distributed in the Southern region. Models of 19 crops, including pulse, oilseeds, spices, fruits, vegetables, and paddy were used for the analysis. The analysis was conducted using a simple farm model applying 2015 farmgate constant prices, and any post-wholesale value creation activities (e.g., agro-processing) were considered as a proxy in the analysis due to a lack of detailed targets of commodities that will be focused in the project.

iii. The Without-the-Project (WOP) scenario was based on the assumption in which the productivity stayed the same as in the baseline figure (2015 district data), and the proportion of crop/commodity allocation in the area stayed the same as in the baseline scenario.

iv. Financial prices for traded agricultural inputs and commodities were converted to economic prices at import and export parity prices. The prices of non-traded goods (including agricultural labor costs) and commodities were converted to economic prices using a standard conversion factor of 1.06. The shadow exchange rate of BDT 77.85 to US$ 1 was also applied in the economic analysis.

Project Benefits: The project intervention proposes to bring the following benefits: (1) an increase in irrigated areas and its effects on production and productivity increase; (2) crop diversification from paddy to non-paddy higher-value crops; (3) improved technology and productivity increase; (4) value addition through improved marketing, post-harvest management and processing; (5) labor and job creation from processing activities. It is expected that the above mentioned project activities will lead to increased farm level income for beneficiaries, and this increase is attributed to per plot yield increase for the agricultural production, increase in value-addition through production, post-harvest handling, and processing.

Irrigated Area Expansion: One of the major sources of expected benefits is an expansion of irrigated areas generated from modernizing and improving water management systems. The project targets 180,000 ha of improved areas in water management with 250,000 cumulative households who are participating in this project. Besides the improvements in physical infrastructure, water management and participatory water management improve the efficiency in water use. The physical infrastructure and group formulation will be spread throughout 30 upazilas in 11 districts in southern Bangladesh. The phasing of group formulation, cumulative group members, and cumulative land area of the project are shown in Table A10.1 below.

Table A10.1 Phasing of Water Management Investments and Group Formation (Outreach)

	2018	2019	2020	2021	2022	2023	2024
Groups per year	500	1,000	1,000	1,800	2,000	1,500	700
Number of Smallholder Group Members /Yr:	12,500	25,000	25,000	45,000	50,000	37,500	17,500
Cumulative Group members	50,000	75,000	100,000	145,000	195,000	232,500	250,000
Cumulative Land of the Project (Ha)	36,000	54,000	72,000	104,400	140,400	167,400	180,000

Impact on Diversification: The project proposes crop diversification by shifting to the cultivation of non-paddy, high-valued crops. In the current land use within the target area (which is assumed to be the WOP situation), the area share for paddy cultivation is close to 92% of the total cultivable land

areas in the southern region. On the other hand, only 3% of the land is currently allocated to the high-value added crops such as spices, fruits, and vegetables as shown in Table A10.2.

Table A10.2 Cultivated Area by Crop (without project scenario)

	Area (ha)	Share
Rice	3,517,951	91.8%
Pulse	118,036	3.1%
Oilseeds	84,867	2.2%
Spices	33,376	0.9%
Fruits	52,224	1.4%
Vegetables	24,139	0.6%
TOTAL	3,830,591	100.0%

Source: Calculated Based on Yearbook of Agricultural Statistics – 2015 (July 2016)
Bangladesh Bureau of Statistics

Table A10.3 below shows the assumed land use by crop type after the project implementation (which is assumed to be the With Project scenario). Around 82% of the newly irrigated areas will be used for paddy cultivation. It is still by far the dominant crop being cultivated in the project area; however, the proportion of paddy will be reduced primarily due to diversification. On contrary, the areas for spices, fruits, and vegetables will increase due to the project, and most of the increase in cultivated area are realized for high-value added crops while the cultivated area for paddy is reduced.

Table A10.3 Cumulative Cultivated Area Expansion by Crop Type in the project (Ha) (with project)

	2018	2019	2020	2021	2022	2023	2024	Share
Rice	21,254	31,882	42,509	61,638	82,892	98,833	106,272	82.0%
Pulses	1,037	1,555	2,074	3,007	4,044	4,821	5,184	4.0%
Oilseeds	518	778	1,037	1,503	2,022	2,411	2,592	2.0%
Spices	778	1,166	1,555	2,255	3,033	3,616	3,888	3.0%
Fruits	1,814	2,722	3,629	5,262	7,076	8,437	9,072	7.0%
Vegetables	518	778	1,037	1,503	2,022	2,411	2,592	2.0%

Impact from Improved Technology and Production Practices: The project proposes that adopting proven technologies such as hybrid seeds, improved crop varieties and improved techniques from extension services could increase the per hectare (or per plot) productivities in non-paddy high-value crops of pulses, oilseeds, spices, fruits, and vegetables.

Table A10.4 below shows the crop yield differences between without- and with-project for 19 major crops in the southern region. Yield increases expected from the project are accredited to improved water use efficiency and improved technology adopted in the agriculture practices. The analysis assumed that the yields for paddy, pulses, oilseeds, and spices increase by 30%, and yields for fruits and vegetables increase by 15% and 20% respectively.

Table A10.4 Yield Increase Assumption for Main Agricultural crops

Main Crops	Without Project (tons/ha)	With Project (tons/ha)	Increase in (%)
Paddy (Aus)	1.53	1.99	30%
Mung Bean	0.50	0.65	30%
Grass Pea	0.50	0.65	30%
Sunflower Seeds	1.42	1.84	30%
Garlic	1.93	2.52	30%
Turmeric	2.98	3.87	30%
Mango	18.14	20.87	15%
Sapota	13.68	15.73	15%
Hogplum	14.71	16.91	15%
Watermelon	19.09	21.96	15%
Guava	13.60	15.64	15%
Pumpkin	3.10	3.72	20%
Eggplant	4.15	4.98	20%
Okra	2.62	3.15	20%
Ridge Gourd	2.75	3.30	20%
Bitter Gourd	3.87	4.64	20%
Arum	6.06	7.28	20%
Tomato	4.93	5.92	20%
Country Bean	2.87	3.45	20%

Value Addition: Component 2 supports a development of various types of businesses and enterprises that are expected to increase values to horticulture production through better packaging and grading, storage, and processing. Two representative processing enterprises are assumed in the analysis to show positive economic impacts.

The economic analysis assumed two types of post-harvest processing activities undertaken in the project, including vegetable (sunflower) oil processing and fruit pulp processing. These processing enterprises are supported financially and technically by the project. The project allocates a USD 3.8 million matching grant, and the project would support the establishment and financing of enterprises through matching grants.

The project assumes that two 1,200 metric tons annum capacity processing plants of sunflower (vegetable) oil are built. The proxy project cost for a plant is assumed to cost around USD 780,000. The total cumulative project costs for two plants equivalent will be USD 1.6 million, which include land and building machinery and processing plants, miscellaneous fixed assets, and pre-operational expense. The annual cost of production (including a procurement cost of raw material – sunflower seeds) and operational costs are 92% of the annual revenue from vegetable oil sales.

The analysis also assumes that the project could support the establishment of a fruit pulp processing plant as a second processing activity. It is assumed that the project supports to build a plant with a cumulative capacity of 13,000 tons of fruit pulp per annum, and the total project cost is estimated at US$ 1.9 million, which will be cumulatively covered by the matching grants. The analysis assumes that the project costs include land development, civil work, machinery and processing plant, miscellaneous fixed assets, and pre-operational expenses. The annual cost of production (including a procurement cost of raw material – mango and guava) and operational costs are 67% of the annual revenue from fruit pulp sales.

The economic benefits of both vegetable oil and fruit pulp processing activities are derived from 20 years of operation.

Labor and Job Creation: Through the agri-business enterprises established under this project, agro-processing enterprises could create additional jobs besides farming. The analysis assumed that two processing activities (vegetable oil and pulp processing) could create around 263,000 working days at full capacity (as shown in Table A10.5), which equivalent to around 1,300 jobs is potentially created from these activities annually.

Table A10.5 Number of Working Days Created from the Processing Activities (days)

	Year 2	Year3	Year 4	Year 5	Year 6-Year 20
Vegetable Oil Enterprises	30,950	61,899	92,849	123,799	154,749
Fruit Pulp Enterprises	21,719	43,439	65,158	86,878	108,597
TOTAL	52,669	105,338	158,008	210,677	263,346

Project Costs

The project is scheduled to commence its implementation in 2018 at the earliest, and the project implementation is scheduled to complete in 2023. The duration of the project implementation will be 6 years. The total project cost was estimated in constant price in Bangladesh in Dec 2017. The price contingency was projected based on the international and domestic inflation rates over the project implementation period. Economic investment costs are detailed in Table A10.6 extracted from the costab.

Table A10.6 Allocation of Project Cost by Component and Sub-Component

Bangladesh
SACP Final Design
Expenditure Accounts by Years -- Base Costs
(US$ '000)

	Base Cost							
	18/19	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**Tota**
I. Investment Costs								
A. Works	513.6	9,565.4	10,468.5	10,146.4	10,311.4	1,005.0	-	42,
B. Vehicles and equipment	2,966.5	616.5	-	-	-	-	-	3,
C. Goods, services and inputs	1,667.5	3,838.0	5,759.5	4,891.5	3,396.4	716.5	50.6	20,
D. Training, workshop, surveys and studies	6,383.3	7,275.3	7,252.5	2,988.5	880.5	150.4	92.9	25,
E. Technical assistance	275.5	1,020.3	943.5	847.7	132.9	-	-	3,
Total Investment Costs	11,806.4	22,315.6	24,424.1	18,874.1	14,721.1	1,871.9	143.6	94,
II. Recurrent Costs								
A. Salary and allowances	1,776.9	2,079.5	2,079.5	2,079.5	2,079.5	2,079.5	277.5	12,
B. Opearating costs	874.3	831.2	831.2	674.7	674.7	674.7	12.2	4,
Total Recurrent Costs	2,651.2	2,910.7	2,910.7	2,754.2	2,754.2	2,754.2	289.7	17,
Total BASELINE COSTS	14,457.6	25,226.3	27,334.8	21,628.3	17,475.3	4,626.1	433.3	111,
Physical Contingencies	289.2	496.7	538.9	424.7	341.7	84.7	8.7	2,
Price Contingencies	76.1	557.3	975.9	1,337.9	1,688.5	606.4	56.9	5,
Total PROJECT COSTS	14,822.8	26,280.3	28,849.6	23,391.0	19,505.5	5,317.2	498.9	118,
Taxes	1,475.4	2,526.1	2,776.9	2,231.8	1,844.9	479.7	46.4	11,
Foreign Exchange	2,258.5	2,952.3	2,957.1	2,327.0	1,703.4	283.0	16.4	12,
ECONOMIC COSTS								
Less price contingencies	76.1	557.3	975.9	1,337.9	1,688.5	606.4	56.9	5,
Less inputs supplies, seeds etc	450.0	450.0	450.0	450.0	450.0	0	0	2,
Less taxes	1,475.4	2,526.1	2,776.9	2,231.8	1,844.9	479.7	46.4	11,
Subtotal (deducted from total costs)	*2,001.6*	*3,533.4*	*4,202.8*	*4,019.7*	*3,983.4*	*1,086.1*	*103.3*	*18,*
Economic costs (USD)	12,821.3	22,746.9	24,646.8	19,371.3	15,522.2	4,231.1	395.6	99,
Economic costs (BDT million)	1,051.3	1,865.2	2,021.0	1,588.4	1,272.8	347.0	32.4	8,17

Economic and Financial Results

Financial Analysis

Financial analysis was conducted for 19 agricultural crops, including paddy, pulses (mung bean and grass pea), oilseed (sunflower), spices (garlic and turmeric), fruits (mango, sapota, hogplum, guava, and watermelon), and vegetables (pumpkin, eggplant, okra, ridge gourd, bitter gourd, arum, tomato, and country bean).

As shown in Table A10.4, yield increases for each crop are assumed from the project. Based on the productivity change, per plot based net financial benefit for each crop was calculated. Using constant prices from 2015, the comparative results of without- and with-project scenarios for output, gross margin, net profit, return to family labor, and return to labor for each crop are shown in Tables A10.7, A10.8, and A10.9.

Table A10.7 Financial Analysis of Paddy, Pulse, and Spice

	Scenario\Crop	Paddy	Mung Bean	Grass Pea	Sunflower Seeds	Garlic	Turmeric
Output (tons/plot*)	WOP+	1.53	0.50	0.50	1.42	1.93	2.98
	WP++	1.99	0.65	0.65	1.84	2.52	3.87
	Increase (%)	30%	30%	30%	30%	30%	30%
Gross Margin**(TK/plot)	WOP	7,882	(6,211)	(6,677)	25,628	48,370	47,738
	WP	17,045	(229)	(1,458)	46,865	94,801	96,875
	Increase (%)	316%	104%	122%	83%	96%	103%
Net Profit*** (TK/Plot)	WOP	(1,173)	(10,587)	(10,003)	18,667	21,758	18,712
	WP	7,990	(4,605)	(4,784)	39,904	68,190	67,850
	Increase (%)	781%	57%	52%	114%	213%	263%
Return to Family Labor**** - per person day (TK)	WOP	(24)	(453)	(402)	502	153	121
	WP	165	(197)	(192)	1,073	480	438
	Increase (%)	581%	143%	148%	114%	213%	263%
Return to Total Labor ***** - per person day (TK)	WOP	(12)	(201)	(179)	201	79	62
	WP	79	(88)	(85)	429	248	226
	Increase (%)	581%	143%	148%	114%	213%	263%

* Average size of a plot in the southern region is 0.72 ha

** Revenue-Cost of Production (excluding family labor but including hired labor)

*** Gross Margin - Cost of Production (including family labor)

**** Gross Margin divided by total number of labor days (for family labor)

***** Net Profit divided by total number of labor days (for both family and hired labor)

+ WOP = Without Project
++ WP = With Project

Table A10.8 Financial Analysis of Various Fruit Crops

	Mango	Sapota	Hogplum	Watermelon	Guava
Output (tons/plot*)	18.14	13.68	14.71	19.09	13.60
	20.87	15.73	16.91	21.96	15.64
	15%	15%	15%	15%	15%
Gross Margin**(TK/plot)	622,537	831,147	755,533	177,876	811,721
	745,009	964,527	876,879	213,674	946,361
	20%	16%	16%	20%	17%
Net Profit*** (TK/Plot)	604,080	825,623	750,448	172,091	803,548
	726,552	959,003	871,793	207,890	938,188
	20%	16%	16%	21%	17%
Return to Family Labor**** - per person day (TK)	6,127	27,975	27,624	5,569	18,405
	7,369	32,495	32,090	6,728	21,489
	20%	16%	16%	21%	17%
Return to Total Labor ***** - per person day (TK)	2,188	9,991	9,866	1,989	6,573
	2,632	11,605	11,461	2,403	7,675
	20%	16%	16%	21%	17%

* Average size of a plot in the southern region is 0.72 ha

** Revenue-Cost of Production (excluding family labor but including hired labor)

*** Gross Margin - Cost of Production (including family labor)

**** Gross Margin divided by total number of labor days (for family labor)

***** Net Profit divided by total number of labor days (for both family and hired labor)

+ WOP = Without Project
++ WP = With Project

Table A10.9 Financial Analysis of Various Vegetable Crops

	Scenario\Crop	Pumpkin	Eggplant	Okra	Ridge Gourd	Bitter Gourd	Arum	Tomato	Country Bean
Output* (tons/plot**)	WOP	3.10	4.15	2.62	2.75	3.87	6.06	4.93	2.87
	WP	3.72	4.98	3.15	3.30	4.64	7.28	5.92	3.45
	Increase (%)	20%	20%	20%	20%	20%	20%	20%	20%
Gross Margin*** (TK/plot)	WOP	32,869	49,956	29,058	36,847	60,574	66,692	41,142	42,027
	WP	46,526	66,549	42,163	50,597	79,905	84,883	60,870	53,519
	Increase (%)	42%	33%	45%	37%	32%	27%	48%	27%
Net Profit**** (TK/Plot)	WOP	28,680	41,701	25,431	33,074	56,307	60,623	35,424	40,493
	WP	42,338	58,294	38,535	46,824	75,638	78,814	55,151	51,984
	Increase (%)	48%	40%	52%	42%	34%	30%	56%	28%
Return to Family Labor***** - per person day (TK)	WOP	1,282	946	1,312	1,641	2,470	1,870	1,160	4,940
	WP	1,892	1,322	1,989	2,323	3,319	2,431	1,805	6,341
	Increase (%)	48%	40%	52%	42%	34%	30%	56%	28%
Return to Total Labor ****** - per person day (TK)	WOP	570	488	525	729	1,098	966	464	1,976
	WP	841	683	796	1,033	1,475	1,256	722	2,537
	Increase (%)	48%	40%	52%	42%	34%	30%	56%	28%

* Average size of a plot in the southern region is 0.72 ha

** Revenue-Cost of Production (excluding family labor but including hired labor)

*** Gross Margin - Cost of Production (including family labor)

**** Gross Margin divided by total number of labor days (for family labor)

***** Net Profit divided by total number of labor days (for both family and hired labor)

+ WOP = Without Project
++ WP = With Project

From these tables, it is clear that fruit crops earn the highest profit margin and returns to labor, which are followed by the vegetable crops. On the other hand, pulses (mung bean and grass pea) has the lowest gross margin and net profit among all the crop types, and the returns to labor are also the lowest of all. In fact, both gross margin and net profits for pulses are negative even after the project and a higher yield increase is necessary for pulses to receive even a positive return. The dominant crop, paddy, also has a very low margin. Even after the yield growth from water use efficiency, the net profit is only around USD 100 per year. This proves and justifies the project and the public sector financing to promote high-value added crops such as fruits and vegetables as well as oilseeds and spices.

