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Investing in rural people

President's Memorandum

Proposed Additional Financing to the People's Republic of Bangladesh for the Char Development and Settlement Project – Phase IV

Project ID: 1100001537

Note to Executive Board representatives

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For: Approval

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Abbreviations and acronyms

BDP2100	Bangladesh Delta Plan 2100
BWDB	Bangladesh Water Development Board
CDSP	Char Development and Settlement Project
EIRR	economic internal rate of return
ESIA	Environmental and Social Impact Assessment
M&E	monitoring and evaluation
RAF	Resettlement Action Framework
RAP	Resettlement Action Plan
SECAP	Social, Environmental and Climate Assessment Procedures

Financing summary

Initiating institution:	IFAD
Borrower:	People's Republic of Bangladesh
Executing agency:	Bangladesh Water Development Board (Ministry of Water Resources)
Total project cost:	US\$144.0 million
Amount of original IFAD financing:	Loan of SDR 30.86 million (equivalent to approximately US\$47.3 million)
Terms of original IFAD financing:	Highly concessional
Amount of additional IFAD financing:	US\$20.6 million
Terms of additional IFAD financing:	67 per cent highly concessional/33 per cent blend
Cofinancier(s):	The Netherlands NGO partner organizations
Amount of cofinancing:	The Netherlands: original project US\$20.6 million The Netherlands: additional financing EUR 5.0 million NGO partner organizations: US\$8.6 million
Terms of cofinancing:	Grant
Contribution of borrower:	US\$40.3 million
Contribution of beneficiaries:	US\$0.9 million
Appraising institution:	IFAD
Cooperating institution:	Directly supervised by IFAD

Recommendation for approval

The Executive Board is invited to approve the recommendation for the proposed additional financing for the Char Development and Settlement Project – Phase IV, as contained in paragraph 48.

Proposed Additional Financing to the People’s Republic of Bangladesh for the Char Development and Settlement Project – Phase IV

I. Background and project description

A. Background

1. The Char Development and Settlement Project – Phase IV (CDSP-IV) was approved by the Executive Board on 22 April 2010. The financing agreement was signed and became effective on 9 May 2011. The current project completion date is 31 March 2019, and the loan closing date is 30 September 2019. The total project cost is US\$89.2 million, financed by a highly concessional IFAD loan of US\$47.3 million, a Netherlands grant of US\$20.6 million, counterpart funding of US\$15.6 million from the Government of Bangladesh, a contribution by participating NGOs of US\$4.9 million and beneficiaries’ contribution of US\$0.8 million. To date, 97 per cent of the IFAD loan and 90 per cent of the grant have been disbursed.
2. In June 2018, the Government of Bangladesh requested additional financing (AF) of US\$20.6 million from IFAD for the project, along with a three-year extension to the project completion date. The proposed additional financing would be provided 67 per cent on highly concessional terms and 33 per cent on blend terms, from the 2019-2021 performance-based allocation system allocation for Bangladesh.
3. The objective of the proposed additional financing is to scale up the project’s activities, increase its outreach, spread its innovations and expand its results.

B. Original project description

4. The overall goal of the various phases of the CDSP is to develop the accreted land masses (chars) in Bangladesh so that they become suitable for human habitation, done by protecting the land from salinity, stabilizing it through afforestation and creating conditions conducive to livelihood development. Government prioritizes these lands for those rural people who are ultra-poor and destitute. The CDSP has been helping people to settle in these areas and overcome difficulties that range from the lack of basic infrastructure to exploitation by powerful interest groups attracted by the fertility of the soils.
5. The goal of CDSP-IV is to reduce poverty and hunger for poor people living on newly accreted coastal chars, through improved and secure livelihoods. The project objective is to improve and secure livelihoods in agriculture, provide legal land titles, and develop climate-resilient infrastructure for 28,000 poor and destitute households. CDSP-IV consists of five components: (i) protection from climate change; (ii) internal infrastructure; (iii) land settlement and titling; (iv) livelihood support; and (v) technical assistance and management support.
6. Performance in implementation of CDSP-IV has been transformative. The annual impact survey undertaken in 2018 found that the project has transformed the targeted chars – from being isolated and unproductive areas with a desperately poor population – into a productive and prosperous part of the district economy.

The 2018 supervision mission reported that the project had fully achieved its goal and objectives, met its physical and output targets, and exceeded its outreach targets.

7. The project has significantly contributed to reducing the poverty and vulnerability of 29,000 rural households (185,824 people) living on newly accreted coastal chars. Verified monitoring and evaluation (M&E) data indicate that average annual household incomes increased by 400 per cent between 2011 and 2017, and the average value of household assets (including productive assets) increased by over 700 per cent.
8. Among the important results are that: (i) cropping intensity has increased, from 104 per cent to 130 per cent; (ii) paddy yields have doubled to 3.8 tons/hectare, and production per household has increased by 66 per cent; (iii) field vegetables are now produced by 14 per cent of households, and homestead vegetables by 98 per cent, with substantial nutrition benefits; (iv) almost all households now keep poultry, with egg production and sales incomes increasing by 350 per cent; (v) milk production has more than doubled, with 70 per cent more milk being consumed at home; (vi) the proportion of households cultivating fish has increased from 51 per cent to 98 per cent, yields have increased by over 500 per cent, consumption has almost doubled, and annual sales per household have risen by 400 per cent; (vii) about 85 per cent of households now access microfinance, and 80 per cent have savings; (viii) the proportion of households with hygienic latrines has increased from 6 per cent to 98 per cent; (ix) 29,000 households have obtained access to drinking water; and (x) secure land tenure and increased incomes have enabled households to substantially improve their housing in size, quality and resilience to climate shocks.
9. Key project outcomes are summarized below:
 - (i) Improved climate change adaptation and resilience. Water resources are now managed effectively, to protect land from tidal and storm surges, improve drainage and enhance accretion. Average soil salinity declined by 67 per cent between 2012 and 2016. By 2017, flood protection works had reduced crop damage for over 90 per cent of farmers within polder areas.
 - (ii) Improved communication infrastructure. The paved roads constructed by the project have substantially reduced the average distance from houses to schools and markets. Of the 40 cyclone shelters constructed, eight are being used as clinics and 29 as schools, with a visible increase in the enrolment of girls.
 - (iii) Secure possession of land for the landless. Prior to the project, only 1.2 per cent of households had secure title to their land; this has now increased to 61 per cent. Over 12,450 households have received land titles. A key innovation is that land titles are in the joint names of wives and husbands, providing each with equal rights to land, with the wife's name appearing before the husband's.
 - (iv) Improved livelihoods and household resilience. In 2012, only 2 per cent of farmers were cultivating high-yielding varieties of paddy; by 2017, this proportion had increased to 87 per cent. Forty-four percent of farmers affected by poor drainage have adopted integrated vegetable and fish production. The use of chemical fertilizers has decreased considerably, with significant numbers of farmers now using biological means of pest control.
 - (v) Women's empowerment. The project has visibly increased the empowerment of women, within a very conservative social context. Some 33,200 women have started economic activities or reported increased incomes from existing activities. Women are now engaged in a range of farm and off-farm activities, including aquaculture, horticulture, livestock,

handicraft production, tailoring, trading and shop management. Over 27,600 women have received training on women's legal rights (jointly with their husbands), as well as health and family planning services. Women are now more mobile, regularly visiting markets, clinics and town centres. Most importantly, women receive an equal share of the title to land, which makes them far less vulnerable to divorce or abandonment. There has been an 85 per cent reduction in child marriage and a 97 per cent reduction in polygamy.