Economic Analysis

The project aims not only to increase the productivity and production of higher-value crops but also to establish community groups and farmer producer organizations to bring value added activities such as agro-processing to accrue higher income to the farmers. The project also facilitates public-private

partnership to bring incremental benefits through better aggregation and distribution channels and receive higher prices for agriculture produce and provide matching grants to increase value addition (e.g., post-harvest management and processing) to the southern region of Bangladesh.

In the analysis, the main incremental benefits were derived from the following: (1) increased production and productivity of high value-added crops (*non*-paddy crops); (2) improved agricultural technology and practices that increase productivity; (3) improved water security for agricultural production to reduce water availability risk due to salinization and seasonal fluctuation; (4) improved marketing, post-harvest management, and value addition (agro-processing); (5) labor and job creation.

The economic analysis attempts to quantify the economic benefits resulting from Sub-Component 1.3: *Institutional Support for Research and Extension*, Sub-Component 2.2: *Post-Harvest and Processing Investment*, Sub-Component 3.1: *Sustainable Surface Water Management, Drainage, Conservation and Utilization*. No economic benefits were calculated for Sub-Component 1.1 and 1.2 as well as 2.1 and 2.3. Sub-Component 3.2 and Component 4 were also not considered for the economic benefit calculation even though these were included in the economic cost side of the project's economic analysis. These sub-components and component, which were excluded from the economic benefit calculation, are considered pre-conditions for the effective implementation of the project.

The financial prices for traded agricultural inputs and outputs, including paddy, phosphate (Trisodium Phosphate:TSP), potash (Muriate of Potash:MOP), and nitrogen (urea), were converted to economic prices at import and export parity prices. The prices of other crops and inputs (including agricultural labor costs) for which the world reference prices were not available were converted to economic prices using the standard conversion factor of 1.06. The financial total project costs were also converted to economic costs. The analysis was carried for a 20 year period with 2015 constant prices, and a project implementation period of 6 years.

By incorporating the surface water management (Component 3) and crop diversification (enhanced production of high-value crops) and productivity increase (Component 1), incremental benefits for each crop category (paddy, pulse, oilseeds, spices, fruits, and vegetables) are shown in Table A10.10 below. Paddy still brings the biggest contributions to the incremental benefits; however, the share of contribution is reduced due to diversification.

The large contribution of paddy to the benefits is attributed to still a large cultivable area of paddy in the southern region. Despite the smaller gross margin and net profit derived from paddy, the cultivable land is still dominated by paddy production even after the diversification effects of encouraging non-paddy high-value crops. The diversification effects are also shown in the table where fruits, spices, and vegetables have higher incremental benefits than the status-quo scenario where paddy dominates more than 90% of the cultivable land as shown earlier in Table A10.2.

Table A10.10 Incremental Benefits from Diversification and Irrigated Area Expansion

	Year1	Year2	Year3	Year4	Year5	Year6	Year 7 - Year 20
Paddy	55,771,319	167,313,956	266,732,393	445,685,580	644,522,455	793,650,111	863,243,017
Pulses	1,342,658	4,027,973	6,176,225	10,043,078	14,339,583	17,561,961	19,065,737
Spices	8,561,575	25,684,725	42,807,874	73,629,544	107,875,843	120,261,512	132,247,717
Fruits	39,745,230	119,235,691	198,726,152	341,808,982	500,789,904	620,025,595	675,668,918
Vegetables	1,593,323	4,779,968	7,966,614	13,702,575	20,075,866	24,855,834	27,086,486
TOTAL (TK)	**107,014,104**	**321,042,312**	**522,409,258**	**884,869,760**	**1,287,603,651**	**1,576,355,013**	**1,717,311,875**
TOTAL (US$)	**1,337,676**	**4,013,029**	**6,530,116**	**11,060,872**	**16,095,046**	**19,704,438**	**21,466,398**

The following two tables show the incremental benefits derived from the Sub-Component 2.2: *Post-Harvest and Processing Investment*. The first table (Table A10.11) shows the incremental benefits from the agro-processing activities, including vegetable oil and fruit pulp processing. Assuming, the construction of the vegetable oil and fruit pulp processing plants start at the 4th and 5th years respectively, the activities start generating incremental benefits at the 6th year and increase gradually and peak from the 10th year onward. Relative to the impacts from diversification, productivity increase, and improved surface water management, the incremental benefits derived from the processing activities are small; however, it is still a significant contribution to the overall incremental benefits.

Table A10.11 Incremental Benefits from Post-Harvest and Processing Investment

	Year1-Year 3	Year4	Year5	Year6	Year7	Year8	Year9	Year 10-20
Sunflower (Vegetable) Oil Processing	-	(62,696,557)	(57,920,736)	14,327,462	23,879,103	33,430,745	42,982,386	47,758,207
Fruit Pulp Processing	-	-	(152,529,412)	11,792,471	23,584,941	35,377,412	47,169,882	58,962,353
TOTAL (TK)	**-**	**(62,696,557)**	**(210,450,148)**	**26,119,933**	**47,464,044**	**68,808,156**	**90,152,268**	**106,720,560**
TOTAL (US$)	-	**(783,707)**	**(2,630,627)**	**326,499**	**593,301**	**860,102**	**1,126,903**	**1,334,007**

Table A10.12 shows the incremental benefits from the labor and job creation from the processing activities. Incremental benefits from job creation start generating at the 5th year in the analysis, and the peak from the 8th year onward. As in the processing activities, the benefits derived from job creation are not as large as the benefits from diversification and productivity effects in agriculture production, but it is still a significant amount to be added to the overall economic benefits.

Table A10.12 Incremental Benefits from Labor and Job Creation From the Processing Activities

	Year1 - Year 4	Year5	Year6	Yesr 7	Year7	Yesr 8 -Year 20
Sunflower (Vegetable) Oil Processing	-	8,046,933	16,093,867	24,140,800	32,187,733	40,234,667
Fruit Pulp Processing	-	5,647,059	11,294,118	16,941,176	22,588,235	28,235,294
TOTAL (TK)	**-**	**13,693,992**	**27,387,984**	**41,081,976**	**54,775,969**	**68,469,961**
TOTAL (US$)	**-**	**171,175**	**342,350**	**513,525**	**684,700**	**855,875**

After incorporating all the incremental benefits derived from three different sources and overall project costs, the overall Economic Internal Rate of Return (IRR) was estimated at 16% for the base case scenario, and Net Present Value (NPV) was around BDT 2,482 million at a discount rate of 10%.

Table-A10.13: Sensitivity of NPV, IRR and BCR to varying scenarios

Indicators	Base case	Cost Increases by		Benefits down by	
		10%	20%	10%	20%
NPV-Benefit streams & cost streams discounted at 10% (amount in BDT million)[44]	2,482	1,657	832	1,409	336
IRR-Net incremental benefits stream for a 20 year period [45]	16%	14%	12%	14%	11%
BCR-Cash flows discounted at 10%[46]	1.3	1.18	1.08	1.17	1.04

[44] The NPV is a very concise performance indicator of an investment project: it represents the present amount of the net benefits (i.e. incremental benefits less incremental costs) flow generated by the investment expressed in AFA (a single value with the same unit of measurement used in the accounting tables). The Net Present Value is the sum of a 20 year discounted net cash flows.

[45] IRR is defined as the discount rate that zeroes out the net present value of flows of costs and net present value of flows of benefits of an investment. The IRR was computed using incremental net benefits streams for 20 year period. As IRR rankings can be misleading, and given that the informational requirements for computing a proper NPV and IRR are the same except for the discount rate, it is always worth calculating the NPV of a project. There are many reasons in favour of the NPV decision rule (see Lev, 2007).

Sensitivity Analysis

Sensitivity analysis: Sensitivity analysis of the project performance indicators has been carried out in order to test the robustness of project investments and benefits streams. Impact of increases in costs and decline in benefits assessed at varying stages indicates that the project is more sensitive to decline in benefits than increases to costs. If all benefits are delayed by two years (in effect, if the project's production activities take longer to become established) then the IRR declines to 12% with a NPV of 1,161 million BDT discounted at 10% and the base case BCR declines to 1.14. The sensitivity analysis of BCR indicates that the project is more sensitive to decline in project benefits than increases in costs.

Switching value analysis: Switching values[47] indicate that the investments are worthy even if costs increased by 30% or the benefits declined by 23%.

Summing up: Sensitivity analysis confirms that the Project remains viable both to decreases in benefits and increases in costs. None the less, the project is more sensitive to decline in benefits than increases in costs. Decrease in benefits may be brought about by a decline in output prices, or a failure in achieving projected yields or outputs. It is noted that the project area often experiences natural calamities and also crop damages due to cyclones and storms and therefore there are possibilities of decline in benefits happening more often than assumed.

As the proposed investments are targeted at households that are most vulnerable, who are extremely poor living in the remote area locations that are devoid of access to good communication, road network, markets, agricultural support services, health services, community infrastructure etc and the hardships experienced by them in particular the women, the resulting IRR under extreme scenario is more than justified.

The project is economically robust even with delays in flow of benefits by 2 years, unexpected cost overruns of 30%, and reduction of benefits at 23% of the base level. The key lesson is that changes to the benefit side of the project are more sensitive than changes to the cost side. Maintaining benefits of at least around 67% of the base case, or allowing no more than 4 to 5 years of delay of benefits to take place, or a cost increase of less than 30% are crucial for this project to have a hurdle rate of 10% economic return.

In order to avoid the potential benefit losses, maintaining high productivity in HVCs is absolutely essential; given a constant price, the areas of cultivation for HVCs could bring higher incremental benefits to the project. Currently, the cultivated land under paddy is too dominant, and maintaining the current rate of paddy production (the status quo scenarios) with gross margin and net profit could bring small economic returns to the farmers. In order to increase the robustness of the project further, fruit and vegetable products play a crucial role, and these crops could bring a higher income to the farmers and the key success of this project.

[46] BCR is independent of the size of the investment and it does not generate ambiguous cases and for this reason it can complement the NPV in ranking projects where budget constraints apply. Being a ratio, the indicator does not consider the total amount of net benefits and therefore the ranking can reward more projects that contribute less to the overall increase in public welfare

[47] Switching values are yet another measure of sensitivity analysis They demonstrate by how much a variable would have to fall (if it is a benefit) or rise (if it is a cost) to make it not worth undertaking an option.

Table A10-14: Economic Analysis of SACP at Final Design

ECONOMIC ANALYSIS

Country:	Bangladesh									Discount rate:DR	**0.1**	10%									
Project:	**SACP Final design**																				
(amount in million BDT)																					
	Project Year																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Incremental benefits																					
Incremental benefits	111.1	333.4	540.3	850.0	1116.1	1649.9	1816.2	1837.7	1859.2	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	
Total Incremental benefits	111.1	333.4	540.3	850.0	1116.1	1649.9	1816.2	1837.7	1859.2	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	1875.8	
Incremental costs																					
Investment costs	1051.3	1865.2	2021.0	1588.4	1272.8	347.0	32.4														
incremental Operating costs	22.2	66.7	108.1	170.0	223.2	330.0	363.2	367.5	371.8	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	
Incremental costs	1073.6	1931.9	2129.1	1758.4	1496.0	676.9	395.7	367.5	371.8	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	375.2	
Incremental net benefits	-962.4	-1598.5	-1588.8	-908.5	-379.9	973.0	1420.5	1470.2	1487.4	1500.6	1500.6	1500.6	1500.6	1500.6	1500.6	1500.6	1500.6	1500.6	1500.6	1500.6	

Basecase results discounted:		10.0%
NPV of benefit streams discounted at	10.0%	10,732
NPV of costs stream discounted at	10.0%	8,250
NPV of project discounted at	10.0%	2,482
BCR- discounted benefits & costs at	10.0%	1.30
IRR		16%

Benefits lagged by 2 year DR at	10.0%	
NPV of benefit streams discounted at	10.0%	9,411
NPV of costs stream discounted at	10.0%	8,250
NPV of project discounted at	10.0%	1,161
BCR- discounted benefits & costs at	10.0%	1.14
IRR		12%

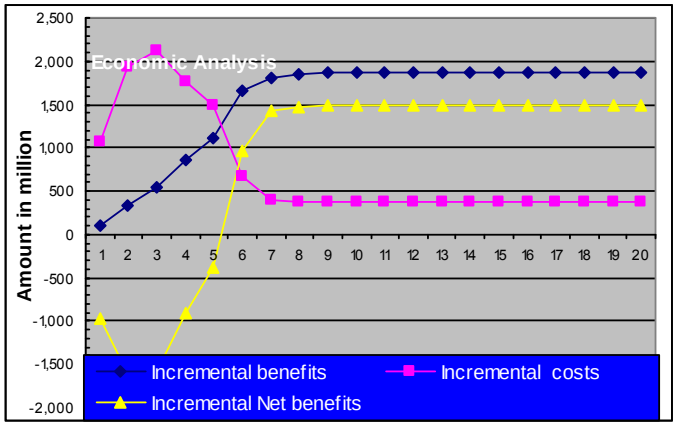

Table-A10.15: Economic Analysis of SACP at Final Design: Sensitivity Analysis

ECONOMIC ANALYSIS

Country:	Bangladesh	Discount rate:DR	**0.1**	10%
Project:	**SACP Final design**			
(amount in million BDT)				

Project Year

Results of Sensitivity Analysis:

		Costs increased by				Benefits down by				Both cost increase & benefits down			
Project Performance indicators		10%	15%	20%	25%	10%	15%	20%	25%	10%	15%	20%	25%
NPV of at discount rate of	10.0%	1,657	1,245	832	420	1,409	872	336	-201	584	-365	-1,314	-2,263
BCR at discount rate of	10.0%	1.18	1.13	1.08	1.04	1.17	1.11	1.04	0.98	1.06	0.96	0.87	0.78
IRR		14%	13%	12%	11%	14%	12%	11%	9%	11%	9%	7%	5%

Switching Value Analysis:

Switching Value:	Appraisal	Switching value	% change
Total Benefits at 7.5% DR	10,732	8,250	-23
Total Costs at 7.5% DR	8,250	10,732	30

Appendix 11: Food safety and nutrition

I. Food safety and nutrition context

1. The Smallholder Agricultural Competitiveness Project (SACP) concept and design is based on developing high value crops in southern districts of Bangladesh. The project takes farmer groups as its entry point for support to enhance production and value chain development in the project areas. SACP will focus on strengthening agriculture competitiveness, enhancing sustainable technical support services/facilities, identification of market opportunities and linking these to applied research, development and extension to support small farmers, improving access to income opportunities of high value crops through multi-stakeholder platforms, developing market linkages, and supporting individual and group organizational capacity to participate in agricultural value chains. It will also promote increased consumption of high value crops (HVC) on beneficiary farms to improve household's diets and nutrition. SACP will enhance production quantity and quality through appropriate productive infrastructures, quality agriculture inputs and training of farmers and value chain actors, as well as, linking farmers and their groups to private dealers and traders to boost fair contract farming and postharvest and processing contracts. Agriculture remains fundamentally important to the country's prosperity. Agriculture occupies three-quarters of the scarce land space of Bangladesh and supports the livelihoods of the majority of the population. To this end, food safety and nutrition is a high priority on the Bangladesh national agenda.

2. As a lower middle-income country with high—but declining rates of poverty among its 160 million people, nutrition problems remain a challenge. Sustained economic growth is fundamental to this reduction and improving nutrition contributes to productivity, economic development, and poverty reduction by improving work capacity, cognitive development and health. Despite the significant economic development in Bangladesh, approximately a quarter of the population is unable to avail safe and nutritious food. Food safety and hygiene impact the diets that people consume which in turn affect the delivery on nutrition outcomes. There is need to strengthen food and nutrition security through improved food safety and reduced incidence of food-borne illness within the population and strengthened stakeholder involvement and coordination leading to enhanced trade in selected food commodities.

3. Remarkable progress has been made in increasing production of rice since 1971 by three folds, from 10 million tonnes to over 34.5 million tonnes in 2014/15, which has contributed to self-sufficiency in food grains. Production of rice, wheat, maize, potato, pulses and edible oilseeds increased by 8.6%, 49.6%, 156.1%, 16.7%, 71.0%, and 44.0% respectively, from 2009/10 to 2014/15. Households in Bangladesh are also seen to be slowly changing their diets, and are consuming a broader range of foods, with an increasing share of calories coming from vegetables, fruits, and animal source foods; however, the consumption rates of these foods are far below the recommended amounts. Food consumption remains heavily centred on cereals, with rice alone providing around three fourth of the energy intake.

4. According to the Bangladesh Demographic and Health Survey[48], prevalence of child underweight was 32.6% in 2014, a decline by half of the 2000 levels. However, selected districts in the Southern region still show child underweight levels as high as 37% with child stunting in the South ranging from 30% to 40%. These prevalence rates are very high as per the World Health Organization (WHO) thresholds of public health significance.

5. Under the FAO Country Programming Framework (2014-2018), improving the market linkages, value addition, and quality and safety of the food system has been marked as one of the

[48] Bangladesh Demographic and Health Survey (2014 BDHS).

priority areas of FAO's support in Bangladesh. As part of promoting food-based nutrition, FAO has been providing technical support to ministries of agriculture, fisheries and livestock, health, academia and nutrition training as well as research institutions on developing and promoting nutrient-dense recipes incorporating a diversity of foods and local ingredients. Horticulture, pulse and fish based recipes adapted to the local taste and cultures have been developed over the last ten years. These contribute to enhance the quality of protein and micronutrient content of the diets and meals. With the food- to- food enrichment methods, appropriate food combinations, safe and healthy cooking practices that are used, variety, nutrient density, hygienic quality, safety and acceptability of the food preparations are enhanced.

6. A three-year integrated agriculture and health based intervention (IAHBI) implemented by the Ministries of Livestock and Fisheries, and Health and Family Welfare among 50,000 rural poor households in selected districts of the South demonstrated decline in child and women's undernutrition from baseline (2013) to end line (2016) periods[49]. At the end of the project, underweight showed marked decline (23.9 % to 30.6%), there was marginal decline in stunting (34.4 % to 33.5%) and small decrease in wasting (11.4% to 9.35) Anemia and chronic energy deficiency in pregnant and lactating women also showed decline. The intervention focused on integrated household agriculture production and nutrition education linked with health based nutrition services targeting pregnant and lactating mothers, reproductive age women and children under five years of age in rural poor households of 10 unions covering 3 districts in the South.

7. Evaluation findings showed increased consumption of diversified agricultural products by the participating households, in addition to income earned by selling surplus agricultural produce in the markets. Training on homestead food production was integrated with nutrition components. There was an increase in dietary diversity of pregnant women and lactating mothers, with the lactating mothers' mean dietary diversity score from a total of 9 food groups increased to 4.9 from 3.7 whereas that of pregnant mothers had increased from 3.7 to 5.1. Evaluation of the intervention highlighted the need for a mechanism to promote dietary diversity, outside the limited time span of a project, and for it to become a regular activity of extension and health professionals. Then extension services are particularly well-placed as they can advise on food production practices and nutrition messages which can provide the required diversity.

II. Proposed objective and activities to enhance the dietary and nutrition impact of the Small holder agriculture competitiveness project (SACP)

Sub component 2.3: Development of food safety and nutrition measures along the value chain

8. The objective of this subcomponent is to promote nutrition sensitive value chains and products and thereby enhance the consumption of safe and diversified diet for households, women and young children. DAE will act as the lead agency through collaboration with Bangladesh Institute of Research and Training in Applied Nutrition (BIRTAN), and BARI.

9. *Food safety and nutrition training of trainers* - FAO, following needed studies, will contribute to the development of training manual on quality and food safety management systems and provide ToT to the selected resource persons of the agencies mentioned above. These resources persons will ultimately roll-out the training of trainers at the district, Upazila and community level.

10. *Training of trainers on community based safe food processing* - Following the ToTs received, SAAOs will provide training to farmer group leaders, women farmer groups and relevant agro-processors selected for matching grants on processing of micronutrient rich fruits and vegetables. The training will strengthen capacities on the use of simple hand operated/mechanised equipment to carry out processing and preservation activities (e.g. food products widely consumed in Bangladesh, seed cleaning, blanching, drying, pulping, juice extraction, pickling, chutney and sauce making, bottling,

[49]Integrated Agriculture and Health Based Interventions (IAHBI) End line Report 2016.

fermentation, fruit toffees, dehydrated nutrient dense vegetable mixes, fruit based yoghurt production) for value addition, income and nutrition.

11. *Training on product and nutrient labelling*: Selected district and Upazila level officials and related food processors will be provided ToTs on product labelling and relevant nutrient information on horticulture products (in Bangla language) to provide knowledge on nutrient composition of foods, make informed food choices and enhance household nutritional behaviour, who in turn will train the farmers.

12. *Behavioural change campaign*: Every year a 2-day behavioural change campaigns on National Food Safety and Agriculture Days will be carried out for enhancing horticulture consumption for women farmers specifically resource poor women to ensure increased demand of micronutrient rich fruits and vegetables by improving shelf life of the horticulture produce and increasing consumption and diversity of micronutrient rich foods in the diet for better nutrition. DAE, being the lead agency, will engage DAM to ensure active participation of large agro-processors (with some of whom DAM already signed agreement under subcomponent 2.1) in this campaign.

III. Project goal and sub component 2.3 relevant indicators

13. *Goal*: To contribute to Bangladesh's agricultural smallholders responsiveness and competitiveness in high value crops production and marketing of fresh and/or processed products.

14. *Sub component 2-3 relevant outcome indicator*

- Improve food security and nutritional level of rural poor especially smallholders will be reflected by a measurable indicator, notably 'Women Dietary Diversity Score (WDDS)' to measure micronutrient adequacy of women's diets.
- Increased women dietary diversity with a minimum of at least 5 foods out of 10 foods.

15. *Sub component relevant output indicator*

- Improved awareness of nutrition, hygiene and food safety
- Number of persons (women) provided with targeted support to improve their nutrition

IV. Illustration of linkages[50] between the outcomes and outputs of project sub component 2.3 towards food, nutrition and sustainability for SDG 2, SDG 9

Contributions of food safety and of nutrition to SDG 2, SDG 9	SDG 2, 9	Contribution of SDG 2, 9 to food safety and nutrition
Good maternal nutrition reduces risk of low birth weight and improves care of children. A well nourished workforce supports productive agriculture and more demand for food, increased nutrition security and reduced hunger (hidden hunger)	SDG # 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	Nutrition would benefit hugely from zero hunger and food security. Sustainable agriculture supports appropriate diets, income and resource base.
Post harvest transformation, value addition (storage, processing, product and nutrient labelling)	SDG # 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Nutrition would benefit hugely from zero hunger and food security. Sustainable agriculture supports appropriate diets, income and resource base.

[50] Adapted from Nutrition and the post 2015 SDG, UNSCN, A Technical Note, 2014

Enhanced nutrition education, nutrition behaviour change communication supports lifelong learning, later innovation potential. Industrialization and markets only thrive with productivity and growing demand across food systems	SDG # 9: Build resilient infra structure, promote inclusive industrialization and foster innovation	Innovations in productive technology, value chains and marketing enhance food safety and diet quality. Innovation in communication and marketing among the poor supports nutrition

Appendix 12: Technical Assistance

1. A sum of USD 3.0 million (excluding all taxes) out of overall SACP loan and Grant will be set out and used for Technical Assistance (TA) by FAO to the SACP Project Office and implementing agencies. The TA will be administered, managed and implemented by FAO Bangladesh in agreement with the Project Director, SACP with support from FAO Country Office and technical units in the Region and from the FAO headquarters, Rome.

2. The TA component will provide technical assistance and capacity building targeted at specific areas that will benefit from strengthening among government project implementation partners. TA activities will concentrate on: a) training of trainer's activities and follow-up coaching, b) assisting the development of a benefit M&E system and C) support to background studies.

3. Because of the nature of the TA activities, the TA input is foreseen to have a duration of four years, whereas the SACP is foreseen to be implemented over a six-year period.

4. Expected Outcome: *The capacity of implementing agencies has been strengthened to successfully implement the Smallholder Agriculture Competitiveness Project and reach expected SACP results.*

Output 1. Support to SACP component 1: Enhancing production and technology adoption

Activities under output 1

5. *Value chain studies (SACP sub-component 1.1).* The value chain specialist will support the project office in conducting value chain studies for the selection of high value crops. First a broad study of general market developments and production potential in the project districts will be conducted. After pre-selection of HVCs, detailed value chain studies will be conducted that will be used to determine research priorities and fine-tune other project activities. These detailed studies will also explore the opportunities for regional branding. It is expected the PO will contract these studies out. The TA team will support by providing advice on the terms of reference of the studies, by reviewing research proposals and by reviewing the study reports for quality assurance.

6. As markets change, after some time, the value chain studies should be updated. It is expected that this will be done by MoA (e.g. DAM), with coaching from FAO VC expert.

7. Market-led Farmer Field Schools (SACP sub-component 1.1). The market-led Farmer Field School (FFS) approach will build on previous MoA experience with FFS programme such as the DANIDA FFS Programme[i] and the IAPP Livelihood Field Schools.

8. Market-led FFS curricula will be developed for the chosen HVC. The TA project will train 30 master trainers (1 per upazila) over a three-month period. The SACP project office will then take over to train the SAAOs and farmer facilitators, with continued technical advice from the FAO FFS expert.

9. If experienced FFS facilitators are present in the selected unions, they can be selected to receive refresher training, adding elements of the market-led approach and new production techniques of the selected HVCs.

10. Market-led elements of the FFS will include:

- Private sector involvement: identified buyers and input suppliers will be invited to contribute their knowledge on market requirements, seasonal price fluctuations and terms of payment for the FFS curriculum, and inviting input suppliers and buyers to key sessions will become a standard feature of market-led FFs.
- Financial literacy: sensitize farmers on costs and benefits of bank account, how to read bank statements, cost of credit etc.

- Gross margin analysis of production. It is a standard feature of the FFS methodology to compare the profitability of the farmer technology plot with the new technologies plot, but unfortunately this financial analysis if often omitted. In the SACP market-led FFS master trainer and facilitator trainer programme a lot of attention will be given to the record keeping and profit analysis to ensure this exercise is properly carried out.
- Farmer walking the chain exercise (see component 2.1)
- Using market information for production planning
- Cropping techniques will include: Agro-ecosystem Analysis (AESA), integrated crop and pest management, crop rotation, fertilizer and chemical application, soil management, irrigation and water management and climate smart agriculture.

11. In addition, the FFS programme will include information on nutritional aspects of HVC and touch upon the challenges of climate change and other forms of threats to agriculture livelihoods.

12. *Development of benefit M&E system (SACP sub-component 1.3*) FAO will support the design of the SACP benefit Monitoring and Evaluation system. The benefit M&E and knowledge management system will be designed to also record and share challenges, best practices and lessons learnt. The benefit M&E system may also include a scoring card methodology for farmer group assessment on key project indicators.

13. FAO will assist the PO in evaluating different software packages and applications for easy data collection and analysis for the benefit M&E system. One possibility could be FAO Collect Earth open source software and Collect application which offers opportunities to include geospatial analysis and visual mapping of data and for which the software can be downloaded for free.

14. Whichever software package is chosen, it would need to be adapted to the Bangladesh and SACP context, especially the user interface. Field survey questionnaires, for which answers can be collected on hand-held devices will be developed and tested in collaboration with SACP implementing agencies. Selected PO staff will be trained to take over the IT support once the system is up and running.

15. FAO will train those responsible for project M&E at national, district and upazila level on benefit M&E and Knowledge Management, the use of handheld devices for data collection and data analysis and reporting (3 ToT sessions). Subsequently, FAO M&E experts will coach the project M&E team in the training of agency field staff involved in data collection to use the system. A lesson learning-cum-refresher training will be organized in the second year to address any issues that may have arisen during the first year.

16. Options will be explored to link the benefit M&E system with the project management M&E system (which will be in line with IFAD's revised results and impact management system (RIMS)). Such linkage will avoid duplication of data collection and improve the possibility of attribution of results to project activities.

17. Summary details of proposed TA for the Component 1to be supported by FAO:

Bangladesh
SACP Final Design
Table 1. Enhancing production and technology adoption to Producer Group and Farmer Marketiing Group

Detailed Costs	Unit	Quantities 18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total	Unit Cost - Negotiation (US$)	(US$ 000) Total
I. Investment Costs											
H. Technical Assistance											
1. Training needs assessment study	Training	1	-	-	-	-	-	-	1	14,675	15.2
2. International M&E Expert	pers_month	-	3	3	3	-	-	-	9	11,967	114.7
3. International Consultants on HVC	pers_month	-	6	3	-	-	-	-	9	11,967	113.1
4. International consultant (FFS)	pers_month	-	4	4	-	-	-	-	8	11,967	100.9
5. National Consultants for M&E	pers_month	-	12	12	12	-	-	-	36	4,892	191.7
6. National Consultant (FFS)	pers_month	-	12	12	12	-	-	-	36	4,892	191.7
7. Technical Support Service /f	LS/year	0.5	1	1	1	0.5	-	-	4	14,675	63.9
8. Travel expenses /g	LS/year	0.5	1	1	1	0.5	-	-	4	24,458	106.5
9. Project Servicing Expenses (at 7% of total expenditure)	LS/year										62.9
Subtotal Technical Assistance											960.6

Output 2. Support to SACP Component 2: Linking smallholder farmers to markets

Activities under output 2

18. *Buyer mapping (SACP subcomponent 2.1)* Under Subcomponent 2.1 specific buyers that are willing to buy the selected HVC from smallholder farmers will be identified by SACP so that they may be invited to contribute to the market-led FFS programme and the training programmes on marketing and post-harvest handling. Buyers may be agents from national agribusiness companies (large trading companies, processors, exporters, restaurant chains etc.) or local wholesalers or local independent small traders. For the district multi-stakeholder platforms, representative buyers at district level need to be identified.

19. FAO will work with PO staff to establish criteria for buyer selection (e.g. minimum volume traded, willingness to adapt buying practices to procure from smallholders and willingness to work with the SACP). FAO will subsequently train DAM district staff and upazila marketing facilitators on the buyer mapping methodology, including a rapid assessment of buyer's business models that will allow an assessment of whether they fulfil those criteria. These business model assessments will also provide better understanding of buyer requirements with regard quality, regularity of supply, minimum volumes, terms of payment etc.

20. After the ToT the FAO expert will coach the DAM staff to conduct the buyer assessment.

21. *Marketing facilitation (SACP sub-component 2.1)* The TA team, in collaboration with DAM, will develop a training manual on market facilitation techniques. Subsequently, FAO will train DAM district officers and upazila level marketing facilitators engaged by SACP (total of 3 training workshops). For some of the training sessions, private sector (buyers and input suppliers) will be invited.

22. Modules of this training will include:

- Increasing competitiveness through sound operational management: production planning, logistics, storage management
- Marketing: concept of market segments, market analysis including a "farmer walk the chain" exercise; marketing plan (4 Ps); developing longer term business partnerships including facilitating business meetings between farmer groups and buyers
- Basic financial management for commercial farming: bookkeeping, cost benefit analysis, economies of scale, cash flow and working capital, sources of funding
- Potential roles of farmer organizations in HVC value chains and group management for collective action

23. The ToT training will focus on the facilitation aspects, how to explain these concepts and marketing techniques to farmers in a way that is relevant for them. After the ToT the FAO expert will

coach the DAM officers for their training of field officers (either SAAOs or lead farmers, to be decided by the SACP PD), who in turn will train the farmers.

24. *Training of trainers on post-harvest handling and primary processing (SACP subcomponent 2.2)* FAO will contribute to the development of the training manuals on harvesting, post-harvest handling, storage and processing. The manuals will in first instance be developed based on existing knowledge, but will later be updated to incorporate research results as they become available from the SACP component 1.

25. The technical content will include the practical aspects of maturity indexes, harvest time and harvesting methods, use of harvesting tools, crates and field transportation trolleys, washing, grading, sorting, packaging (according to buyers' needs), storage and transport, hygiene and food safety, quality assurance. Separate manuals may be developed for perishable and non-perishable crops, or per HVC as the case may be.

26. In collaboration with DAM and BARI, the training will also include use and maintenance of post-harvest equipment, which may include threshers (for pulses), solar dryers, hybrid dryer, grain sheller, storage silo and ZEEC (final selection will be made depending on the selected HVC and buyer needs).

27. When the manuals are finished FAO will train and coach agency district and upazila level marketing facilitators engaged by the SACP (total of 3 ToT workshops and 3 refresher ToTs).

28. *Matching grant modalities (SACP sub-component 2.2)* FAO will support the SACP PO to design matching grant implementation modalities for investments in storage infrastructure, post-harvest and processing equipment at farmer, farmer group and rural entrepreneur level. This will include the application process, for which it is envisioned that applicants will need to submit a business plan. Eligibility criteria will be determined, including indicators for financial feasibility of the proposed investment, as evidenced by the business plan.

29. FAO will support a study to assess the best ownership and management modalities (e.g. by private entrepreneurs, by farmer umbrella organizations or by public entities) for the planned Upazila/union level commodity and marketing centres. FAO will support the PO by advising on the terms of reference for the study, reviewing technical proposals and quality review of the study report.

30. *ToT on RuralInvest module 2 (SACP sub-component 2.2)* At some point in the matching grant application process, the applicants will have to develop a simple business plan that shows the profitable use of the equipment or storage infrastructure to be installed, and project staff will have to evaluate those plans.

31. FAO proposes to use RuralInvest, both to guide the business plan development as well as to facilitate the evaluation of proposals. RuralInvest is a participatory approach for preparing rural investment plans. RuralInvest is a free multilingual methodology and toolkit designed to help with the preparation of sustainable agricultural and rural investment projects and business plans. It is participatory, interactive, bottom-up and decentralized way, involving communities, entrepreneurs, government field technicians and project staff.

32. Any agency, project, organization or private institution managing funds or mobilizing resources for small- and medium-scale agricultural and rural investment can apply RuralInvest to develop income-generating projects in agriculture, livestock, fisheries, forestry, agro-industries, transport services, retail stores, wholesale services, storage services, etc.