II. Justification for the additional financing

A. Rationale and justification for the additional financing

10. The proposed additional financing is justified by the project's highly satisfactory performance and outcomes, and its well-established delivery platform, which can be used effectively to scale up results, increase outreach, expand benefits and consolidate innovations and best practices. There is also scope to expand the benefits to areas not currently served by the project.
11. The project has successfully demonstrated that the hydrological dynamics of the estuary, which makes the chars fragile, can be controlled by climate-resilient infrastructure. It has proven that targeted development interventions can address the social, environmental and economic vulnerability of inhabitants. The project has been implemented in four southern coastal districts, in four phases, cumulatively benefiting over 90,000 poor and destitute households, or 500,000 people, across the Noakhali, Laxmipur, Feni and Chattogram Districts. The proposed additional financing will implement development activities in all four CDSP areas. This will expand project benefits to an additional 57,000 households, or a population of more than 367,000 people living in the char areas.
12. The additional financing is aligned to all three strategic objectives of the results-based country strategic opportunities programme (RB-COSOP) and to the Government's Seventh Five-Year Plan. In line with the strategic focus of the COSOP, it will support poor people in the vulnerable char areas to better adapt to climate change, enhance their livelihoods, and facilitate their access to commodity value chains and markets. The additional financing will support the Government in addressing Sustainable Development Goals 1 (no poverty), 2 (zero hunger), 5 (gender equality), 6 (clean water and sanitation), 10 (reduced inequalities) and 13 (climate action).

B. Description of geographic area and target groups

13. The coastal zone of Bangladesh is expanding southwards as river water deposits sediment and creates new land. The eastern and central parts of the delta are the most vulnerable; the low-lying, newly accreted chars are subject to regular flooding, resulting in saline intrusion and human vulnerability. The additional financing will cover the CDSP-IV chars (Nangulia, Noler, Caring, Urir and Ziauddin), the CDSP I, II and III chars, and the smaller area covered by the Land Reclamation Project. In addition, preparatory activities are planned for some chars proposed for the next phase, known as CDSP-V (Char Maksumul Hakim, Dhal Char/Kola Toli, and Char Mozammel). These areas cover around 145,000 hectares and have a population of about 1.6 million, in 300,000 households.
14. The people living on these remote new lands are the most vulnerable, as they have no formal titles to land and no protection from storm surges caused by cyclones. Over 90 per cent of the population falls within IFAD's target group in terms of poverty levels (below the poverty line) and land ownership (landless, small and marginal farmers).
15. The additional financing will target: (i) small and marginal farmers, to benefit from climate-resilient water infrastructure and climate-smart agricultural technology;

(ii) new settlers, to obtain land titles; (iii) new and existing settlers, to obtain access to improved communication infrastructure; and, (iv) small entrepreneurs, to benefit from microfinance and microenterprise support.

16. Women will be specifically targeted in: provision of land titles; support for economic activities; access to water, sanitation, hygiene and health facilities and services; financial inclusion; and legal rights awareness.

C. Components/outcomes and activities

17. The CDSP-IV's existing components, and the key activities within these components that will be supported through the additional financing, are as follows:

- (i) Protection from climate change: (a) water management (CDSP-IV and earlier CDSP areas) through: repairs to or retirement of embankments; replacement or maintenance of sluices; re-excavation or construction of khals (canals); construction or improvement of water management group centres; and acquisition of land for retired embankments and sluices; (b) social forestry, including: mangrove plantation; strip plantation along khals, roads and embankments; and formation or strengthening of social forestry groups in CDSP-IV areas.
- (ii) Internal infrastructure: (a) internal infrastructure, including paved and earth roads, cyclone shelters, markets and killas (raised mounds of land); most works will be in CDSP-I to CDSP-IV areas, with limited development in the new chars proposed for CDSP-V; and (b) water and sanitation facilities, including deep tube wells in CDSP-I to CDSP-IV areas and in CDSP-V chars, (where there will also be test tube wells), and household latrines in CDSP-I and CDSP-III areas.
- (iii) Land settlement and titling: (a) settlement and land titling in Urir Char; (b) demarcation of the boundary between Noakhali and Chattogram Districts; (c) settlement and land titling on Char Nangulia; and (d) upgrading/extension of digital land record management systems.
- (iv) Livelihoods support: (a) commercial agriculture (field crops, horticulture, poultry); (b) paid agricultural advisory services through a contracted NGO; (c) commodity value chain upgrading (awareness-raising, value chain mapping, strategic investment planning, training, value chain investments, mentoring and monitoring); (d) agriculture information and communication technology; and (e) institutional and livelihood support, through contracted partners, covering homestead-based livelihoods, water and hygiene, legal and human rights and social awareness, and water management organizations.
- (v) Technical assistance and management support: A technical assistance team will be contracted to advise and assist the implementing agencies, supervise the quality of works, produce consolidated progress reports and undertake financial management. The team will be responsible for impact evaluation, lesson learning and knowledge management. Funding is also allocated for: (a) a hydro-morphological study to generate information on the pattern of erosion and accretion; and (b) a strategic planning exercise to improve the institutional framework for new char investments and to design CDSP-V.
- (vi) Resettlement action plan and framework (Social, Environmental and Climate Assessment Procedures [SECAP] guidelines): (a) undertaking a process of free, prior and informed consent (FPIC) with households whose land is partially or completely acquired for planned climate-resilient infrastructure; (b) provision of compensation packages in line with the Acquisition and Requisition of Immovable Property Act (2017); (c) provision of a package of early measures to the affected households, including

livelihood support; and (d) establishment of monitoring and grievance redressal mechanisms.

D. Benefits, costs and financing

Project costs

18. The total cost of the proposed additional financing is US\$54.8 million over a three-year period (inclusive of taxes). The project costs by component and financier are presented in table 1, by expenditure account and financier in table 2 and by component and year in table 3.

Table 1

Project costs by component and financier

(Thousands of United States dollars)

Component	IFAD loan		NGOs		The Netherlands		Beneficiaries		Borrower/ counterpart		Total
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
1. Protection from climate change											
1.1 Water resource management	7 238	28.1	-	-	-	-	-	-	18 497	71.9	25 735
1.2 Social forestry	1 043	81.3	-	-	-	-	-	-	240	18.7	1 283
2. Internal infrastructure											
2.1 Communications and cyclone protection infrastructures	7 106	65.9	-	-	-	-	-	-	3 684	34.1	10 790
2.2 Water and sanitation	2 426	65.5	-	-	-	-	-	-	1 278	34.5	3 704
3. Land settlement and titling	938	58.9	-	-	-	-	-	-	655	41.1	1 593
4. Livelihood support											
4.1 Commercialized agricultural development	1 880	31.5	3 680	61.6	-	-	77	1.3	333	5.6	5 971
4.2 Social and livelihood support	-	-	-	-	424	100	-	-	-	-	424
5. Technical assistance and management support	-	29.4	-	-	5 275	100	-	-	-	-	5 275
Total	20 630	37.7	3 680	6.7	5 700	10.4	77	1.3	24 688	45.1	54 775

Table 2
Project costs by expenditure category and financier
(Thousands of United States dollars)

Expenditure category	IFAD loan		Borrower		The Netherlands		NGOs		Beneficiaries		Total
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
I. Investment costs											
A. Civil works	16 463	69.8	7 137	30.2	-	-	-	-	-	-	23 600
B. Plantation establishment and maintenance	859	99.1	8	0.9	-	-	-	-	-	-	867
C. Vehicles and equipment											
Vehicles	160	88.2	21	11.8	-	-	-	-	-	-	181
Equipment, furniture, and computers	212	64.3	82	24.7	36	10.9	-	-	-	-	330
D. Technical assistance activities	-	-	-	-	5 275	100.0	-	-	-	-	5 275
E. Compensation and contribution	532	3.3	15 216	95.5	182	1.1	-	-	-	-	15 931
F. Studies, contract staff, training and workshops											
Studies	2	30.0	6	70.0	-	-	-	-	-	-	8
Training, workshops and meetings	2 319	82.4	212	7.6	206	7.3	-	-	77	2.8	2 815
G. NGOs' activities	-	-	-	-	-	-	3 680	100.0	-	-	3 680
Total investment costs	20 547	39.0	22 682	43.1	5 700	10.8	3 680	7.0	77	0.1	52 686
II. Recurrent costs											
A. Salaries and allowances	-	-	1 395	100.0	-	-	-	-	-	-	1 395
B. Infrastructure O&M	11	3.2	324	96.8	-	-	-	-	-	-	334
C. Operating expenses											
Vehicle O&M	18	29.8	43	70.2	-	-	-	-	-	-	61
Equipment and building O&M	54	18.1	245	81.9	-	-	-	-	-	-	299
Total recurrent costs	83	4.0	2 006	96.0	-	-	-	-	-	-	2 089
Total	20 630	37.7	24 688	45.1	5 700	10.4	3 680	6.7	77	0.1	54 775

Table 3
Project costs by component and year
(Thousands of United States dollars)

Component/subcomponent	2019		2020		2021		Total
	Amount	%	Amount	%	Amount	%	Amount
A. Protection from climate change							
1. Water resources management	8 222	31.9	13 897	54.0	3 616	14.1	25 735
2. Social forestry	586	45.7	395	30.8	302	23.5	1 283
B. Internal infrastructure							
1. Communications and cyclone protection infrastructures	4 281	39.7	4 666	43.2	1 842	17.1	10 790
2. Water and sanitation	1 573	42.5	1 820	49.1	311	8.4	3 704
C. Land settlement and titling	660	41.4	547	34.3	387	24.3	1 593
D. Support for livelihoods							
1. Commercialized agriculture development	2 257	37.8	2 334	39.1	1 380	23.1	5 971
2. Social and livelihood support	252	59.3	122	28.7	51	12.0	424
E. Technical assistance and management support	5 275	100.0	-	-	-	-	5 275
Total	23 105	42.2	23 781	43.4	7 889	14.4	54 775

Project financing/cofinancing strategy and plan

19. The proposed additional financing phase will consist of: an IFAD loan of US\$20.6 million on 67 per cent highly concessional and 33 per cent blend terms; a Netherlands grant of EUR 5.0 million; a Government of Bangladesh contribution of US\$24.7 million; participating NGOs' contribution of US\$3.7 million; and beneficiaries' contribution of US\$0.1 million. The IFAD loan will leverage cofinancing at a ratio of 1:1.66.

Disbursement

20. The financial management and disbursement arrangements for the additional financing will mirror those of the original project. IFAD funds will flow to a designated account (DA) at the Bangladesh Bank, in compliance with the Government's regulations. The DA will be operated by the lead implementing agency, under imprest arrangements. Five operating accounts will be opened in local currency for each implementing agency. Funds will flow from the DA to the operating accounts, based on approved annual workplans and budgets and relevant financial information. Disbursement procedures will be detailed in the Letter to the Borrower.

Summary of benefits and economic analysis

21. The proposed additional financing would provide a range of economic, social and environmental benefits to 57,000 households, consisting of 342,000 people. These would be in the form of: (i) stabilized land protected from climatic events; (ii) land titles for poor women and men; (iii) increased incomes from agriculture, livestock, fisheries and off-farm activities; (iv) access to communications infrastructure; (v) improved health, hygiene and sanitation; and (vi) empowerment of women. As CDSP-IV and previous phases have already developed infrastructure and promoted the full range of project activities, the relatively limited amount of additional financing will generate substantial increases in income and other benefits.
22. The proposed additional financing has an economic internal rate of return (EIRR) of 37 per cent and a benefit/cost ratio of 1.43. A separate analysis has been carried out for the worst case scenario of rapid sluice gate erosion, which yields an EIRR of 30 per cent at project level or 16 per cent at affected sluice gate level. It is noted that under all scenarios the EIRRs are well above the opportunity cost of capital.
23. The EIRR of the additional financing is higher than that of CDSP-IV at design, which was 17 per cent. This is due to the capital investments already made under CDSP I–IV, on which the additional financing will build, combined with the efficient management and implementation mechanism that has already proven its delivery capability. The higher number of beneficiaries of the additional financing also contributes to the higher EIRR.
24. The financial internal rate of return of the additional financing is 34 per cent. The net benefit flow was discounted at 12 per cent (the current weighted average interest rate), in order to ascertain the break-even point of cash flows. Within seven years the project will start generating a positive net benefit flow.

Exit strategy and sustainability

25. CDSP has a built-in approach to sustainability, through the provision of land titles, development of infrastructure, improved livelihoods and better social services. The exit strategy for the additional financing includes strengthening the sustainability of local and community institutions, the participatory operation and maintenance of infrastructure, and market-based financing of livelihood activities. Furthermore, in September 2018, the Government approved the Bangladesh Delta Plan (BDP) 2100, a comprehensive and integrated approach to tackling water resource management, climate change and environmental challenges to the year 2100. The Bangladesh Delta Plan 2100 (BDP2100) focuses on and supports the long-term and

sustainable development of six areas, including the coastal zone, river systems and estuaries covering the CDSP areas. BDP2100 was prepared with the assistance of the Government of the Netherlands. It is a US\$38 billion endeavour that will address key challenges, including those that the CDSPs have been addressing. The Project for Support to Implementation of BDP2100 was approved in October 2018; it will develop an investment plan and strengthen the related institutional framework, capacities and research.