33. Advantages of RuralInvest:

- free toolkit available;
- participatory and interactive approach involving all stakeholders in project development and analysis;

- guidance through each step of the project life cycle;
- user-friendly software with comprehensive help features;
- automated technical and financial calculations; and
- analytical tools that facilitate quality review and approval.

34. Therefore, FAO will provide a training to upazila extension officers on RuralInvest module 2 to develop simple business plans with a basic financial feasibility analysis

35. The RuralInvest methodology will guide the upazila staff how to assist applicants develop their business plan and what information needs to be collected that will allow the SACP PO to decide whether the proposal is sound. It also provides an easy methodology to determine financial feasibility.

36. The standardized outline, investment costs and financial feasibility analysis, will also help the project management to compare proposals across upazilas, to compare profitability of different technologies and different HVCs.

37. FAO will also train national and district level staff on RuralInvest modules 3 for developing business plans and financial analysis for larger scale investments and on the investment portfolio management features of RuralInvest.[ii]

38. *Food safety and nutrition related studies (SACP sub-component 2.3)* FAO will support studies on nutrition and food safety by providing advice to the PO on terms of reference and by reviewing technical proposals and final study reports. Studies may include:

- nutritional contributions of high value crops, (e.g protein enriched lentils, orange fleshed sweet potato, selected micronutrient rich horticulture crops).
- market requirements for food safety and nutrition and related smallholder competiveness (how smallholders are at an advantage or disadvantage to fulfil these requirements); and
- low-cost post-harvest techniques for nutrient conservation in selected high-value crops

39. *Food safety and nutrition training of trainers (SACP sub-component 2.3)* To enhance the consumption of a safe and diversified diet for households, women and young children the SACP will develop a training programme on quality, food safety and nutrition.

40. FAO will contribute to the development of training manual on quality and food safety management for farmers and other value chain actors. This will be followed by a 5-days centre based training for resource persons from agencies such as Bangladesh Institute of Research and Training in Applied Nutrition (BIRTAN), BARC, BARI, DAE. FAO experts and resource persons will then roll-out a training of trainers programme at the district and upazila level.

41. *Training of trainers on community based safe food processing (SACP sub-component 2.3).* FAO will provide technical support through training of trainers at sub national levels on processing of micronutrient rich fruits and vegetables. The training will strengthen capacities on the use of simple hand operated/mechanised equipment to carry out processing and preservation activities (e.g. seed cleaning, blanching, drying, pulping, juice extraction, pickling, chutney and sauce making, bottling, fermentation, fruit toffees, dehydrated nutrient dense vegetable mixes, fruit based yoghurt production) for value addition, income and nutrition. This will enhance the institutional capacity to train communities to strengthen capacities, skills and empowerment of poor women and ultimately increase the community consumption of micronutrient rich foods.

42. Training on product and nutrient labelling (SACP sub-component 2.3). 3-day ToT Training on product labelling and relevant nutrient information on horticulture products (in Bangla language) for selected district and upazila level officials, to provide knowledge on nutrient composition of foods, make informed food choices and enhance household nutritional behaviour.

43. *Behavioural change campaign (SACP sub-component 2.3).* FAO will support the content development of 1-day behavioural change campaigns on National Food Safety and Agriculture Days and regular radio and TV awareness programmes for enhancing horticulture consumption for women farmers specifically resource poor women to ensure increased demand of micronutrient rich fruits and vegetables by improving shelf life of the horticulture produce and increasing consumption and diversity of micronutrient rich foods in the diet for better nutrition.

44. Summary details of TA for the Component-2 are as below:

Bangladesh
SACP Final Design
Table 2. Linking Smallholder Farmer to Market

Detailed Costs	Unit	Quantities								Unit Cost - Negotiation (US$)	Ot (US$ 000) Total
		18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total		
I. Investment Costs											
E. Technical Assistance											
1. Staff training (based need assessment study)	Training	0.5	1	1	1	0.5	-	-	4	39,133	170.4
2. International Value Chain Specialist	pers_montl	-	6	6	6	-	-	-	18	11,967	229.4
3. International Consultants - Post-harvest & Quality management	pers_montl	-	6	6	6	-	-	-	18	11,967	229.4
4. National Consultants-Value Chain	pers_montl	6	12	12	12	-	-	-	42	4,892	222.0
5. National consultants, Nutrition	pers_montl	-	12	12	12	-	-	-	36	4,892	191.7
6. Technical Support Service - Agribusiness Expert	pers_montl	-	12	12	12	-	-	-	36	4,986	191.1
7. Travel expenses /a	per_year	0.5	1	1	1	0.5	-	-	4	24,458	106.5
8. Project Servicing Expenses (at 7% of total costs)	LS										93.9
Subtotal Technical Assistance											1,434.4

Output 3. Support to SACP component 3: Climate resilient water resources management

Activities under output 3

45. *ToT on water user groups and low-pressure high efficiency irrigation (SACP sub-component 3.2)* FAO will contribute to the development of a training manual for component 3, with FAOs contribution focussed on the mobilization and training of water user groups and on low-pressure high-efficiency irrigation methods, rainwater harvesting, environmental aspects of surface water management, salinity management and climate change effects,

46. After training manual development, FAO will train selected BADC officers at district and upazila level (total of 3 training workshops and 3 refresher training sessions). They will in turn train field staff (under responsibility of SACP PD).

47. The training manual and ToT training will include:

- Mobilization and formation of Water User Groups (WUGs)
- Training of WUGs following government participatory water management guideline
- Technical skill development with regard to low pressure high efficiency irrigation systems (such as drip irrigation), use of solar power and monsoon rainwater harvesting for use during rabi season.
- Environmental aspects of surface water management for crop production, salinity management, rainwater harvesting, water conservation, linkages to resilience and climate change effects.

48. Summary details of TA are presented in Table below:

Bangladesh
SACP Final Design
Table 3. Climate resilient water resources management

Detailed Costs	Unit	Quantities								Unit Cost - Negotiation (US$)	(US$ 000) Total
		18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total		
I. Investment Costs											
C. Technical Assistance											
1. Training of Trainers (TOT)	training	1	1	1	-	-	-	-	3	5,870	18.7
2. International consultants (irrigation, WUG & water harvesting)	ɔers_montl	-	6	3	3	-	-	-	12	11,967	152.1
3. Technical support services (unspecified National consultants))	ɔers_montl	3	6	6	6	-	-	-	21	4,892	111.0
4. Travel for TA staff	per year	0.5	1	1	1	0.5	-	-	4	17,928	78.1
5. Project servicing expense (estimated at 7% of total expenditure)	LS										25.1
Subtotal Technical Assistance											385.0

Output 4. Support to SACP component 4: Institutional support and project management

Activities under output 4

49. Activities under TA support will include procurement of non-expendable and expendable items for the TA team, international operations officer, national consultants for knowledge management and communications, unspecified technical support, support staff services, general operations expenses, TA travel to the project area sites etc, Non-expendable items include computer and printers for the TA staff, other office equipment, purchase one vehicle etc and these items would be returned to the Project Director after the completion of TA services. International operations officer will be responsible for the overall coordination of the TA team, preparation of relevant periodic reports as required by PD, IFAD and FAO and acting as the focal point.

50. Summary details of TA for component 4 are presented below

Bangladesh
SACP Final Design
Table 4. Institutional Support and Project Management

Detailed Costs	Unit	Quantities								Unit Cost - Negotiation (US$)	(US$ 000) Total
		18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total		
I. Investment Costs											
H. Technical Assistance											
1. Non-expendable Procurement /c	LS	1	-	-	-	-	-	-	1	83,388	86.1
2. Expendable Procurement /d	LS/year	0.5	1	1	1	0.5	-	-	4	4,892	21.3
3. International Operation Officer /e	ɔers_montl	6	12	12	12	6	-	-	48	4,905	255.6
4. National Consultant - KM and Communication	ɔers_montl	-	3	3	3	3	-	-	12	4,892	64.8
5. Technical support services	ɔers_montl	-	4	4	4	-	-	-	12	4,892	63.9
6. Office support staff for TA team	ɔers_montl	12	24	24	24	12	-	-	96	978	102.3
7. General Operation Expenses	LS/year	0.5	1	1	1	0.5	-	-	4	6,359	27.7
8. TA staff Travel	LS/year	0.5	1	1	1	0.5	-	-	4	4,794	20.9
9. Project Servicing Expenses (at 7% of total cost)	LS										44.8
Subtotal Technical Assistance											687.3

Appendix 13: Draft SACP project implementation manual

1. Its drafting is in accordance with IFAD and government's review. It should be updated at project start-up by the Project Office.

Abbreviations and acronyms

AWPB	ANNUAL WORK PLAN AND BUDGET
BADC	BANGLADESH AGRICULTURAL DEVELOPMENT CORPORATION
BARI	BANGLADESH AGRICULTURE RESEARCH INSTITUTE
BBS	BANGLADESH BUREAU OF STATICS
BDT	BANGLADESHI TAKA
CI	CORE INDICATOR
DAE	DEPARTMENT OF AGRICULTURAL EXTENSION
DAM	DEPARTMENT OF AGRICULTURAL MARKETING
DCU	DISTRICT COORDINATION UNIT
DT	DETAILED COST TABLE
ECA	ENVIRONMENTALLY CRITICAL AREA
ERD	ECONOMIC RELATION DIVISION
FAO	FOOD AND AGRICULTURE ORGANISATION
FAPAD	THE FOREIGN AIDED PROJECTS AUDIT DIRECTORATE
FPM	FARMER PRODUCER AND MARKETING
GAFSP	THE GLOBAL AGRICULTURE AND FOOD SECURITY PROGRAM
GOB	GOVERNMENT OF BANGLADESH
HVC	HIGH VALUE CROPS
IAPP	INTEGRATED AGRICULTURAL PRODUCTIVITY PROJECT
IFAD	THE INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD)
KM	KNOWLEDGE MANAGEMENT
MIS	MANAGEMENT INFORMATION SYSTEM
MOA	MINISTRY OF AGRICULTURE
NATP-II	NATIONAL AGRICULTURAL TECHNOLOGY PROGRAM – PHASE-II PROJECT
OC&CAG	THE OFFICE OF THE COMPTROLLER & AUDITOR GENERAL
ORMS	OPERATIONAL RESULTD MEASUREMENT SYSTEM
OST	OPERATIONAL SUPPORT TEAM
PD	PROJECT DIRECTOR
PIM	PROJECT IMPLEMENTATION MANUAL
PME	PARTICIPATORY MONITORING AND EVALUATION
PO	PROJECT OFFICE
PPA	PUBLIC PROCUREMENT ACT 2006
PPR	PUBLIC PROCUREMENT RULES 2008
PSC	PROJECT STEERING COMMITTEE
RIMS	RESULTS AND IMPACT MEASUREMENT SYSTEM
SAAO	SUB-ASSISTANT AGRICULTURAL OFFICER
SACP	SMALLHOLDERS AGRICULTURE COMPETITIVENESS PROJECT
SAE	SUB-ASSISTANT ENGINEER

SOE	STATEMENT OF EXPENDITURE
TOR	TERMS OF REFERENCE
TOT	TRAINING OF TRAINERS
WUG	WATER USER GROUP

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PROJECT IMPLEMENTATION MANUAL

Project Implementation Manual - SACP

1. Project description

1.1 Introduction

1. Southern region constitutes 14 sea facing districts[51] under three hydrological regions of Bangladesh – southwest, south central and south east (FAO, 2013). The region reckoned as the world's largest delta exposed to diverse climatic and non-climatic stress, such as recurrent natural disasters, salinity, flood and water logging. Thus agriculture of the south is lagging behind in terms of cropping intensity which ranges from 100 to 169 percent, (varies with land type and water regime) vis-à-vis national average of 191 percent (BBS, 2015). The coastal region occupies extends around 30% of the country and covers about 130 Upazilas under 14 districts with 26% population of entire country.

2. Investing southern agriculture has been considered as one of the highest priorities of the Government of Bangladesh (Master Plan for Agricultural Development in the Southern Region, MoA-FAO, 2012). The Government also aspires that with the opening of the Padma bridge in 2018, many farmers of the southern districts will have increased opportunities to sell their products to Dhaka markets (high value crops, vegetables, legumes and fruits), the shortened transit times will expand the opportunities for high value fresh produce that is properly picked, packed and transported and where the major extension agencies of MoA can play a significant role in improving current cropping practices. On this backdrop, the Government of Bangladesh requested IFAD's assistance to partner the Ministry of Agriculture in developing a project to support farmers in Southern Bangladesh. The Smallholders Agriculture Competitiveness Project (SACP) thus has been designed to meet key IFAD and government priorities as articulated in the national policy framework for investing southern agriculture. The project aims to support this diversification process into high value cropping in Southern Bangladesh. For the purposes of this project High Value Crops (HVC), are defined as crops which have higher profit, per limiting input, then high yielding winter boro rice production; this therefore includes Flowers, Fodders, Fruits, Oilseeds, Pulses, Spices and Vegetables. The theory of change is premised on a demand-driven approach to project interventions to facilitate strengthened market linkages between all stakeholders in selected commodity value chains to deliver increased incomes.

3. The project will support production enhancement, identify market opportunities for both fresh and processed products, value added post-harvest management, build competitiveness in HVCs to move households from subsistence farming into commercial farming through three technical components supported by a project management

[51] According to Master Plan for Agricultural Development in the Southern Region, the southern region as defined is comprised of 14 districts of the coastal zone exposed to the Bay of Bengal. These districts are: Barguna, Barisal, Bhola, Jhalokathi, Patuakhali and Pirojpur districts under Barisal division; Chittagong, Cox's Bazar, Feni, Noakhali and Lakhsmipur districts under Chittagong division; and Bagerhat, Khulna, Satkhira districts under Khulna division southern region as defined is comprised of 14 districts of the coastal zone exposed to the Bay of Bengal. The districts are: Barguna, Barisal, Bhola, Jhalokathi, Patuakhali and Pirojpur districts under Barisal division; Chittagong, Cox's Bazar, Feni, Noakhali and Lakhsmipur districts under Chittagong division; and Bagerhat, Khulna, Satkhira districts under Khulna division.

component. They are: Component 1 - Enhanced production of HVC and technology adoption; Component 2 – Processing and marketing of HVC and Component 3 – Climate resilient surface water management

1.2 Project Goal and Objectives

4. **Project goal** is to contribute to Bangladesh's agriculture smallholders' responsiveness and competitiveness in high value crops (HVC[52]) production and marketing of fresh and/or processed products.

5. **Project objective** is to increase farmer incomes and livelihood through demand-led productivity growth, diversification and marketing in a changing climatic condition.

1.3 Project Scope

6. The project will support production enhancement, identify market opportunities for both fresh and processed products, value added post-harvest management, build competitiveness in HVCs to move households from subsistence farming into commercial farming through three technical components supported by a project management component. The project also builds on the assumption that with the opening of the Padma bridge in 2018, many farmers of the southern districts will have increased opportunities to sell their products to Dhaka markets (high value crops, vegetables, legumes and fruits), the shortened transit times will expand the opportunities for high value fresh produce that is properly picked, packed and transported and where the project can play a significant role in improving current practices. The focus will be to enhance production quantity and quality through appropriate productive infrastructures, quality agriculture inputs and training of farmers and value chain actors, as well as, linking farmers and their groups to private dealers and traders to enhance fair contract farming[53] and postharvest and processing contracts.

1.4. Project Location

7. The project will be implemented in 11 districts covering 30 upazilas in the Southern Region of Bangladesh, 250 unions will be selected based on the targeting criteria. The districts and upazilas are:

3) Bagerhat: Fakirhat and Kachua
4) Shatkhira: Shyamnagar and Kaligonj
5) Pirojpur: Kawkhali
6) Jhalokathi: Kathalia and Nalchiti
7) Bhola: Lalmohon, Charfasson and Monpura
8) Patuakhali: Mirzagonj, Rangabali and Kalapara
9) Borguna: Amtoli, Batagi, Bamna, Taltoli and Pathorghata
10) Chittagong: Boalkhali, Fatikchari, Chandanaish, Banskhali, Sandip and Mirsharai
11) Noakhali: Subarnochar, Chatkhil, Kabirhat and Hatia
12) Feni: Chagolnaiya
13) Laximpur: Kamalnagar

[52] Legumes, Vegetables and Fruits.
[53] Using enhanced local practices and following the contract farming legal guide issued in 2015 : http://www.unidroit.org/work-in-progress-studies/studies/contract-farming

8. Regarding the two upazilas of Shaymnagar and Kaliganj in Satkhira district, unions within the 10-kilometer northward peripheral areas that are declared as ECA will not be selected

1.5. Project Beneficiaries

9. The total population is 7,018,218 in the target 30 upazilas of 12 project districts, representing 1,246,021 households. The project will directly benefit at least 250,000 rural households. The selection of project beneficiaries will be undertaken based on an inclusive targeting strategy focusing on landless, marginal and small farmers, with up to 80 percent of beneficiaries coming from these categories. Youth will constitute up to 20 percent of beneficiaries and women participation will target at least 30 percent involvement. The Project will be implemented over a period of five to seven years.

10. The project will take farmer groups as its entry point for support to enhance production and value chain development in the project areas. The project will focus on strengthening agriculture competitiveness, strengthening sustainable technical support services/facilities, identification of market opportunities and linking these to an applied research, development and extension programme to support small farmers, improving access to income opportunities of high value crops through multi-stakeholder platforms, developing market linkages, and supporting individual and group organizational capacity to participate in agricultural value chains.

2. Purpose of Manual

11. This Project Implementation Manual (PIM) provides guidelines for implementation of the Smallholders Agriculture Competitiveness Project (SACP). The PIM elaborates the targeting strategy, component wise detail implementation plan and activities, synergies between the component and specifies implementation arrangements of each of the main components of the project. The PIM outlines the financial management arrangements and procurement methods including flow of funds and audit systems. The PIM also provides guidance on the structure and operations of the planning, monitoring, evaluation and knowledge management functions which will be put in place by the project.

3. Institutional Arrangement

3.1. Lead Project Agency

12. The Department of Agricultural Extension (DAE) will act central role for managing SACP and hence designated as a lead project agency.

3.2. Project Steering Committee (PSC)

13. The Project will be implemented under the overall direction of a Project Steering Committee (PSC) chaired by the Secretary of MoA and encompassing representatives from the ministries such as ERD, line departments that are related to the Project. The PSC will evaluate and approve annual work plans, and provides directives on strategic aspects of the implementation management.

3.3. Project Office

14. **At central level, the Project Office** for SACP will pay special attention to the leading functions of DAE and coordination among implementing agencies. The Project Office will be headed by a Project Director appointed from DAE by MoA and it will include Component Coordinators from principal implementing agencies namely DAE, DAM and BADC, and BARI, seconded by government-deputed officers. In addition, the Project Office will be supported by an operational support team of externally recruited experts whose positions are funded by the Project.

3.4. District Coordination Unit (DCU)

15. **<u>At district level</u>, District Coordination Unit (DCU)** will be established as technical hub and composed of one lead technical officer from each of the District DAE, DAM, BARI and BADC, and other necessary staff required in all the project districts. The DCU will be embedded in the respective District DAE office. Under the over direction of the Project Director at the Project Office, the DCU will be led by the Deputy Director of District DAE and it will be responsible for coordination of the project activities implemented by the district project line agencies and/or other contracted service providers, ensuring operational coordination through the structure of upazila and union offices to the grassroots level, ensure the timely and operational functions in the areas of project financial management, M&E and KM, procurement support and follow-ups, at its own level and the lower levels. It will collect physical and financial periodic progress reports from the involved implementing agencies, maintain district consolidate records, prepare reports and deliver them to the Project Office. Other responsibilities include:
    a) Overseeing work of executing agencies and service providers and the selection of the target groups that will participate in project activities;
    b) Facilitating district and lower levels' participatory planning activities to determine which activities will be implemented in which communities;
    c) Reviewing and recommending to the PO the community-level implementation work plans prepared by the line agencies;
    d) Coordinating the involvement of district technical agencies and their grassroots-level extension, NGOs, private sector players, as well as farmers' groups; and
    e) facilitating liaison with target communities, assisting with the collection of M&E data, and documentation of project activities

3.5. Upazila and Union DAE Offices

16. DAE offices at Upazila and Union will participate in extending the operational coordination from the DCU to the target groups. Upazila Agricultural Officer and Union Sub-Assistant Agricultural Officers (SAAOs) will be the focal persons for the field implementation. Similarly, BADC's upazila Sub-Assistant Engineers will participate in field implementation.

3.6. Group Facilitation

17. Mobilization and strengthening of new and existing producers groups will be facilitated by the Sub-Assistant Agricultural Officers (SAAOs) of DAE under Component 1. While *DAM* will engage outsourced Marketing Facilitators at upazila level to work with the farmer groups in the unions under Component 2. The Marketing Facilitators will closely work with SAAOs. Similarly under Component 3, the Sub-Assistant Engineers (SAEs) of BADC will work closely with SAAOs for mobilizing Water User Groups (WUGs) in selected irrigation schemes to be improved or established by the BADC.

18. *Additionally, in each project union,* three lead farmers will be selected from the selected farmer groups and they will be engaged on a basis of daily basis remuneration in accordance with actual day (s) occurred, to support the field work of upazila officers of DAE, BADC and DAM marketing facilitators

3.7. Technical Assistance

19. The Technical Assistance part will be managed and implemented by FAO Bangladesh in agreement with the Project Lead Director of the project, with support from FAO-Bangladesh Country Office and technical units in the Region and HQ, will provide technical assistance and capacity development of government project implementation partners including the MOA. Technical assistance broadly identified for Component 1 are: value chain studies, Market-led FFS curricula will be developed for the chosen HVC *and Development of benefit M&E system.* The TA team will provide backstopping support for Component 2 on conducting buyer mapping, ToT for DAM staff on buyer assessment,

market facilitation, ToT on *post-harvest handling and primary processing,* designing matching grant implementation modalities, post-harvest and processing equipment at farmer, farmer group and rural entrepreneur level, *ToT on Rural Invest module and Food safety and nutrition related studies and training. The TA team will provide ToT to the BADC staff on water user groups and low-pressure high efficiency irrigation.*

4. Project Financing

4.1. Cost and Financing

20. Total Project Costs is estimated at USD 109.85 million. This is inclusive of all contingencies of USD 3.99 million, beneficiary contribution in the form of participation at USD 6.6 million and USD 8.1 million private sectors, USD 28.65 million will be funded from the government including staff salaries, rentals and in the form of waiver of taxes and duties.

21. Financing plan: The proposed financiers for the Project are IFAD loan, the Government, beneficiaries, private sector, and IFAD grant. IFAD PBAS loan will finance about USD 64.5 million about 58.7% of total project costs, the government counterpart funding will be about USD 28.65 million (26.1% of the total project cost) including taxes. The IFAD grant is estimated at USD 2 million (1.8% of the total project cost).

4.2. Expenditure Categories and Financing Percentages

4.3. Project Costs by Project Component

22. The project cost is distributed into four different components of the project. Around USD 17.16 million (15.6% of the total project cost) will be allocated to the enhancement of high-value crop production and technology adoption. The cost of the component for processing and marketing of high-value crops, including improving market linkage and post-harvest processing, is estimated at USD 34.1 million (31.0% of the total project cost). Around USD 46 million (41.8% of the total project cost) will be allocated to surface water management where a large percentage of the cost will be for the infrastructure development. The remaining USD 12.6 million (around 11.5% of the total project cost) will be distributed to the project management.

5. Component/ Sub-component

5.1. Component 1: Enhanced production of HVC and technology adoption

23. *The objective* of Component 1 will be the identification and prioritisation of appropriate VCs for smallholder investment and associated key research gaps that need to be filled through on-farm and on-station research. The purpose of the component is to develop the capacities for linking farmers to markets with enhanced production. This component will support the testing, evaluation and adoption of new technologies, agriculture inputs (seeds), and management practices by smallholder farmers to enhance their production of HVCs that have identified market opportunities. This component will contribute to developing agricultural competitiveness linked to market demands by: (i) assessing the market demand for HVC that can be produced in the south, (ii) identifying research demands in response to new cropping systems, new crops and/or new varieties and improved post-harvest management storage options, (ii) strengthened research-extension and private sector service provision, and (iii) organizing producers and marketing groups to form greater scale and bargaining power.

24. *Implementation strategy*. The component will embrace market-led research, with sub-Component 1.1 being implemented by trained and capacitated DAE staff at Upazila and Union levels and BARI at regional and greater district on-farm research stations and sub-Component 1.2 being led by BARI. Involvement of the private sector will be cross cutting and they will be involved in identification of market opportunities, support to identification of the quality and quantities required by different markets and through input provision, postharvest management and marketing linkages, as well as processing.

Sub-component 1.1: Assessment of HVCs and group mobilization

25. The starting point for project intervention is the identification, assessment and prioritisation of HVC value chains. At start-up a detailed value chain analysis of horticultural and other high value crops will be conducted for final selection of potential HVCs suitable for production in the southern delta of Bangladesh. A community process will identify existing groups and target farmers who are interested to invest in these HVCs. If new groups are needed, smallholders will be formed into collaborative Farmer Producer and Marketing (FPM) groups, each with approximately 25 households. The composition of the FPM groups will take into consideration the planned focus on women and youth and most marginalized groups, reflecting inclusive targeting strategies. Later FPMs that have developed capacities and market linkages with buyers will be federated to achieve economies of scale and integrated into multi-stakeholder platforms. To reach the project target groups, the following activities will be implemented:

26. A market-led research on assessment and prioritization of HVC value chains - Identification of value chain/manageable sub-sector inventory considering the market potential impact area of the project and its life time with the greatest potential for growth in small enterprise income and employment will be assessed during the inception of the project.

27. *Village-level assessment and prioritisation of potential value chains* – After broad base selection of HVCs, village level prioritization exercise will select HVC smallholder groups. This will allow each group to produce potential HVC and create an economy of scale of both inputs needs and outputs produced by the members of groups which should attract private sector to sell or buy in bulk.

28. *Identification of existing groups at the village and union level*. DAE has already mobilized farmers groups under different projects, so the first activity is to conduct a mapping of existing groups, determine which groups can be worked with under SCAP and what level of capacity building and support they would need. Where needed SACP will form new groups. All groups will be mobilized by the field extension workers using different participatory tools like wealth ranking, social and resource mapping, membership profiling, etc. The groups should be inclusive, considering age and gender. For both already created and newly formed groups, it will be essential to involve young farmers from the early mobilization phase. They will serve as catalysts to further disseminate new technologies and their level of ownership of the potential results will need to be thought through the groups' formation process.

29. *Engagement of production facilitators* – In each project union, the SAAOs will mobilize new groups and strengthen old groups. They will work as Production Facilitator and facilitate implementation of the project.

30. *Training of Trainers (ToT) for SAAOs on PRA and group mobilization* – during mobilization of farmers into groups, the extension workers role would be facilitation, not

as 'doers'. Keeping these principles, the SAAOs will be trained on standard tools and techniques of PRA to strengthen existing groups and to mobilize new ones. The training will also touch upon the challenges of climate change effects and technologies to make communities (and farmers) more resilient to natural disasters and other forms of threats to agriculture livelihoods.

31. *PRA for groups formation and mobilization* - this activity will be conducted only for the mobilization of new groups where there are no groups previously mobilized by DAE or by other extension agencies. As mentioned above, the early involvement of youth will be essential to create a future driving force for new adaptive technologies.

32. *Identification and prioritization of technology and research needs for selected crops* - Upazila level consultation on identification, prioritization and selection of proven technologies will be conducted through workshops with the participation of private sector, extension & research agencies and smallholder farmers. A list of such scalable technologies for southern delta proposed by the BARI is given below.

Areas	Technologies
Productivity enhancing technologies	Yield gap reducing technologies for oil crops; Alternate Furrow irrigation; Drip Irrigation; Improvement of location specific Cropping Pattern Varietal Evaluation of selected HVCs Summer tomato production; Enhanced orchard establishment and fruit tree management; Compost production and improved soil management; Integrated Pest Management (IPM) in vegetables; Establishment of homestead vegetable gardens; Promotion of newly released varieties (e.g. BARI black cumin, sesame, linseed, BAU Garlic-3, BARI, Lentil-7, etc).
Post-harvest loss reducing technologies	Enhanced post-harvest handling (packaging of mustard, pulses, vegetables and fruits); Cleaning, sorting, grading and packaging of vegetables.
Agro-food processing	Private sector-led processing of smallholder produced mungbean, oil crops, fruits and tomatoes; etc…
Others (e.g., adaptation to climate change)	Off-season vegetable production; Climate-smart agriculture, soil conservation through zero/reduced tillage; Promotion of *dhap* (floating vegetable culture) in low lying areas.

Sub-component 1.2: Demand-driven production and market-led research

33. Identification of action research needs will be based on the analysis and prioritisation of the VC studies, and the FPM group needs for information new and demanded technologies and on-farm mechanization etc. Some key constraints already identified are availability of breeder and foundation seeds of pulses, oilseeds and other HVCs, access to inputs, affordable mechanisation, appropriate packing materials, suitable processing or semi-processing techniques and equipment. To reach the project target groups, the following activities will be implemented:

34. *Action research on climate smart technologies* – Action research on prioritized technologies identified by the extension, research, private sector and smallholders will be conducted by BARI at its regional station and farmers. Standard protocol of action research will be designed by the HVC specialist of both BARI and additional consultants. Once finalized, the manual for each technology will be developed by BARI and handed over to the DAE for wider dissemination to the farmers. The market research specific to the project areas will be strengthened in BARI and local relevant universities. Services of the consultants (including TA) will be utilized in development of research programs.

35. *Evaluation of stress (e.g. saline, submergence and drought) tolerant varieties* – suitable HVC varieties already released by the BARI will be evaluated both at on-farm research field and by farmers to assess performance, yield gap, and soil management. On farm research division of BARI will be made involved in the process of evaluation. These efforts will be oriented in the direction of defying climate change effects.

36. *Evaluation of appropriate mechanization options* - The project will form a Technical Committee for performance testing of appropriate machinery promoted by the importers, local manufacturers/traders through floating an Expression of Interest in newspapers. All machines have to be tested at BARI. Upon recommendations by the Technical Committee, appropriate machines and respective companies will be enlisted with the project. The selected brands of tested machines will be promoted among farmers by DAE, with a special focus on young farmers who seem to be more receptive to new machineries.

37. *Research on on-farm post-harvest storage and agro-processing* - Postharvest management (PHM) is another part of mechanization especially for HVCs. Appropriate small scale postharvest technology is needed especially for HVC clusters across the southern delta for smallholders to achieve better market outcomes. On-farm research on post-harvest storage and agro-processing will be conducted for vegetables, fruits, pulses, oil-crops especially on small scale processing machineries, through the establishment of common facility center at farmer groups, etc.

38. *Multiplication of seeds/planting material of HVCs* – seeds and planting materials for prioritized HVCs will be multiplied to ensure availability among farmers. BARI will produce breeder seed and handed over to the BADC to produce foundation seeds to distribute among farmers. Private seed operators will also be linked in the seeds supply system.

Sub-component 1.3 Institutional support for research and extension

39. Institutional support will be provided to secure the quality of project implementation, such as improved service facilities for both extension and research in the forms of necessary infrastructure and equipment (also ensuring environmental conservation and necessary climate resilience enhancement), deployment of project staff, and supply of vehicles. To reach the project target groups, the following activities will be implemented:

Formation of implementation team at different levels by placing capable manpower;

Development of comprehensive work and budget in line with the log-frame of the project;

Timely procurement and efficient use of equipment and goods;

Develop and implementation and effective monitoring system, also able to record and share challenges, identified best practices and lessons learnt;

Regular and effective coordination within the implementation stakeholders at different level centre to union;

Regular follow-up of monitoring and evaluation activities;

Proper capturing of information, documentation and reporting.

Component Exit Strategy and Sustainability:

40. The component will build capacity of existing and/or new producer groups on identifying market opportunities and identify the service providers along the value chain who are needed to increase their productivity, profitability and reduce their food security risks from engaging more in market-led agriculture. Increased capacities in DAM and DAE staff will continue to be applied after the project has ended, as well the group capacities. These initial skills will be further supported and sustained through linkages with other GoB departments for getting registration and allied extension and marketing services and the private sector along the selected value chains.

5.2. Component 2: Processing and marketing of HVC

41. This component will support small holders to access market in a more efficient manner through creating a conducive business environment for private sector to reach them. In parallel, promising rural agro-enterprises (individual farmer, farmer groups and/or rural entrepreneurs) will be assisted to add value to primary products and penetrate market through value-added products. Besides, village-level food processing will be promoted to encourage nutrition and food-safety along the value chains. . Value addition will be through improved post-harvest practices, processing, storage, and transport of agricultural commodities. Activities will focus on (i) capacity building of DAMs (ii) developing a demand-driven extension approach within DAE and DAM and by engaging private sector, (iii) linking with private sector buyers (v) developing opportunities for village-level food processing, and (vi) developing existing and potential rural enterprises' ability to manage sustainable rural agro-enterprises.
42. **Implementation Strategy** – This component builds on value chain selection and production related capacity building activities for farmers under Component 1 and therefore, develops farmers' skills on post-production activities to access market in a more efficient and effective way. Under this component, the project will invest in reducing the market inefficiency, especially in terms of asymmetric information. Through the creation of the entry point and platform (farmer groups) under Component 1, the private sector will be able to communicate to the producers in a cost-effective way about their requirements in terms of quality and quantity, price conditions for different marketable categories, packing and packaging, delivery conditions. This will help reduce the perception of additional costs, or risk of negative return from quality and quantity assurance at production level by the buyers. The lead implementer for this component is Department of Marketing (DAM) through collaboration with other implementing agencies. It is important to note that the interventions/activities under this component will be undertaken in parallel to those under Component 1 and Component 3 to ensure synergy

and maximization of resources. For example, a buyer may require a specific product to be supplied with certain packaging features but may also want the product to be produced using a specific seed variety. While the former falls under post-production knowledge i.e under Component 2, the latter has to be addressed at production level i.e. under Component 1.