III. Risks of implementing the additional financed activities

A. Project risks and mitigation measures

26. Environmental risk: Over time, changes in the pattern of erosion and accretion can result in the loss of land areas developed by CDSP-IV. A hydro-morphological study will be undertaken under the proposed additional financing to monitor erosion and accretion patterns and inform infrastructure design and location. There is also a risk that extreme weather events, particularly cyclones, may damage infrastructure and livelihoods. CDSP-IV invests in cyclone shelters to partially mitigate the impact of this risk.
27. Institutional risk: The provision of secure land titles requires cooperation and coordination between government agencies and local communities. Disputes over local administrative boundaries can disrupt land titling and cause delay. The proposed additional financing will specifically address the issue of boundary demarcation, where relevant, to facilitate and expedite land titling activities.
28. Resettlement risk. As detailed in section III.B below, a number of households will have to be resettled due to the need to rapidly build infrastructure to contain unexpected localized erosion. Failure to address this erosion would jeopardize the livelihoods of 22,000 households. There is a risk that affected households would not be compensated rapidly. To mitigate this risk, extensive consultations have been undertaken with all stakeholders, leading to the development of a detailed Resettlement Action Plan and Framework which have been agreed and approved by the Government.
29. Sustainability. There is a risk that relevant government agencies will be able to allocate from their development budgets only one part of the resources for the maintenance of infrastructure constructed under the project. This risk will be mitigated through systematic dialogue with the relevant agencies to ensure appropriate planning of development expenditures and to institutionalize permanent mechanisms to ensure that resources are available for operation and maintenance of the infrastructure. Greater farmer and community ownership and involvement in maintenance works will also help ensure sustainability.

B. Environment and social category

30. Under the proposed additional financing, a number of households will have to be resettled due to the need to rapidly build climate-resilient infrastructure (sluice gates and retired embankments) to contain unexpected localized erosion in Noler Char and Char Nangulia. It is anticipated that 291 hectares of land will have to be acquired for these works, affecting about 1,000 households, of which 300 would lose their land entirely and 700 partially. Failure to address this erosion would seriously jeopardize the land and livelihoods of 22,000 households (including these 1,000 households). The need for land acquisition and consequent resettlement of some households means that the proposed additional financing is classified as being in social/environmental Category A.
31. The full costs of land acquisition will be borne by the Government. Extensive consultations have been undertaken with all stakeholders, leading to the development of a detailed and comprehensive Environmental and Social Impact

Assessment (ESIA), Resettlement Action Framework (RAF) and Resettlement Action Plan (RAP), in compliance with SECAP requirements. These documents have been discussed in detail and agreed with the relevant government agencies, and have been publicly disclosed as required (on IFAD's website and in Bangladesh).

32. The ESIA concludes that: (i) from an environmental perspective, the project will continue to stabilize newly accreted land areas and positively modify the physical and natural environment by reducing saline intrusion and increasing natural growth and agricultural productivity; (ii) from a social perspective, the impact will be overwhelmingly negative in the absence of the proposed additional financing. The ESIA includes a detailed environmental and social management plan, which has been mainstreamed into the project design.
33. The RAP/RAF has been formulated for households that have already had their land acquired, and for those that will be affected by the proposed additional financing respectively. The document describes in detail: (i) the number of households that are or will be affected; (ii) how and to what extent they are or will be affected; (iii) the legal and institutional framework; (iv) a complete step-by-step procedure for the implementation of land acquisition, outlining responsibilities and timeframes; (v) special provisions for vulnerable groups and gender-related impacts; (vi) detailed information on the FPIC process carried out to reach agreement with affected households and communities; (vii) grievance redress mechanisms; (viii) methodology for valuation of land acquired and losses of livelihoods; (ix) costing of the land acquisition process; and (x) monitoring and evaluation of the process. The RAP/RAF have been internally approved as compliant with SECAP procedures, and specifically with Guidance Statement 13 on physical and economic resettlement.
34. IFAD will closely monitor implementation of the land acquisition process.

C. Climate risk classification

35. Bangladesh – particularly its coastal zone – is highly vulnerable to climate change. The project is deliberately targeting an area that is still morphologically active, and building infrastructure to stabilize the chars over time. As climate change is likely to affect the coastal zones over the next three to four decades, all phases of CDSP – including the proposed additional financing phase – are considered to be risky. As such, the climate risk classification is considered "high".
36. Indeed, the entire concept of the various CDSP phases is to stabilize newly accreted land and protect it from climate change so as to allow proper human settlement. As such, the project is intrinsically a climate change adaptation investment.

IV. Implementation

A. Compliance with IFAD policies

37. The proposed additional financing complies with relevant IFAD policies, including the IFAD Strategic Framework 2016-2025, IFAD Policy on Targeting, IFAD Policy on Improving Access to Land Tenure Security and IFAD Policy on Gender Equality and Women's Empowerment. Particularly important is its compliance with IFAD's SECAP, taking into consideration its social/environmental Category A. It also complies with IFAD's priority focus on gender transformative actions and climate-focused development.

B. Organizational framework

Project management and coordination

38. Management arrangements for the proposed additional financing phase will be almost the same as the those of the CDSP-IV. The Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources will be the lead implementing agency. It will coordinate project management and implementation among the four

other agencies that are responsible for specific activities (the Ministry of Land, for land titling; the Forest Department, for social forestry; the Department of Public Health Engineering, for sanitation works; and the Local Government Engineering Department, for small infrastructure).

39. The project director from BWDB will continue to act as the project coordinating director. Each of the other implementing agencies will have its own project director (with joint directors for land activities). The Netherlands will procure the services of the technical assistance team on a competitive basis, in line with procurement rules. At the operational level, the project will be guided and advised by a Management Committee chaired by the project coordinating director. At the policy level, there will be an inter-ministerial Steering Committee, chaired by the Secretary of the Ministry of Water Resources.

Financial management, procurement and governance

40. The lead implementing agency, BWDB, is responsible for ensuring good fiduciary practices. The inherent fiduciary risk is deemed to be medium for the project, as the BWDB has had challenges in coordinating financial management and consolidating the financial statements of the project. The risk mitigation measures envisaged include: adequate staffing; use of accounting software; a control framework consistent with best practices; a manual in the local language; and semi-annual financial reporting to IFAD. Apart from the mandatory annual audit by the supreme audit institution for each entity, consolidated financial statements of the project will be audited annually by a private firm.
41. Procurement will follow government procedures, to the extent that they comply with IFAD requirements, with IFAD prior and post review.

C. M&E, learning, knowledge management and strategic communication approaches

42. Key elements of the CDSP-IV M&E system will be maintained, including six-monthly progress reporting, participatory M&E, knowledge-attitude-practice surveys, annual outcome surveys, baseline and impact studies, and ad hoc diagnostic studies. These will inform project management and results monitoring, and will provide materials for knowledge management and strategic communication initiatives.
43. In addition, as outlined in the RAP-RAF, activities related to land acquisition and resettlement will be monitored quarterly, and an ex post evaluation of the process and its impact on the affected households will be undertaken.

D. Proposed amendments to the project financing agreement

44. A new financing agreement specifying the new lending terms and conditions will be prepared and negotiated. It will reflect a three-year extension of the project completion date, from March 2019 to March 2022. The financing agreement will contain a set of assurances related to proper implementation of the RAP/RAF.

V. Legal instruments and authority

45. A new financing agreement between the Republic of Bangladesh and IFAD will constitute the legal instrument for extending the proposed additional financing to the Borrower. A copy of the negotiated financing agreement is attached as appendix I.
46. The People's Republic of Bangladesh is empowered under its laws to receive financing from IFAD.
47. I am satisfied that the proposed additional financing will comply with the Agreement Establishing IFAD and the Policies and Criteria for IFAD financing.

VI. Recommendation

48. I recommend that the Executive Board approve the proposed additional financing in terms of the following resolution:

RESOLVED: that the Fund shall provide a loan on 67 per cent highly concessional terms and 33 per cent blend terms to the People's Republic of Bangladesh in an amount equivalent to twenty million six hundred thousand United States dollars (US\$20,600,000), and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

Gilbert F. Hougbo
President

Negotiated financing agreement: "Char Development and Settlement Project – Phase IV"

(Negotiations concluded on 25 April 2019)

New Loan No: _____

Project name: Char Development and Settlement Project - Phase IV ("the Project")

People's Republic of Bangladesh ("the Borrower")

and

The International Fund for Agricultural Development (the "Fund")

(each a "Party" and both of them collectively the "Parties")

WHEREAS for the purpose of financing the Char Development and Settlement Project-Phase IV (CDSP-IV) (the "Initial Project"), on 9 May 2011, the Borrower and IFAD entered into a Financing Agreement No. L-807-BD ("Initial Financing Agreement") pursuant to which the Fund agreed to provide financing to the Borrower in the form of a loan in the amount of thirty million, eight hundred sixty thousand special drawing rights (SDR 30 860 000);

WHEREAS, on 18th June 2018, the Borrower requested additional financing to scale-up the Initial Project's achievements, effectively increase the outreach and expand the benefits, innovations, and best practices of the Initial Project;

WHEREAS the Fund has agreed to provide new financing in the form of a New Loan to further support the Initial Project;

WHEREAS the New Loan shall complement the Initial Project;

WHEREAS, on the basis of the above considerations, the Fund has agreed to extend the New Loan to the Borrower on the terms and conditions set forth herein;

NOW THEREFORE, the Parties have agreed to enter into this Financing Agreement (this "Agreement") as follows:

Section A

1. The following documents collectively form this Agreement: this document, the Project Description and Implementation Arrangements (Schedule 1), the Allocation Table (Schedule 2), and the Special Covenants (Schedule 3).

2. The Fund's General Conditions for Agricultural Development Financing dated 29 April 2009, amended as of December 2018, and as may be amended hereafter from time to time (the "General Conditions"), are annexed to this Agreement, and all provisions thereof shall apply to this Agreement. For the purposes of this Agreement the terms defined in the General Conditions shall have the meanings set forth therein.

3. The Fund shall provide a New Loan to the Borrower (the "New Loan"), which the Borrower shall use to implement the Project in accordance with the terms and conditions of this Agreement.

Section B

1. The New Loan is granted on 67% highly concessional terms and 33% blend terms.
2. The amount of the New Loan eligible to highly concessional terms is thirteen million, eight hundred two thousand United States dollars (USD 13 802 000).
3. The amount of the New Loan eligible to blend terms is six million seven hundred ninety-eight thousand United States dollars (USD 6 798 000).
4. The New Loan granted on highly concessional terms shall be free of interest but shall bear a fixed service charge as determined by the Fund at the date of approval of the New Loan by the Fund's Executive Board, payable semi-annually in the Loan Service Payment Currency. The New Loan shall have a maturity period of forty (40) years, including a grace period of ten (10) years starting from the date of approval of the Loan by the Fund's Executive Board.
5. The principal of the New Loan granted on highly concessional terms will be repaid at four and half per cent (4.5%) of the total principal per annum for years eleven (11) to thirty (30), and one per cent (1%) of the total principal per annum for years thirty-first (31) to forty (40).
6. The New Loan granted on blend terms shall be subject to interest on the principal amount outstanding and a service charge as determined by the Fund at the date of approval of the New Loan by the Fund's Executive Board. The interest rate and service charge determined will be fixed for the life cycle of the loan and payable semi-annually in the Loan Service Payment Currency, and shall have a maturity period of twenty-five (25) years, including a grace period of five (5) years starting from the date of approval of the New Loan by the Fund's Executive Board.
7. The portion of the New Loan granted on blend terms will be repaid in equal instalments.
8. The Loan Service Payment Currency shall be US dollar.
9. The first day of the applicable Fiscal Year shall be 1 July.
10. Payments of principal and service charge of the New Loan shall be payable on each 15 April and 15 October.
11. The Designated Account of the Initial Loan shall be used for the New Loan. Separate ledgers shall be set-up and maintained by the Project for the New Loan.
12. The Borrower shall provide counterpart financing for the Project in the amount of twenty four million seven hundred thousand United States dollars (USD 24 700 000) which includes duties and taxes. The remaining part of the counterpart financing shall be utilised to fully cover the costs of land acquisition and all Project staff salaries and allowances, and to cost-share civil works, equipment, studies and training, infrastructure operation and maintenance, and operating costs. Beneficiaries shall provide their share of project activities.

13. The Project shall be co-financed by a grant from the Netherlands in the amount of five million Euro (Euro 5 000 000). The grant will be administered directly by the Embassy of the Kingdom of the Netherlands in Dhaka and will be used to provide technical assistance to the implementing agencies.

Section C

1. The Lead Project Agency shall be the Bangladesh Water Development Board (BWDB) within the Ministry of Water Resources of the Borrower.
2. The Project Completion Date shall be the 31 March 2022 and the Financing Closing Date the 30 September 2022.

Section D

The New Loan will be administered and the Project supervised by the Fund. The Borrower will conduct its own administration and supervision of the New Loan and Project.

Section E

1. The following are the designated representatives and addresses to be used for any communication related to this Agreement:

For the Borrower:

Secretary
Economic Relations Division
Ministry of Finance,
Government of the People's
Republic of Bangladesh
Sher-e-Bangla Nagar
Dhaka 1207, Bangladesh

For the Fund:

President
International Fund for Agricultural Development
Via Paolo di Dono 44
00142 Rome, Italy

This Agreement has been prepared in the English language in two (2) original copies, one (1) for the Fund and one (1) for the Borrower.