Sub-component 2.1: Improving market linkage

43. This subcomponent focuses on improving institutional capacity of DAM to enable them to foster market linkages. Considering the current level of under-staffing, 30 Upazila Marketing Facilitator will be engaged through outsourcing in this project under DAM – one in each Upazila. These Upazila Marketing Facilitators will be the primary focal points for working with farmer groups on market-access and marketing-related aspects, and collaborate closely with SAAOs in respective Upazilas to transfer jointly post-production and marketing knowledge to farmers.
44. *Buyer mapping and assessment* - DAM district level staff (3 most senior staff) and Upazila Marketing Facilitators will be trained on 'buyers mapping' followed by assessment of buyers. While buyer mapping will identify existing buyers for selected crops at different tiers of a value chain i.e. local traders, wholesalers, institutional buyers etc.; assessment of buyers will help select most potential buyers who the project may work together to enhance farmers' capacity to respond to market needs. Buyer selection criteria will be developed at PO level and these criteria may include willingness to collaborate, area coverage, procurement volume, product portfolio dealing with etc. DAM will conduct/update the buyer mapping cum assessment once in every one year and a half through involving district level staff, Upazilla Marketing Facilitators and also the SAAOs in the targeted areas to create room for more buyers to join the project who fulfil the selection criteria. In the whole project period, the project should select and work with at least 10 institutional buyers and 100 individuals for different value chain crops.
45. *Agreements with buyers* - Upon identification and selection of buyers, the project will enter into agreements with them delineating the roles and responsibilities of each party. While for institutional buyers it will be formal MoUs at PO level, for individuals it can be informal agreements at local level. The major role for the project is to prepare farmers (through both Component 1 and Component 2) to comply with the agreed upon requirements of the buyers. Buyers' major role would be to attend relevant training sessions for farmers arranged by the project and educate them about their needs. The MoUs and informal agreements should not be a binding document for a guaranteed purchase which may reduce the interest among buyers to collaborate. The rationale behind not having such guaranteed purchase clause are: a) through value chain selection under Component 1 most demanded crops are already selected which are likely to have high unmet market demand; b) through interventions under Component 1, the targeted farmers are expected to be more productive which means, they will make higher profit even if they sell in regular market; c) buyer mapping and assessment has already identified the demand-supply mismatch which are resolved through supporting the farmers and hence, selected buyers are very likely to buy from them. DAM (national, district) staff including their Upazila Marketing facilitators will initiate the negotiation with interested private businesses (local traders, regional wholesalers, national companies, exporters etc) already identified, to educate farmers alongside SAAOs on their needs and requirements and how to comply with those. In the negotiation, the project will primarily highlight the opportunities it will create through investment (such as farmer groups, farmer training on post-harvest techniques and business management skills etc) for private businesses to tap and get access to those 'better equipped' farmers and hence, how much the private businesses would offer to join in such investment – either in kind or cash. There will be formal MoUs signed between DAM and institutional buyers delineating

the roles and responsibilities of each party while with individual buyers, informal agreements can be made at Upzilla and district level.

46. *Business management skills development* - Every farmer is an entrepreneur and like any other business, farming also need operational, marketing and financial management. Lack of knowledge of farmers on these aspects often make them inefficient and non-competitive. Linking with buyers will be fruitless unless the farmers manage their farming efficiently and in compliance with buyers' requirement. DAM district level staff and Upazila Marketing Facilitators will be trained on basic business management skills along with Business Development Services (BDS). They will train the SAAOs who in turn will train farmers in a simplistic way. Once the DAM district level staff and Upazila Marketing Facilitator become knowledgeable on business management skills and BDS (such as finance, standards, certificates, legal requirements) provisions and respective providers, they can assist not only farmers but also rural-agro enterprises to avail different BDSs through an informed manner. The project will support documentation and printing of business management skills technical modules as well as mapping of BDSs provisions required for different agro-enterprises so that these resources can be used beyond the project period.
47. *Formation of multi-stakeholder platforms* – The project will form multi-stakeholder platform in each district stationed in the local Chamber of Commerce and Industry office. These multi-stakeholder platforms will include Farmer Groups, representatives from the local Chamber of Commerce and Industry, local government, DAE and DAM, research institutions, agro-input companies, agro-processors, transport and logistics providers, private sales agents, financial institutions, professional organisations of the agriculture sector and farmers. President of the Chamber of Commerce and Industry will chair the platform. The role of these multi-stakeholder platforms is to provide a forum for the discussion of industry or sector problems and constraints in a holistic manner thereby ensuring that the interests of all stakeholders are represented and protected. District DAM office will primarily assist respective Chamber of Commerce to maintain the functioning of the platform. The forum will sit together once in every quarter. The project will bear the costs for snacks/food and the Chamber will provide venue and logistics support as their investment.

Sub-component 2.2: Post-harvest and processing investments

48. This subcomponent materializes enhanced capacity of DAM and SAAOs; and agreements with buyers to connect with producers. The subcomponent also creates the provision to support promotion of agro-processing enterprises. The major activities revolve around building producers' capacity on post-harvest activities and primary processing to respond to buyers' demand; identifying and supporting potential agro-processing enterprises.
49. *Farmer training on post-harvest and primary processing* - DAM district-level staff and Upazila Marketing Facilitators will be trained on post-harvest and primary processing of selected crops as per the need identified during the buyers' assessment. DAM, thereafter, will provide such training to SAAOs, who in turn will train the farmers with the presence of buyers with whom agreements have been signed. Buyers (individual or institutions) must develop a sense of ownership on the training activities and for this reason, they should be consulted and involved at each level – starting from training module development till providing training to farmers. The selected buyers are expected to contribute financially (may be in kind, by providing time, resource persons, venue etc.) in the training events for farmers – for individual buyers cost-sharing is expected to be at least 10% while for institutional buyers it is 20%.

50. *Promotion of agro-processing enterprises* - The project will provide financial and technical support to 300 agro-processing enterprises (to the individual agripreneurs or producer groups), on average 10 from each Upazila, linked to Farmer Groups. It is envisaged that a particular Farmer Group may or may not propose to start or upgrade an agro-enterprise. Few members from one group or several groups may join together. All these options will remain open to select appropriate candidates to choose for project support. In this regard, the project will design matching grant implementation modalities for investments in promising agro-enterprises in the areas of storage infrastructure, pack-house, post-harvest and processing equipment/machinery. The matching grant amount will be on average BDT 2 million based on the business proposal merit and the grant amount will not exceed 70% of the total investment cost (storage infrastructure and/or machinery) where the rest will be borne by the entrepreneur. Investment may include multi-crop cold storage infrastructure, mechanical dryers for grains and pulse, mechanical sheller for grains, grinding machines for oil seeds, grinding and pellet making machines for animal feeds etc.
51. The grant amount will vary depending on the business type and size. Four multi-crop cold storage facilities (for perishable items such as vegetables and fruits) in four of the promising districts of the project area will be supported, for each of which BDT 10 million would be the matching grant amount. On the other hand, a mechanical sheller for grains may require only about BDT 100,000 as matching grant from the project. Small-scale processing facilities such as drying and roasing of ground nuts, chanachur (local snacks), puffed-rice making etc. which may require less amount of matching grant shall also be considered for support. It is important to note that the business proposals must come from the entrepreneurs (individual or group) - existing (to expand business) or potential to start on what they have already experience and knowledge (only exception for nutrition rich fruits and vegetables processing training participants under Subcomponent 2.3 who will get the training from the project and then can apply for the grants to start business). The project will provide business management skills and also assist in accessing BDSs for the selected entrepreneurs after winning the matching grant. Whatsoever, the total number of matching grants will be 300 and the total amount will be limited to BDT 600 million. In order to ensure that the small holder farmers/entrepreneurs are not excluded from this opportunity, at least 200 grants must be received by those who belong to farmer groups the project has mobilized including women members who will be trained to process micronutrient rich fruits and vegetables (discussed in the following section). The overall implementation will include an application process, for which it is envisioned that applicants will need to submit a business plan. It can be assumed that all applicants may not have the capacity to develop such a business plan and DAM district level and DAE upazila level staff will need to assist them. Technical capacity of both DAM district staff and DAE Upazila staff will be developed accordingly. The final selection for businesses eligible to receive the matching grants will be carried out through an evaluation process at PO level, in line with evaluation criteria prepared in consultation with IFAD.

Sub-Component 2.3: Development of food safety and nutrition measures along the value chain

52. The objective of this subcomponent is to promote nutrition sensitive value chains and products and thereby enhance the consumption of safe and diversified diet for households, women and young children. DAE will act as the lead agency through collaboration with Bangladesh Institute of Research and Training in Applied Nutrition (BIRTAN), DAM and BARI.

Food safety and nutrition training of trainers -Training manual on quality and food safety management systems will be developed and selected resource persons of the agencies

mentioned above will be trained. These resources persons will ultimately roll-out the training of trainers at the district, Upazila and community level.

53. *Training on community based safe food processing* - Following the ToTs received, SAAOs will provide training to farmer group leaders, women farmer groups and relevant agro-processors selected for matching grants on processing of micronutrient rich fruits and vegetables. A special attention shall be paid to reach targeted households with disable family members and vulnerable livelihood options. The training will strengthen capacities on the use of simple hand operated/mechanised equipment to carry out processing and preservation activities (e.g. food products widely consumed in Bangladesh, seed cleaning, blanching, drying, pulping, juice extraction, pickling, chutney and sauce making, bottling, fermentation, fruit toffees, dehydrated nutrient dense vegetable mixes, fruit based yoghurt production) for value addition, income and nutrition.
54. *Training on product and nutrient labelling:* Selected district and Upazila level officials and related food processors will be provided ToTs on product labelling and relevant nutrient information on horticulture products (in Bangla language) to provide knowledge on nutrient composition of foods, make informed food choices and enhance household nutritional behaviour, who in turn will train the farmers.
55. *Behavioural change campaign: Every year a* 2-day behavioural change campaigns on National Food Safety and Agriculture Days will be carried out for enhancing horticulture consumption for women farmers specifically resource poor women to ensure increased demand of micronutrient rich fruits and vegetables by improving shelf life of the horticulture produce and increasing consumption and diversity of micronutrient rich foods in the diet for better nutrition. DAE, being the lead agency, will engage DAM to ensure active participation of large agro-processors (with some of whom DAM already signed agreement under subcomponent 2.1) in this campaign.
56. *Component exit strategy and sustainability* – The subcomponent attempts to address inefficiency of the market system where buyers do not invest time and resources to build the capacity of small holders to enable the latter to supply their produce in an informed way. With the creation of the platform (the farmer groups) private sector buyers will find it cost-effective to reach them in sustainable way where DAM and DAE through increased capacity will assist the private sector to educate them. Once this connection has been developed, private sector is likely to continue the direct relationship with small holders to continuously educate them on their needs and requirement. On the other hand, DAM with its increased capacity to assess market and buyers will take this knowledge forward to carry out the same business model in new areas beyond the project. Agro-enterprises supported through matching grant will create a demand-pull for more products affecting a production growth of the primary commodities in the project areas. Through promotion of nutrition enriched processed agro-products, there will be higher demand of such products and new similar enterprises are likely to join the rally seeing the market opportunity. Multi-stakeholder platform created under this component will open a new window to discuss the problems of all the stakeholders in a single forum, address them through collective actions and advocate to concerned authority to create more conducive business environment.

5.3. Component 3: Climate resilient surface water management

57. *The* activities under component 3 will support households interested in increasing their productivity and diversification to HVCs with water infrastructure that will provide supplemental or full season water access, through a range of investments in water storage and provision to cropland, with associated capacity development for households and groups to manage this water infrastructure. . All activities in this Component are derived from the work of Component 1 and 2 – the location and scale of interventions will

depend on identified and prioritised food production and cash crop production activities and their need for supplemental and full crop season irrigation.

58. **Implementation Strategy** - Considering the experience and capacity of minor irrigation and drainage development, the Bangladesh Agriculture Development Corporation (BADC) is proposed to implement activities under component 3. Most activities and services under Component 3.1 for sustainable water management will be outsourced through competitive bidding following government procurement rules.The BADC has a well-organized irrigation division headed by Chief Engineer (GOB grade II official). Mostly engineering graduates and diploma engineers are engaged in the developmental activities of the division. In the selected districts, Executive Engineers (Grade 5), will be overall responsible for the project interventions. Assistant Engineers (Grade 8), sub Assistant Engineers (Grade 10) and mechanics/technicians will be responsible for implementation of the activities. The activities under Component 3.2 (institutional support/capacity building) will be outsourced through competitive bidding. Hiring of project personnel (driver for procured vehicles, support staff) will be procured from market through outsourcing. Some short term consultancy provisions have been proposed for ensuring sustainable water user groups formation and community participation in O & M in line with the participatory water management rule, environmental aspects in water management.

Sub-component 3.1 - Sustainable surface water management, drainage, conservation and utilization

59. As *the* project activities are not defined at this stage, the following are a range of interventions and potential scale of interventions that have been identified by the mission based on lessons learned in other projects, knowledge of the area and its production constraints, the focus on production and marketing of HVCs.
60. Crop *Protection dyke* - to protect crop land growing HVCs against tidal flood and heavy rainin low land and char areas approximately 45 km of dykes will be made.
61. *Re-excavation and maintenance of canals*- (with dyke plantations) to provide water for irrigation and/or drainage of excess water. To be undertaken for both water conservation as rainwater harvesting for irrigation and drainage facility. This will be implemented in the areas having problems of drainage congestion or tidal flooding causing delays in crop establishment and or irrigation facilities to meet crop demand. Around 300 km of re-excavation will be made in suitable sites. In addition, vegetable and fruit tree cultivation at both sides of dykes will be made, canal water to be used for household consumption. Dykes will be used for sheltering of domestic animals during flood, fishing facilities created, navigation facilities improved and duck culture introduced.
62. *Construction of on-farm water management structures* – (Cattle Crossing/floating bridge etc.). The small scale structure will be built in the water course and canals at farm level as civil works to regulate water. The tidal canals in the project sites divide the homesteads. The structures will be constructed for crossing the canal to wider road and easier transportation of agricultural crop, goods and farm machines. Approximately 275 sites will have provision of such structures.
63. *Community pond excavation with homestead solar irrigation pump sets* - for water storage for productive uses - This will be mostly done in the southwest part where prevalence of salinity is more. Efficient irrigation system management for HVC will be implemented at the homestead level. In addition, solar energy will be used for domestic purpose and homestead vegetables. Drip system to be introduced for increasing irrigation efficiency.
64. *Promotion of with solar irrigation pump sets and drip irrigation*- to maximise water use efficiency - Solar energy in the remote southern districts is getting popular for domestic supply. Where feasible, solar energy (no operating cost, thus cheaper option for energy saving) along with high efficiency drip irrigation system will be installed to support high

value crops in the project sites. Research institutes may be involved in technological support and share experiences in installation of these high efficiency systems. Around 50 pump sets will be installed in suitable sites

65. *Installation of buried pipe system*- for new pump and BADC existing pump (for water lifting devise from surface water sources) for irrigation to increase irrigation water use efficiency. In continuation of similar intervention through previous projects and programs the buried pipe system will be installed. The activities will be undertaken in newer schemes and in some cases it will be extended to old schemes to further increase command area. The system will reduce water loss thus reduce irrigation charge to almost half. Buried pipe irrigation system also saves land and water compared to conventional earthen or constructed channel. A total of about 300 kilometers of buried pipe will be installed including extension of existing schemes.
66. *Provision of hose pipe for irrigation scheme*- for conveyance of water to remote locations to extend the irrigation command area. Hose pipes will be provisioned for conveyance of water to remote locations which will increase irrigation area. It will reduce conveyance loss and conveniently distribute water, where needed. Approximately 12,500 meters of hose pipe will be installed in the selected project sites

(i) *Artisan well installation* - in areas of the confined (pressurized) aquifer zone in the southeast part. In the southeastern part of the proposed project sites artisan aquifers zones are available and piezometric surface is close to the surface. This does not need abstraction through pumping. Tapping water from such shallow depth will be affordable and easy to use for irrigation. The resources will be utilized to irrigate high value crops of commercial importance. Around 100 suitable sites of such dug well will be installed.

Installation of rainwater harvesting structures - considering acute shortages of fresh water during dry season rainwater harvesting will be introduced at the household level both for irrigation and drinking water purpose. During the project implementation around 3,000 will be installed in the project duration.

Sub-component 3.2 - Institutional support for Capacity Building

67. The interventions under this sub-component will address enhancing efficiency in service delivery of agency and relevant stakeholders. This will focus community ownership of the water management infrastructure through (i) Formation, mobilization, training and development of Water User Groups(WUGs), following government participatory water management guideline, (ii) skill development of the agency and water users and (iii) developing institutional facilities for better service delivery (office, transportation and other logistic support).