PEOPLE'S REPUBLIC OF BANGLADESH

(Authorized Representative)
(name and title)

INTERNATIONAL FUND FOR
AGRICULTURAL DEVELOPMENT

Gilbert F. Houngbo
President

Schedule 1

I. **Project Description**

1. *Target Population.* The target groups and beneficiaries of the Project are: (i) small and marginal farmers to benefit from climate resilient water infrastructure and climate smart agriculture technology; (ii) new settlers to obtain land titles; (iii) new and existing settlers to obtain access to improved communication infrastructure; and, (iv) small entrepreneurs to benefit from micro-finance and micro-enterprise support. Women will be specifically targeted in the provision of land titles; support for economic activities; access to water, sanitation, hygiene and health facilities and services; financial inclusion; and legal rights awareness.

2. *Project Area.* The Project is implemented in selected chars of four Southern coastal districts, namely Noakhali, Lakshmipur, Feni and Chattogram districts. The additional financing will cover poldered and non-poldered areas in these districts, including the following chars: Char Bagga Donna 1 and 2, Char Mojid, Vatirtek, Boyer Char, Char Nangulia, Noler Char, Caring Char, Urir Char and Char Ziauddin. Additionally, some initial work will be done in Char Mozammel, Dhal Char, Char Kolatoli and Char Maksumul Hakim.

3. *Goal.* The Project goal is to reduce poverty and hunger for poor people living on newly accreted coastal chars through improved and more secure livelihoods.

4. *Object.* The Project objective is the development of improved and more secure rural livelihoods for poor households in the selected coastal chars.

5. *Components.* The Project consists of five (5) components, namely: (i) protection from climate change; (ii) internal infrastructure; (iii) land settlement and titling; (iv) livelihoods support; and (v) technical assistance and management support. The key activities within these components which will be supported with additional financing are outlined below.

5.1 Component 1. Protection from climate change: (a) water management through repairs or retirement of embankments; replacement or maintenance of sluices; re-excavation or construction of canals; construction or improvement of Water Management Group centres; and, acquisition of land for retired embankments and sluices; (b) social forestry including mangrove plantation; strip plantation along canals, embankments and roads; and, formation or strengthening of Social Forestry Groups.

5.2 Component 2. Climate resilient infrastructure: (a) internal infrastructure including paved and earth roads, cyclone shelters, markets and killas (raised mounds of land); (b) water and sanitation facilities including deep tube-wells (including test tube-wells), and household latrines.

5.3 Component 3. Land settlement and titling: (a) settlement and land titling in Urir Char, (b) demarcation of the boundary between Noakhali and Chattogram Districts; (c) settlement and land titling on Char Nangulia; and, (d) upgrading/extension of digital Land Record Management Systems.

5.4 Component 4. Livelihoods support: (a) commercial agriculture (field crops, horticulture, poultry); (b) pay-based agricultural advisory services through a contracted NGO(s); (c) commodity value chain upgrading (awareness raising; value chain mapping; strategic investment planning; training; value chain investments; monitoring); (d) Agriculture Information and Communication Technology; (e) institutional and livelihoods support through contracted partners, covering homestead-based livelihoods; water and hygiene; social awareness; legal and human rights; and, support for water management organisations.

5.5 Component 5. Technical assistance and management support: A technical assistance team will be contracted to assist the implementing agencies, supervise the quality of works, produce consolidated progress reports, and undertake financial management. It will be responsible for impact evaluation, lesson learning and knowledge management. Support will be provided for: (a) a hydro-morphological study to generate information on the pattern of erosion and accretion; and, (b) a strategic planning exercise to improve the institutional framework for future investments in the chars.

6. A new activity will be included in the additional financing phase, in accordance with IFAD's SECAP guidelines – namely the implementation of a Resettlement Action Plan (RAP) and Resettlement Action Framework (RAF). This will entail: (a) undertaking a free, prior and informed consent (FPIC) process with households whose land is partially or completely acquired for planned climate resilient infrastructure; (b) provision of compensation packages in line with the '*Acquisition and Requisition of Immovable Property Act*' (2017); (c) provision of a package of early measures to the affected households, including livelihoods support; (d) establishment of monitoring and grievance redressal mechanisms.

II. Implementation Arrangements

7. *Lead Project Agency.* The Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources will be the lead Project management and implementing agency. It will coordinate Project management and implementation among the four other agencies that are responsible for specific activities (the Ministry of Land for land titling; the Forest Department for social forestry; the Department of Public Health Engineering for sanitation works; and, the Local Government Engineering Department for small infrastructure).

8. *Project Management.* The Project Director from BWDB will continue to act as the Project Coordinating Director. Each of the other implementing agencies will have its own Project Director (with joint Project Directors for the land settlement and titling component). The Project management structure and staffing for the additional financing will mirror that of the original Project.

9. *Project Governance.* At the policy level there will be an Inter-Ministerial Steering Committee, chaired by the Secretary, Ministry of Water Resources. The composition and terms of reference of the Inter-Ministerial Steering Committee will be similar to those of the original Project. At the operational level, the Project will be guided and advised by a Project Management Committee, chaired by the Project Coordinating Director. The composition and terms of reference of the Project Management Committee will be similar to those of the original Project.

10. *Implementation of Components.* The arrangements for the implementation of activities under the additional financing will be similar to those of the original Project. The main changes will be the introduction of pay-based agricultural advisory services and Agricultural Information and Communication Technology for the provision of extension to farmers.

11. *Project Implementation Manual (PIM).* The Lead Project Agency, working with the respective implementing agencies, shall prepare a draft PIM outlining the standard operating procedures for the implementation of the Project, including for financial management, accounting and procurement, in line with international best practices. Once prepared, the PIM shall be subject to approval by the Inter-Ministerial Steering Committee. Subsequently, the Lead Project Agency shall forward the draft PIM to IFAD for its concurrence. Should IFAD not provide any comment on the draft PIM within thirty (30) days after receipt, it shall be deemed to have no objection. The Lead Project Agency shall adopt the PIM, substantially in the form approved by the Fund.

Schedule 2

Allocation Table

1. Allocation of the Loan Proceeds. (a) The Table below sets forth the Categories of Eligible Expenditures to be financed by the New Loan and the allocation of the amounts of the New Loan to each Category and the percentages of expenditures for items to be financed thereby in each Category:

Category	67% of the New Loan granted on Highly Concessional (HC) terms USD	33% of the New Loan granted on Blend terms (BT) USD	Percentage of Eligible Expenditures to be financed (net of taxes and co-financiers)
I. Works	11 591 000	5 709 000	67% HC and 33% BT
II. Equipment & Materials	234 500	115 500	67% HC and 33% BT
III. Consultancies & Training	1 547 700	762 300	67% HC and 33% BT
IV. Operating costs	428 800	211 200	67% HC and 33% BT
TOTAL	13 802 000	6 798 000	

(b) The terms used in the Table above are defined as follows:

"Works" under category I shall also include water and sanitation works;

"Equipment & Materials" under category II, shall mean eligible expenditures also for vehicles under Investment costs;

"Consultancies & Training" under category III, shall also include eligible expenditures for survey of district boundary to be carried out for land titling;

"Operating costs" under category IV, shall mean eligible expenditures for vehicles, equipment and operations and maintenance expenditures.