68. The activities proposed are based on the assessment of the existing facilities/ infrastructures in the proposed project sites. There are 18 offices of BADC in the proposed project areas where some renovation, construction have been proposed. Activities under the sub-component are:

- Renovation of office/training center in the project sites (five) for better office accommodation and pertaining training to the engineers, technicians, pump operators/managers, water user groups (farmers) etc.
- Overseas training for skill enhancement of relevant engineers and planners in efficient irrigation and drainage system design

- Seminar and workshop to monitoring, evaluation, review and consultations for improved project performance
- Printing and publication of reports, project documentations and training manuals

69. **Component Exit Strategy and Sustainability**: The proposed project includes formation of WUGs who will be the primary beneficiaries of this component. The capacity of the groups will be enhanced through training so that after completion of the project, the groups will have the necessary knowledge and skills to be responsible for O&M of the interventions of the water management infrastructures. The project plans to build the capacities of BADC and their engineers, which after this initiative will be able to better contribute to the development of the South and potentially cascade their knowledge and support other areas of Bangladesh. In addition, the work foreseen between BADC personnel and the WUGs and communities at large will create strong linkages which will support any future project of this kind

5.4. Project management

70. **Inter-department coordination and Project Office**. Mechanism and efficiency of inter-department coordination between DAE, DAM, BADC and BARI were further reviewed by the mission and an assessment of institutional capacities[54] was undertaken in this regard based on the project background paper No 1. The mission concluded that the four agencies are under the same MoA and they had collaborated in management and coordination of other projects. Inter-department coordination is maintained as part of the Ministry's organizational activities, as well as under the management framework of GAFSP-IAPP (2010 – 2016), that involved DAE, BADC, BARI and other departments. Ongoing World Bank and IFAD-assisted NATP-II also involves inter-department coordination.
71. **Project Steering Committee (PSC)**. The Project will be implemented under the overall direction of a Project Steering Committee (PSC) chaired by the Secretary of MoA and encompassing representatives from the ministries such as ERD, line departments that are related to the Project. The PSC will evaluate and approve annual work plans, and provides directives on strategic aspects of the implementation management.
72. **A Project Implementation Committee (PIC)** will be formed to provide technical guidance and bring in synergy with stakeholders and partners other than the MoA. The committee will be chaired by the Additional Secretary (PPC) and it will be composed of Project Director, Component Directorsand Project Coordinator of BARI, one PO from the IFAD-assisted projects in the Ministry of Agriculture, representatives of the MOA, Planning Commission, ERD, IMED, selected leading private firms and trade associations, and IFAD and FAO country offices. The PIC will play the role of technical exchange platform and synergy building among different development projects, where good practices and lessons learnt can be drawn to support the SACP implementation at operational level, and shared for cross-benefits.
73. **The project structure of operational management and coordination** will be established along the DAE vertical structure from central to the Union, with DAE, DAM, BADC, and BARI participation at applicable levels where available, and managerial and technical officers appointed from respective agencies. The project will fund Operational Support Teams (OST) at both central and district levels to support the Project Office and District Coordination Units (DCUs). DAE SAAOs and Marketing facilitators engaged by

[54] The assessment will be attached to the Final Design Report as working document.

DAM will be the key contacts in reaching the farmer groups, with help of lead farmers selected among farmer groups.

74. **<u>At central level</u>, the Project Office** proposed for SACP will pay special attention to the leading functions of DAE and coordination among implementing agencies. The Project Office will be headed by a Project Director appointed from DAE by MoA and it will include Component Coordinators from principal implementing agencies namely DAE, DAM and BADC, and from BARI, seconded by government-deputed officers will be supported by an operational support team of externally recruited experts whose positions are funded by the Project.

75. The PD's responsibilities remain unchanged.
    a) Ensure that the project strategy is applied through the implementation of all activities,
    b) Coordinate the programming of planned activities under the Project,
    c) Assume the inter-project coordination with the ongoing IFAD-assisted projects,
    d) Prepare and consolidate AWPBs,
    e) Coordinate the timely and proper implementation of approved AWPBs by each of the implementing line agencies,
    f) Ensure sound financial management of the project and consolidate project-related budgets, statements of expenditure and progress reports,
    g) Ensure timely project M&E and progress reporting,
    h) Preparing withdrawal applications,
    i) Ensure the undertaking of the annual auditing of the Project, and
    j) Other mandates and tasks that the Government and IFAD agree to assign

76. **PO staffing**. The PO will be staffed both with government-seconded officers and by externally recruited Operational Support Team.
77. *Government-seconded officers* will fill the following positions: Project Director, three Component Directors respectively from DAE, DAM and BADC, one Project Coordinator from BARI, one senior M&E officer and one Administrative Officer.
78. *An Operational Support Team (OST)* will be included in the PO and consultant specialists will be recruited through external and open process. The OST will be composed of one Project Management Specialist, one Financial Management Specialist, one Procurement Specialist and one Procurement Assistant, one M&E and KM Specialist, five Accountants (one supporting the PD, and four supporting respective implementing agencies), three Technical Component Coordinators, one Gender Development and Safeguard/Governance Specialist, and other support staff where required.
79. **<u>At district level</u>, District Coordination Unit (DCU)** will be established as technical hub and composed of one lead technical officer from each of the District DAE, DAM, BARI and BADC, and other necessary staff required in all the project districts. The DCU will be embedded in the respective District DAE office. Under the over direction of the Project Director at the Project Office, the DCU will be led by the Deputy Director of District DAE and it will be responsible for coordination of the project activities implemented by the district project line agencies and/or other contracted service providers, ensuring operational coordination through the structure of upazila and union offices to the grassroots level, ensure the timely and operational functions in the areas of project financial management, M&E and KM, procurement support and follow-ups, at its own level and the lower levels. It will collect physical and financial periodic progress reports

from the involved implementing agencies, maintain district consolidate records, prepare reports and deliver them to the Project Office. Other responsibilities include:

a) Overseeing work of executing agencies and service providers and the selection of the target groups that will participate in project activities;

b) Facilitating district and lower levels' participatory planning activities to determine which activities will be implemented in which communities;

c) Reviewing and recommending to the PO the community-level implementation work plans prepared by the line agencies;

d) Coordinating the involvement of district technical agencies and their grassroots-level extension, NGOs, private sector players, as well as farmers' groups; and

e) facilitating liaison with target communities, assisting with the collection of M&E data, and documentation of project activities.

80. **Upazila and Union Offices' Participation**. DAE offices at Upazila and Union will participate in extending the operational coordination from the DCU to the target groups. Upazila Agricultural Officer and Union Sub-Assistant Agricultural Officers (SAAOs) will be the focal persons for the field implementation. Similarly, BADC's upazila Sub-Assistant Engineers will participate in field implementation.
81. *DAM* will engage through outsourcing Marketing Facilitators at upazila level to work with the farmer groups in the unions.
82. *In each project union,* three lead farmers will be selected from the selected farmer groups and they will be engaged on a basis of daily basis remuneration in accordance with actual day (s) occurred, to support the field work of upazila officers of DAE, BADC and DAM marketing facilitators.
83. Farmer Producer and Marketing Groups are the entry point for SACP implementation. The project strategy and activities are geared towards ensuring that, by the end of the Project, farmer groups grow into more professional players in targeted value chains, and some of them graduate into production and marketing cooperatives. DAE SAAOs, BADC Sub-Assistant Engineers and DAM-engaged Marketing Facilitators will work to reach the target farmers and their groups with assistance from the engaged lead farmers, mainly in facilitating the identification of their priority needs and connecting them to the support by the Project, delivering project messages, supporting farmers groups and communities to set up better organisations and structures in value-added production enhancement and post-harvest management, collecting performance data for transmission to the DCU through DAE Upazila and Union offices, and providing feedbacks on performance of service providers.
84. **Implementation responsibilities**. Component-wise lead implementation agencies are as follows:
    (1) DAE for component 1,
    (2) DAM for component 2,
    (3) BADC for component 3, and
    (4) BARI will support the three implementing agencies with researches linked to areas of interventions identified under the three technical components.

85. Options will be explored to link the benefit M&E system with the project management M&E system (which will be in line with IFAD's revised results and impact management system (RIMS)). Such linkage will avoid duplication of data collection and improve the possibility of attribution of results to project activities

6. Planning, Monitoring and Evaluation

6.1. Annual Planning Process

86. The SACP will apply a results-based management approach which establishes a solid linkage between planning (including resource allocation), implementation, monitoring and evaluation. This approach will ensure all processes and activities of the project are in line with the project goal, objectives and expected results.
87. The project will be implemented in 11 districts covering 30 upazilas with activities implemented by the Lead Agency with the existing management and coordination structure at DAE central level and Coordination Unit (CU) at district level. In addition, activities will be directed at multiple stakeholders, including landless, marginal, small farmers as well as other actors along the value chain. As the project will involve with several implementing partners including DAE, DAM, BADC, and BARI, this complexity affects project management and must be dealt with in an effective way to reduce bureaucracy and unduly lengthy planning and reporting processes.

6.2. Annual Work Plan and Budget (AWPB)

88. The project AWPB will be a basis for implementation and should clearly describe the strategic direction of the project for the coming years by resenting a budget estimate, the expected results under each component and how these results would be achieved with risk analysis if any. The preparation of AWPBs will be jointly conducted by the project management in consultation with local implementing partners and beneficiaries where relevant. A participatory annual planning process with stakeholders will be set up to ensure the bottom-up feedback on community needs, priorities, contextual opportunities and limitation.
89. In preparing the first AWPB, the Project Management should be aware of available budget and the amount of Initial Deposit released in order to prioritize critical investments identified. It would be necessary to anticipate the following project fiscal year's budget to avoid shortage of funds available for the succeeding year. Counterpart matching funds should be secured and accounted in the AWPB.
90. In preparing the AWPB, narrative presentation should be concise and precise; spreadsheet tables and schemas should be used where needed to illustrate targets, achievements, costs and financing.
91. An AWPB primary consists of seven parts (chapters), which first update the past achievements with focus on the previous year's, then address the projections for the upcoming fiscal year:

(b) Update on past achievements

Narrative introduction

Summary of physical and financial Achievements (N/A for PY1 AWPB)

Projections for the upcoming fiscal year:

Summarized presentation by components

Detailed presentation by components

Cost and financing

92. The AWPB along with procurement plan will be drawn up by the Project Office with the support of M&E and Finance units and technical staff, in consultation with DCUs,

implementing partners and stakeholders including beneficiaries (e.g. farmer groups and women) where relevant. The PO will prepare draft consolidated AWPB for each Fiscal Year, based upon district level plans and AWPBs prepared by each implementing agency for their respective section of the Project implementation. Each draft AWPB will include, among other things, a detailed description of planned Project activities for the relevant Project Year, the sources and uses of funds there for and updated the procurement plan.

93. The PO will submit a draft consolidated AWPB to the PSC for its approval no later than 90 days before the beginning of the relevant Fiscal Year. Once approved, the PO will submit the draft AWPB to IFAD for comments and approval, no later than 60 days before the beginning of the relevant Fiscal Year.
94. The PD, DCU, operational support team and related implementing agencies will adopt the AWPBs substantially in the form approved by IFAD. The PO will provide copies thereof to IFAD, prior to the commencement of the relevant Project Year. If required by IFAD, the PO will propose adjustments in the AWPB with the approval of the PSC. Such adjustments will be effective upon approval by the IFAD. The AWPB will be informed by an assessment of current implementation progress and will describe the strategic direction of the project for the coming year along with results expected (targets) under each component and how those results will be achieved. This will be complemented by a resource plan, budget and risk analysis for each result. The AWPB will also include plans for training and technical assistance, M&E and procurement for the year in question

6.3. Baseline, Mid-Term and Project Completion Studies

95. *Impact* will be assessed on the basis of methodologically sound baseline, mid-term and completion surveys which use the same approach so as to allow a meaningful before, during implementation at completion in order to carry out a comparison analysis. These surveys will include a comparison group so a difference-in-differences analysis can be conducted at the end of the project to strengthen the assessment of effectiveness and impact. The surveys will elicit data at the impact and outcome level according to the project logical framework and RIMS indicators as well as socio-demographic data and other relevant information for targeting, planning and evaluation. It is essential that a baseline study will be carried out immediately upon start-up in order to inform overall project planning, ensure benchmarks and realistic targets are set for outcomes and impact. The baseline study will include a household survey to assess socio-economic level of beneficiaries and group beneficiaries in different sub-target groups. It will also assess the knowledge, attitude and behaviour of farmers. The Mid-term and impact evaluation will follow the same methodology as the baseline study to allow meaningful comparison, although the scope of the impact evaluation may be broadened to cover other aspects of project relevance, effectiveness, efficiency, impact and sustainability to adequately inform the project's completion report. A midterm review will be conducted in year three or half way of project implementation. The review will assess the relevance (i.e. internal and external validity of project design), effectiveness (progress towards targets), and efficiency (funds disbursed vis-à-vis achievements) of the project. Any suggested changes in design, implementation approach, cost or targets should be assessed and endorsed by IFAD.

7. Financial Management

7.1. Book of Accounts

96. The accounting policies and procedures of the project will be governed by International Accounting Standards and the existing GoB system outlined in the Project Accounting Manual of the Ministry of Finance. The PO will have the primary responsibility to maintain

an adequate FM system across all levels of implementation of the project and to provide accurate and timely financial information to the Government and IFAD.

97. The project will procure and adopt an accounting system package conforming international standards during start-up. In addition, a simplified FM system will be implemented at the District Coordination Units to ensure proper reporting to each of the Implementing Agencies. The project will guarantee the availability of resources to conduct periodic training on the use of the accounting software to strengthen the capacity at the district level.

98. As there has been positive results from the use on an accounting software in the country programme which has been recalibrated to meet the accounting and reporting requirement for both government and IFAD, MoA should consider using the same software for SACP, which would provide the Project better value for money

7.2. Designated Account/Project Account

99. There will be one Designated Account at the Central Bank of Bangladesh under SAFE arrangements to receive the funds of the financing. The DA will be managed by the PD, and transfers to the Implementing Agencies will be made according to consolidated financial information and approved AWPBs. The project will open one Project Account in local currency to receive transfers from the Designated Account at the PO level. Also, four project sub-accounts in local currency will be opened for the corresponding implementing agencies, namely DAE, DAM, BADC and BARI to receive transfers from the Designated Account. Three accounts will be opened in every District Coordination Unit (one per each Implementing Agency); participating BARI stations will also open and maintain their accounts where applicable.

7.3. Funds Flow/Disbursement

100. The PO will be responsible for transferring project funds to the operating accounts of the Implementing Agencies. These transfers will be treated as advances at the PD, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated

7.4. Statement of Expenditure (SOE)

will be updated once the financing agreement and letter to borrowers (LTB) issued to the Goverment

7.5. Disbursement Procedures

101. The PO will be responsible for transferring project funds to the operating accounts of the Implementing Agencies. These transfers will be treated as advances at the PD, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated.

102. A start-up advance may be provided once the financing agreement has become effective, to facilitate implementation readiness activity, pending satisfaction of

the disbursement conditions specified in the financing agreement. The ceiling of the start-up will be agreed upon at negotiations based on a realistic plan.

103. Transfers to entities implementing SACP activities will be treated as advances, with monthly reporting on the use of funds, and these accounts will appear as unreconciled items on the financial statements until they have been accounted for and liquidated

7.6. Withdrawal Application

will be updated once the financing agreement and letter to borrowers (LTB) issued to the Goverment

7.7. Staffing and Cost Centre

will be updated once the financing agreement and letter to borrowers (LTB) issued to the Goverment

7.8. Capacity Development

will be updated once the financing agreement and letter to borrowers (LTB) issued to the Goverment

7.9. Assets Management

will be updated once the financing agreement and letter to borrowers (LTB) issued to the Goverment

7.10. Reporting

104. The PO will be responsible of consolidating the financial information from the Implementing Agencies and to prepare semi-annual and annual (audited) Financial Reports (FRs) for all relevant parties. The Implementing Agencies (DAE, BADC, DAM and BARI) will be responsible of consolidating the financial information from the District Coordination Units (DCUs). The FRs will be consistent with International Accounting Standards and the Project's Finance Manual. Semi-annual Financial Reports with accurate and updated financial information will be prepared by the PO for submission to IFAD within 45 days from the end of each semester.

105. Financial Reports will be produced directly from the automated project accounting system (with the capability to report by component and by category of expenditure), and not from any other stand-alone manual or electronic system. The PO and the Implementing Agencies will need to have the capacity to record GoB contributions, as well as in-kind contributions of private companies and beneficiaries, if necessary.

7.11. Internal Control

106. SACP will be required to establish adequate internal controls and procedures in the PIM and in the Financial Manual to guarantee: (a) operations are being conducted effectively and efficiently; (b) financial and operational reporting is reliable; (c) applicable laws and regulations are being complied with, and (d) assets and records are safeguarded.

107. At a minimum, the procedures should include the following measures: (a) Reliable personnel with clear responsibilities i.e. segregation of duties; (b) Adequate financial records management system with complete audit trail; (c) Physical safeguard, including use of safe, locks, guards, limited access, and access by authorized persons to provide security for program assets; (d) Independent check, with procedures made subject to random independent reviews.

7.12. Internal Audit

108. Internal auditing will be carried out by private firm twice in the life of the project. The preparation of the audit plan will take into account the different levels and agencies involved in the implementation.

7.13. External Audit

109. The Foreign Aided Projects Audit Directorate (FAPAD) of the Office of the Comptroller & Auditor General (OC&CAG) of Bangladesh will conduct an audit of the project's annual financial statements within six months of the end of the fiscal year. The audit will be carried out on a yearly basis and in compliance with International Standards on Auditing and the IFAD Guidelines on Project Audits. According to the performance of the project and in addition to the FAPAD audit, it may be possible that IFAD requests the project to be audited by an external audit firm.

8. Procurement

8.1. Staffing and Capacity Development

110. Procurement will be conducted by the Project Office and implementing agencies (DAE, DAM, BARI and BADC) according to the level of authority structured for the project. A detailed list of common items will be prepared for procurement through Project Office.

111. A recent assessment done by World Bank for NATP II project revealed that the implementing agencies have the experience in the procurement function; however their human resources capacity is assessed as not sufficient to handle the project procurement activities. To minimize the associated risk, procurement specialists will be hired in the principal cost centers of the project

8.2. Procurement Methods

112. Public Procurement Act 2006 (PPA) and the Public Procurement Rules 2008 (PPR) are the two legal documents that deal with public procurement in Bangladesh. The PPA and PPR disseminate the purpose and principles of Bangladesh's public procurement and procedural requirements. It has contained good international practices, including: (a) nondiscriminatory selection of bidders; (b) wide advertising of procurement opportunities; (c) public opening of bids in a single location; (d) disclosure of all contract awards above a specified threshold on the CPTU's website; (e) clear accountability for delegation and decision making; (f) annual post-procurement audit (review); (g) sanctions for fraudulent and corrupt practices; and (h) review mechanism for handling bidders' protests.