Schedule 3

Special Covenants

1. In accordance with Section 12.01(a)(xxiii) of the General Conditions, the Fund may suspend, in whole or in part, the right of the Borrower to request withdrawals from the New Loan if the Borrower has defaulted in the performance of any covenant set forth below, and the Fund has determined that such default has had, or is likely to have, a material adverse effect on the Project:

- (a) The Borrower shall ensure that land acquisition under the Project is governed by the provisions of the *Acquisition and Requisition of Immovable Property Act (2017)* and IFAD's Social, Environmental and Climate Assessment Procedures.
- (b) The Borrower shall implement the Resettlement Action Plan and Resettlement Action Framework, which have been prepared jointly by IFAD and BWDB in compliance with the *Acquisition and Requisition of Immovable Property Act (2017)* and IFAD's Social, Environmental and Climate Assessment Procedures, and which have been publicly disclosed.
- (c) BWDB shall closely monitor the implementation of the Resettlement Action Plan and Resettlement Action Framework and shall report to the Inter-Ministerial Steering Committee and to the Fund accordingly.

Updated logical framework incorporating additional financing

Results Hierarchy	Indicators				Means of verification	Risks and assumptions
	Name	Original baseline	Original target/ achievement till date	Revised target	Source of data	
Outreach Households directly benefiting and receiving project services	Persons receiving project services / total hh members	77,500 women 77,500 men	92,900 women 92,900 men	171,000 women 171,000 men	Project progress reports Frequency: Annual	
	Number of households reached	28,000 households	29,008 households(1160 female headed)	57,000 households		
Goal Reduced poverty and hunger for poor people living on newly accreted coastal chars	Increase in household income (average per year)	Tk71,950	Tk296,925 – 313% increase	Further 50% increase in HH income	Sample surveys at baseline and completion plus Annual Outcome Surveys	A sharp increase in food prices relative to wages could offset improvements in living standards. An opposite movement could make farming attractive
	50% increase in household assets.	Tk35,162 avg total asset value	Tk261,480 – 644% increase	Further 50% increase in value of assets		
	Percent of HH with 5 months or more of food shortage	Reduce from 46% to 23%	Reduce from 82% to 4%	Zero households with food shortage		
Development objective Improved and more secure rural livelihoods for 28,000 households in coastal chars	Number of HHs reporting increased agricultural (paddy) production	20,000 HH (71% of all HH)	22,850 HH (79% of all HH)	49,118 HH report increased farm production	Sample surveys at baseline and completion plus Annual Outcome Surveys	Cyclones and other abnormal weather disrupts livelihoods
	21,000 hh with improved hygiene practices	94% (26,320 hh) wash hands with plain water	95% (27,550 hh) wash hands with soap or ash	20,000 HH adopt improved sanitation		
Outcome 1. Water resources managed effectively to protect land from tidal and storm surges, improve drainage, and enhance accretion	Number of WMG rated effective/ sustainable	80% WMG rated sustainable	50% WMG rated as A or B	75% of WMG rated as A or B	Assessment of WMG performance	Unexpected erosion destroy infrastructure, removing control flooding and drainage, along with loss of land and displacement of h'holds
	1b. 70% empoldered land has reduced soil salinity, flooding and improved drainage	70% empoldered land has reduced soil salinity, flooding and improved	Farmers reporting reductions in salinity = 93%, flooding = 89%, waterlogging= 91%	At least 90% of farmers report improved crop growing conditions	Sample surveys at baseline and completion plus Annual Outcome Surveys	
Output 1. Area empoldered by embankment and foreshore protected through plantation	Area empoldered. Length of embankment Length of khal excavation	10,000 ha of land, 40 km embankment 202 km khal	13,000 ha empoldered, 57 km embankment 141 km khal	20 km embankment 3 new sluices, 185 additional km khal	Project progress reports	Need to be able to acquire land for retired embankments and sluices and compensate affected households.
	Area/km of plantation	2206 ha & 546 km	7623 ha and 383 km	10,123 ha and 448 km		
	Water management and social forestry groups	31 WMG 490 SFG	24 WMG 695 SFG	168 WMG 835 SFG		
Outcome 2: Improved road communication, available infrastructure for multipurpose use and ensured safe water and hygienic sanitation	Better communication in different places	No pucca or brick roads.	75% of journeys to school or market use pucca or brick roads.	75% of journeys to school or market use pucca or brick roads.	Baseline and impact survey Traffic survey	Government agencies need to allocate sufficient resources to maintain infrastructure once project investment is completed.
	No. of people having access to shelter	Only one shelter – Uirir Char	37 shelters – capacity 92,500 people	46 additional shelters, capacity 115,000	Project progress reports	
	No. of children at school in shelters		5244 at school in 23 shelters	1,800 children at school in 9 shelters	Rapid survey of cyclone shelters	
	21,000 hh with access to safe water and hygienic sanitation	21,000 HH	29,000 HHs, water source 84% closer	47,240HHs reduced distance to DTW	Baseline and impact surveys	

Results Hierarchy	Indicators				Means of verification	Risks and assumptions
	Name	Original baseline	Original target/ achievement till date	Revised target	Source of data	
Output 2. Climate resilient infrastructure for communications, markets, cyclone protection, potable water and hygienic sanitation.	Length of roads No of bridges & culverts	153 km paved road 129 km earth road 25 bridges, 223 culverts	152.5 km paved, 134.7 km earth road 4 bridges 210 culverts	202.5 km paved roads 164.7 km earth roads 273 culverts	Project progress reports	Risks exist in procurement of contractors for this work – however this has not been a major problem in the past
	Number market & UP complex	7 market, 2 UP	7 market, 2 UP complex	1 market		
	Number of cyclone shelters & livestock refuges (killa)	60 cyclone shelters & 17 killa	39 cyclone shelters, 7 killa	9 cyclone shelters, 1 killa		Expansion of irrigated boro may deplete fresh groundwater needed for domestic supplies
	Number of water supply points Number of household latrines	1160 DTW 23,909 latrines	1475 DTW 25,639 latrines	1,300 DTW 16,500 latrines		
Outcome 3. Secure possession of land	Households with secure possession of land	20,000 HH with land titles	14,082 HH with land titles	6,000 HH with land titles	Project progress reports	Disputes over local government boundaries, can disrupt land titling, with the risk of delay.
Output 3: Land titles granted to HH	No. of HH given secure title to land	20,000 HH	14,082 HH	6,000 HH		
Outcome 4. Improved livelihoods and household resilience	Number of farmers adopt improved agriculture or participate in new value chains	20,000 farmers	22,740 farmers adopt new paddy varieties	22,500 farmers adopt new practices / value chains	Project progress reports	Farmers need to be willing to pay for agricultural advice in order to implement the proposed PBAS.
	Nos. of women involved with their own IGA		68% women earn income 62% women have direct IGA	68% of newly targeted women earn income; 62% of newly targeted women have direct IGA		
	Number of women aware about legal rights		Knowledge: 42% moderate, 58% good. Practice 72%.	1,000 women have increased awareness	KAP survey	
Output 4. Improved livelihood support for the households	Number of Farmer Forums formed and supported	280 Farmers Forums	90 FF	750 FF (new and existing)	Project progress reports	Need to be able to recruit NGOs to implement component 4. In particular need an NGO with the required experience and expertise to implement PBAS
	Number of farmers attending extension events.	5,600 farmers (members of FF)	5,400 farmers	22,500 farmers supported		
	No. of women trained in IGA	28,000 women	22,101 women	20,000 women supported by CRPs		
	No. of women attending rights-based training and events	28,000 women	21,261 women	1,000 women attend legal rights training		

Updated summary of the economic and financial analysis incorporating additional financing

Table A: Models' financial cash flow

Sensitivity Analyses	EIRR	B/C Ratio	NPV (\$ 1000)	NPV (BTK 1000)
Base Case	37%	1.43	137,484	11,273,703
All cost increase by 10%	29%	1.30	105,195	8,625,990
All cost increase by 20%	23%	1.19	72,906	5,978,276
All benefits decrease by 10%	29%	1.28	91,447	7,498,619
All benefits decrease by 20%	20%	1.14	45,409	3,723,535
Cost increase by 10% and benefits decrease by 10%	22%	1.17	59,157	4,850,906
One year delay in getting benefits	21%	1.39	86,058	7,056,765

Table B: Programme/project costs and Logframe targets

PROJECT COSTS AND INDICATORS FOR LOGFRAME							
B)	Total Project Cost (USD mn)		54	Base costs	50.9	PMU	1.32
Beneficiaries		342,590 people	57,098 Households	800 groups			10,688
Cost per beneficiary		158 USD x person		946 USD x HH	Adoption rates		66%
Components	Cost (USD mn)	Outcomes and Indicators					
Water management infra	25.7	80% WMG rated effective / sustainable					
Social forestry	1.3	80% empoldered land has reduced soil salinity, flooding & improved drainage					
Internal infra	10.8	Better communication					
Water and sanitation	3.7	20000 hh having access to safe water hygienic sanitation					
Land settlement	1.6	Households possession of land					
Agric Support	5.9	53,000 farmers reporting adoption of improved agriculture					
Livelihood Support	0.4	HH involved in IGA					

Table C: Main assumptions and shadow prices

The EFA was based on the following main assumptions:

- All benefits were estimated using 2018 prices. A 20-year effective period of the project investment is assumed which include the 3-year project implementation period.
- For all activities which used labour, a financial rural daily wage rate of BDT 444 per person-day was assumed which was the prevailing rate. The same wage rate was used to value household family labour too because of the availability of wage labour opportunities in the project areas with all the development activities taking place in the areas.
- Full production of the crops and livestock models have been valued. It is possible that a part of the production is consumed by the families. This portion is however valued at the same farm-gate price to reflect the full financial and economic value of the production models.
- With increased input deliveries using improved roads in the production areas and market linkages through improved markets, the crops, livestock and fish producers are capable of achieving the increased production levels (WP situation after 2019) that are assumed in this analysis. The AICT, value chain partnerships and cost recovery technical support for farming and livestock would further consolidate these benefits. The production levels and the cost of production assumed at the full development stage (i.e. 10th year of CDSP IV) of CDSP IV was assumed as the without project (WOP) situation to reflect the 2018 situation. The with project (WP) situation was reflected by increased productivity owing all contributing factors highlighted above.
- The AF project would cover a total land extent of 65,200 ha in all CDSP areas. Out of that, TA team estimated that 39,749 ha would be arable land. Most of these arable lands are under agricultural production but with low technology and consequently low productivity. The risk of land becoming saline and also would subject to erosion, farmers tend to invest lower than optimum and thus getting a disproportionately low income. With rolling out of the AF project interventions, the adverse effects due to salinity and erosion will gradually decrease and therefore farmers will go for high tech inputs with increased productivity. The EFA maintained this assumption in estimating project level incremental costs and incremental benefits of all the farm and livestock models.

Table D: Beneficiaries adoption rates and phasing

BENEFICIARIES (cumulative), ADOPTION RATES AND PHASING					D)	Adoption rates at completion
	PY1	PY2	PY3	Total	100%	
Total (removing multiple benefits)				57,098		Average
Paddy (all varieties)	13,628	18,739	20,868	20,868		
<i>Adjusted (adoption rate)</i>	26%	61%	100%			62%
Keshari	511	1,817	1,987	1,987		
<i>Adjusted (adoption rate)</i>	12%	54%	100%			55%
Mung bean	511	2,271	4,259	4,259		
<i>Adjusted (adoption rate)</i>	7%	40%	100%			49%
Vegetables	9,693	14,764	19,165	19,165		
<i>Adjusted (adoption rate)</i>	22%	56%	100%			59%
Sorjon: Fish, Veg and Aman Paddy	170	681	2,839	2,839		
<i>Adjusted (adoption rate)</i>	5%	23%	100%			43%
Back yard layers	570	1,069	1,425	1,425		
<i>Adjusted (adoption rate)</i>	19%	53%	100%			57%
Back yard broilers	228	214	285	285		
<i>Adjusted (adoption rate)</i>	31%	61%	100%			64%
Milk production	2,850	2,850	2,850	2,850		
<i>Adjusted (adoption rate)</i>	33%	67%	100%			67%
Beef fattening	570	1,710	3,420	3,420		
<i>Adjusted (adoption rate)</i>	10%	40%	100%			50%

Table E: Sensitivity analysis

SENSITIVITY ANALYSIS (SA)						
F)		Δ%	Link with the risk after 2nd Year of project start-up	EIRR	BC Ratio	NPV (USD mn)
Base scenario				37%	143%	137,484
All cost increase by 10%	10%		Combination of risks affecting output prices, yields, erosion and land loss	29%	130%	105,195
All cost increase by 20%	20%			23%	119%	72,906
All benefits decrease by 10%	10%		Increase of cost of farm and livestock production	29%	128%	91,447
All benefits decrease by 20%	20%			20%	114%	45,409
Cost increase+benefits decrease	10%		Both scenarios together	22%	117%	59,157
1 year delay in getting benefits			Late commencing of adoption	21%	139%	86,058