113. The PPA and PPR allow for advances in technology by providing for electronic processing in public procurement in Bangladesh. The system for doing this is the E-Government Procurement (e-GP) system. E-GP is a lone web portal from where, and through which, Procuring Agencies and Procuring Entities, can perform their

procurement related activities using a dedicated secured web based dashboard. e-GP is hosted at the CPTU Data Centre, and it's use is governed by the E-Government Procurement (e-GP) Guidelines.

114. Procurement of goods, works and services of SACP shall be carried out in accordance with the provisions of the Public Procurement Act 2006 (PPA) and the Public Procurement Rules 2008 (PPR), to the extent that are consistent with IFAD Procurement Guidelines. If there is any conflict between the government and IFAD procedures, the provisions identified in IFAD Project Procurement Guidelines and IFAD Project Procurement Handbook as referenced by the Financing Agreement shall prevail.

115. All National Competitive Bidding (NCB) procurement under SACP will be done through the electronic government procurement (e-GP).

116. International Competitive Bidding (ICB) shall be the mandatory procurement method for activities estimated to cost: (i) Goods estimated to cost above USD 200,000 or equivalent; (ii) Civil works estimated to cost above USD 1,000,000.00 or equivalent; and (iii) Services estimated to cost above USD 100,000 or equivalent.

8.3. Procurement of Vehicles and Equipment

117. Vehicle and motorcycles for the projects will most likely to procure through Direct Procurement from Government owned enterprises. The option exists for procurement from other suppliers through the National Open Tender Method (NOTM). Purchase of computers, air conditioners and photocopiers, machineries for post-harvest management and processing would primarily from local suppliers by NOTM – although there also exists the option of Request for Quotations (RFQ) for standard specification items in lots specified in Schedule II of PPR. Office furniture may be procured by either RFQ or NOTM. Attention is required to see that requirements are bulked up wherever practical.

118. Vehicle operating costs would be procured using RFQ and direct procurement. Procurement for office running expenses would follow the same procedure. The procuring entity may undertake direct cash purchase of low value goods and urgent essential services such as maintenance, repairs transportation etc. in a lots of under BDT 25,000.

8.4. Procurement of studies, survey, and other specialized services

119. *Procurement of Studies:* It is envisaged that most of the research work will be carried out by implementing agencies and M&E. There will also be requirement of specialized agencies to conduct studies on Demand Driven and Market Oriented Research. The procurement of consultant to carry out these studies would follow the Request for Expression of Interest method. For selection of successful tenderers, either Quality and Cost Base Selection (QBCS) or Fixed Budget Selection (FSB) or Lest Cost Selection (LCS) negotiation method will be used.

120. *Procurement of Training:* Training organized by Project Office or the Implementing Agencies could be procured through RFQ method if there is small number of qualified organizations. Single Source Selection method may be used– where there is only a single qualified supplier, or the supplier is a government agency. However for many courses, the Project Office or respective implementing agency will organize each element of the training, and individual trainers may be hired via Selection of Individual

Consultant (SIC), with training allowances, food and miscellaneous costs paid for via direct procurement or RFQ.

8.5. Recruitment of Contracted Position

121. There will be need for hiring new staff for SACP, some project staff including the Project Director, four Component Director from respective implementing agencies (DAE, DAM, BADC & BARI) and one Administrative Officer would be seconded from Government. Operational Support Team (OST) will be composed of Project Management, Financial Management, Procurement, M&E and KM, Procurement, Gender, Technical Component Coordinators, and other required staff would be recruited by PO on a contract basis. For such recruitment, a recruitment committee would form headed by the PO with representative of implementing agencies. Candidate would be short listed according to ToR which specifies the task to be carried out and required qualifications, experience and age limits if any. Short listed candidate would then be interviewed. For senior positions (PD, FM, M&E, Procurement and Gender) the CVs of the top three candidates for each position would be sent to IFAD for approval prior to their appointment. Draft ToR would be included in the draft Project Implementation Manual.

122. Some senior and specialized advisory posts would be filled by the consultants. The preferred method is to recruit individual consultant using Selection of Individual Consultants (SIC) method. The process to be followed will be the same as prescribed for senior positions in above paragraph.

8.6. Working with private sector, NGOs and other service providers

123. The project activities contains a number of cost sharing components by Private Sector and Beneficiaries. The costs structure will be defined in Memorandum of Understanding with respective organizations. Procurement procedures by the private sector will be defined in memorandum. For beneficiaries it will follow the guidelines for Matching Grant Fund.

8.7. Procurement of works

124. All infrastructural components, would be implemented by contractors selected through NOTM. There is also the option for RFQ for low value simple works, provided that the estimated value of such works shall not exceed the threshold specified in Schedule II of PPR.

8.8. Review of Procurement Decisions

125. As an added risk mitigation measure, IFAD would undertake prior and post review of procurement decisions and detail of these would be referenced in the Letter to the Borrower/Recipient.

8.9. Thresholds for prior review from the IFAD

126. For consistency with the IFAD Procurement Guidelines, the following shall be subject to prior review by IFAD for award of goods and civil works estimated to cost above USD 200,000 equivalent and service estimated to cost USD 100,00 equivalent.

127. The aforementioned threshold may be modified from time to time during the project implementation period.

128. To conduct subsequent review or procurement analysis, it is recommended to maintain a procurement register by Project Office and other

implementing agencies, which should include summary and explanation of the relative procurement process, in English

8.10. Ex post review

129. To ensure that the procurement process is carried out in accordance with agreed procurement guidelines, IFAD will review arrangements for procurement of goods, works and services. The extent of this review process will be contained in the Letter to the Borrower/Recipient.

8.11. Register of Contracts

130. To conduct subsequent review or procurement analysis, it is recommended to maintain a procurement register by Project Office and other implementing agencies, which should include summary and explanation of the relative procurement process, in English

9. Gender and Social Dimensions *(GESI integration strategy and action plan will be drafted by PD)*

9.1. Definition and Objectives

9.2. GESI Integration Strategy in Climate Change Adaption

9.3. Main Elements of Project's GESI Action Plan

10. Progress Reporting and Deadline *(Will be further developed based on the Financing Agreement and LTB)*

11. Collaboration, Knowledge Management and Dissemination

11.1. Knowledge Management

131. The core relevance of the M&E system is in the use of the information for planning and decision-making as well as accountability. An integrated knowledge management and communication (KMC) strategy will be developed in line with IFAD policy on KM and built on three core pillars of knowledge management: people, process and technology. It will include information management, monitoring and evaluation, innovation and experimentation, internal and external communication and learning. The previously mentioned MIS and M&E system will be a core part of this strategy and will be sources of information from which key lessons need to be extracted and appropriately disseminated.

132. *Knowledge tools and platform.* Similar to the overall and annual M&E plans, the project will develop KM plans and incorporate KM into the M&E plans. The primary aspect will be internal knowledge management but given the proliferation of interventions related to development of the high value crops (HVC) production and marketing in Bangladesh. Progress reports will include sections on lessons learned, challenges and best practices and these must be captured by project management, analysed across the project and communicated for improved implementation. Some vehicles for this communication will be quarterly review meetings with implementing partners, planning workshops, and newsletters. Through this process attention will be put on ensuring that lessons are used in decision-making.

133. The SACP logical framework will be used as roadmap for annual planning, monitoring and evaluation. In line with IFAD's revised Results and Impact Management System (RIMS), expected results will be measured at two levels; outputs

and outcomes on a semi and annual basis. Core indicators will be integrated in the logical framework from the project design and will be monitored through its participatory M&E system. The project logframe will be linked to the economic and financial analysis

11.2. Project web Site Purpose, Development and Operations

12. Governance and Anti Corruption Measures (*To be developed by PD*)

12.1. Guiding Principles

12.2. Anti-Corruption Action Plan

13. Modifications of PIM Procedures

134. The PIM is to be read in conjunction with the main Project Design Report and its working/ background papers. Any changes if required during the process of implementation, IFAD will be requested for concurrence on the changes.

14. Annexes

Appendix 14: Compliance with IFAD policies

1. **IFAD policies**. The SACP is well in line the overarching goal of the IFAD Strategic Framework 2016 – 2025, aligning its investments with transforming the agricultural sector towards higher, sustainable and climate-smart productivity, profitability, commercialization, connecting the smallholder farmer and rural households to market opportunities and improved support services to generate more income for improved livelihood, food and nutrition security, and therefore better resilience.

2. SACP also falls into the intervention priorities of the specific country strategy (COSOP) 2012 – 2018 for Bangladesh. The design mission confirmed the essential elements of the concept note's logical framework and refined it to better detail sub-components and activities:

- *Increase rural people's productive capacities*: Promoting access to natural resources, agricultural technologies and productive services that lead to enhanced agricultural production for improved household food security, improved nutrition and diversified income sources;
- *Increase rural people's benefits from market participation*: Increasing engagement of rural households in diversified agro-business and employment opportunities, rural producers' organizations, rural infrastructure, that provide them appropriate support services, linkages to markets for improving their livelihoods;
- *Adaption of rural livelihoods to climate change and the scaling up of successful approaches*: developing and adapting enhanced climate-resilience approaches and promoting the best practices through effective knowledge management
- *Gender*: to ensure that project activities reach a significant number of poor rural women, men and youth and improve their rural livelihoods.

3. The SACP is also in line with the national strategies in poverty alleviation, agriculture and rural development and climate change adaptation, as it is based on development-driven support to the vulnerable target groups, blending a number of multi-benefit intervention in enhanced production, post-harvest management with focus on processing and marketing, climate-smart surface water management and irrigation efficiency to help improve the access to opportunities for the rural smallholders. The Project responds to the Government's Southern Master Plan by channelling its investments fostering the responsiveness and competitiveness of rural smallholders in horticulture HVCs in Southern Bangladesh.

4. **SECAP**[55]. The environmental and social risk of the project falls under the category B in view of little or negligible adverse impact potential on natural and social environment, while it also falls under category 'High' regarding climate change risks. By committing to the below-mentioned approaches and activities, the project will significantly be reducing the perceived risks and expected to have a great contribution towards enhancing resilience and reducing poverty of smallholders in the target areas.

5. The SACP is envisaged to promote improved agronomic practices, knowledge base, research support and extension for high value crops, without having to affect natural environment. In order for extending better extension services and research facilities, a few minor construction-related activities will be undertaken. Although, little environmental hazard may be anticipated in relation to such unavoidable constructions, due to unavoidable overlap of project areas and environmentally critical areas (ECA), efforts need to be made to reduce environmental costs and meeting national conservation related regulatory requirements.

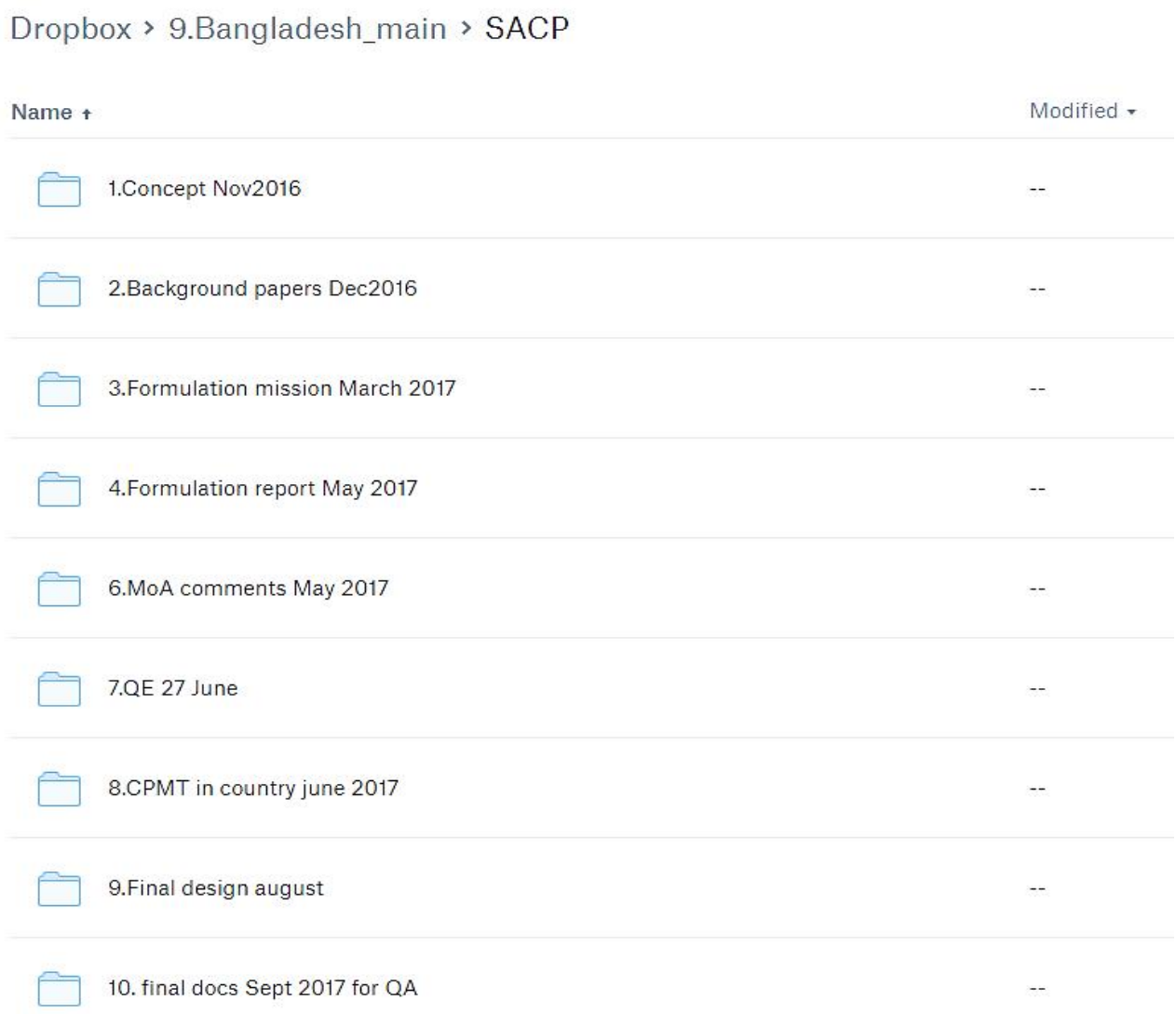
[55] Also see the working paper on detailed SECAP Review Note.

6. The SACP focuses on building Bangladesh's coastal smallholders' capacities on high value crop production and marketing, thereby enhancing smallholder farmers' resilience to challenges likely to be posed by climate change. The project will deliver enhanced resilience by responding to production challenges in terms of high temperature and higher levels of moisture stress, increased rainfall and runoff, higher susceptibility to floods, high soil and surface water salinity, higher wave interaction due to tidal regime, etc. While the activities that are oriented towards addressing the above climate induced phenomena, efforts will be considered to ensure environmental conservation in the forms of integrated pest management, enhanced use of composts including vermin compost, conjunctive use of surface and groundwater for irrigation, increase in irrigation efficiency and solid waste management in premium marketing centres. Emphasis will be given on water harvesting, which will also address lack of adequate source of potable drinking water Utmost efforts will be made to eliminate the use of environmental resources from ecologically critical areas while the value chains will be established taking into consideration locally suited high value niche (crop) products, that too involving as many women as possible. The marketing centres will be designed and built on elevated plinths in a bid to avoid inundation from floods and occasional cyclonic storm surges.

7. Recognizing the potential increase in intensity of climate change induced adverse impacts, the project will emphasize on building farmers' capacity to adopt the above mentioned adaptive measures, while they will also be given awareness training on reducing risks that are related to climate change. To further build local capacity to continue high value crop production by defying climate change, efforts will be made to strengthen research on crop varieties that are tolerant to climate change induced hazards.

Appendix 15: Contents of the Project Life File

Public Electronic library for this design is established at:
https://www.dropbox.com/sh/jkixki2ynb0t86l/AACHlLnrlRcF8GBlr_7kY_78a?dl=0



Working papers – August 2017:

1. Component 1: Enhanced Production of HVC and Adoption of Technology
2. Component 2: Marketing and Processing of HVCs
3. Component 3: Climate Resilient Surface Water Management
4. Social Environmental and Climate Assessment Procedures (SECAP) Review Note

Background papers – November 2016:

1. Lessons from past and on-going projects led by Ministry of Agriculture
2. Nutrition and Food Safety

3. Commercialisation of high value crops

4. Small scale infrastructure interventions implemented under the Ministry of Agriculture in the districts of the south

5. Applied agricultural research and spread of new technologies/practices

6. Capacity for extension service provision for high value crops

7. Mechanisation in southern Bangladesh

8. Surface water irrigation in Southern Bangladesh

[i] Ministry of Foreign Affairs of Denmark/DANIDA Evaluation of the Farmer Field School Approach in the Agriculture Sector Programme Support Phase II, Bangladesh

[ii] For more information on RuralInvest, see: http://www.fao.org/support-to-investment/knowledge-resources/learning-tools/ruralinvest/en/