



## **Philippines**

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### **Second Cordillera Highland Agricultural Resource Management Project (CHARMP2)**

#### **Additional Financing Design Report**

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Report No.: Top up Financing Report

Asia and Pacific Division  
Programme Management Department

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## Currency Equivalents

Currency Unit

US\$ 1.0 = PhP 45

## Weights and measures

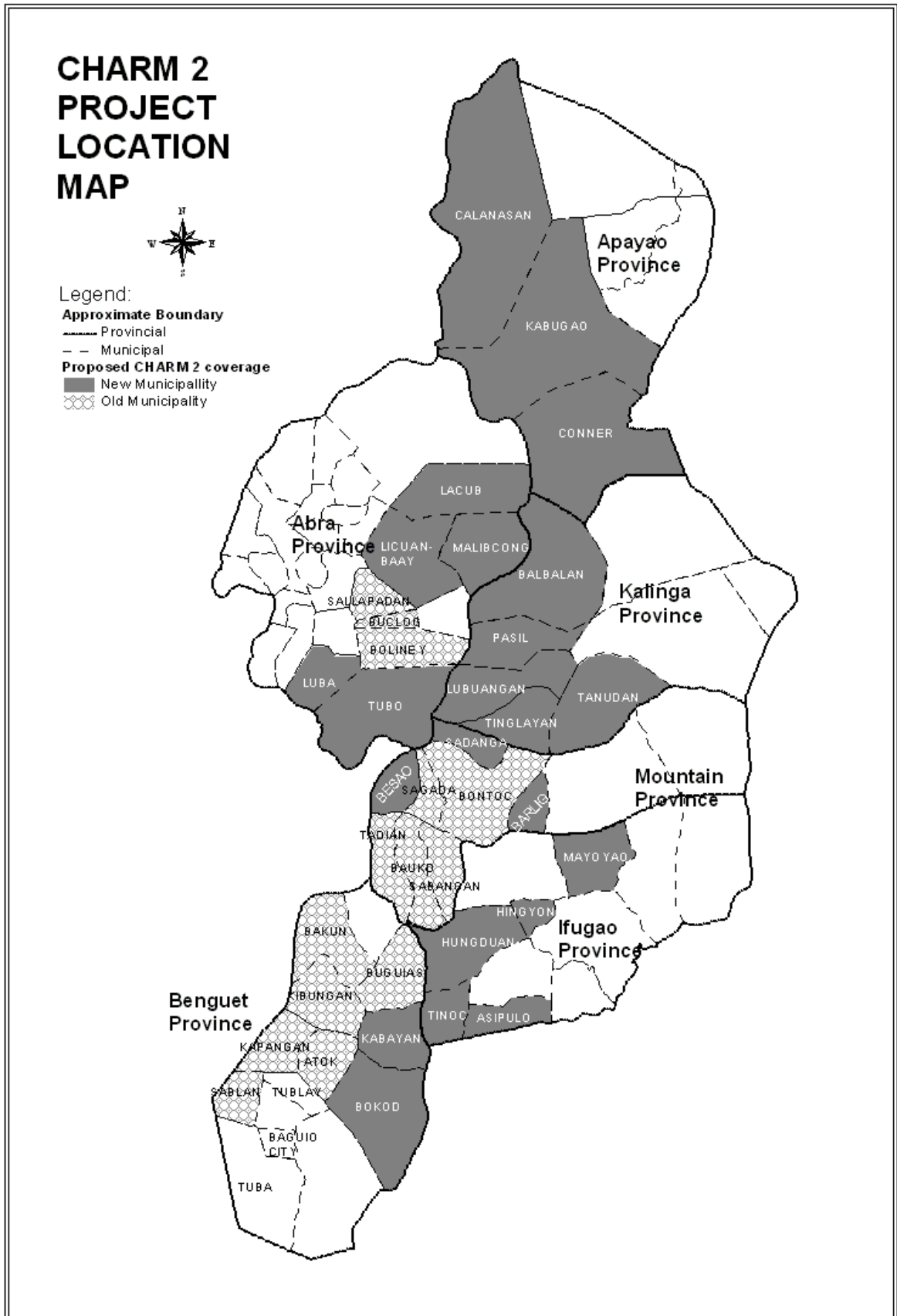
1 kilogram	=	1000 g
1 000 kg	=	2.2014 lb.
1 kilometer (km)	=	0.62 mile
1 meter	=	1.09 yards
1 square meter	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare (ha)	=	2.47 acres
1 ton	=	1,000 kilograms

## Abbreviations and Acronyms

AD	Ancestral Domain
ADB	Asian Development Bank
ADSDPP	Ancestral Domain Sustainable Development and Protection Plan
AFFS	Agroforestry Farmer Field School
AT	Agricultural Technician
AWPB	Annual Workplan and Budget
BAC	Bids and Award Committee
BAWASA	Barangay Water Supply Association
BCR	Benefit-cost ratio
BDP	Barangay Development Plan
BDS	Business Development Service
BDSPs	Business Development Service Providers
BPMET	Barangay Participatory Monitoring and Evaluation Team
CADT	Certificate of Ancestral Domain Title
CAR	Cordillera Administrative Region
CFA	Certificate of Funds Availability
CFI	Community Financial Institutions
CHARMP2	Second Cordillera Highland Agricultural Resource Management Project
CIP	International Potato Center
CIS	Communal Irrigation System (also CIP Community Irrigation Project)
CMO	Community Mobilization Officer
COA	Commission on Audit
CURE	Consortium for Unfavourable Rice Environments
DA	Department of Agriculture
DOF	Department of Finance
DENR	Department of Environment and Natural Resources
DILG	Department of Interior and Local Government
EB	Executive Board
EDP	Enterprise Development Plan
EFA	Economic and Financial Analysis
EIRR	Economic Internal Rate of Return
ENRO	Environment and Natural Resources Office (Provincial Government)
FBS	Farmers' Business School
FFS	Farmers Field Schools
FMR	Farm to Market Road
GAD	Gender and Development
GFI	Government Financial Institution
GIS	Geographic Information System
GoP	Government of Philippines
HADP	Highland Agricultural Development Project
IA	Irrigators Association
IFAD	International Fund for Agricultural Development
IFMS	Indigenous Forest Management System
INREMP	Integrated Natural Resources and Environmental Management Project
ICRAF	World Agroforestry Center
IGA	Income Generating Activities
IP	Indigenous Peoples
IPO	Indigenous Peoples' Organization
IRRI	International Rice Research Institute
LAF	Livelihood Assistance Fund
LIG	Livelihood Interest Group
LGU	Local Government Unit
MAO	Municipal Agriculture Offices
M&E	Monitoring and Evaluation
MFI	Micro-finance Institution
MMG	Municipal Management Group
MOA	Memorandum of Agreement

MTR	Mid-Term Review
NCIP	National Commission on Indigenous Peoples
NEDA	National Economic and Development Authority
NGO	Non-Government Organization
NPV	Net Present Value
O&M	Operation and Maintenance
OFID	Organization of the Petroleum Exporting Countries (OPEC) Fund for International Development
PC	Provincial Coordinator
PCO	Provincial Coordination Officer
PFA	Project Financing Agreement
PhP	Philippines Peso
PIM	Project Implementation Manual
PMET	Planning, Monitoring and Evaluation Team
PMEU	Project Monitoring and Evaluation Unit
PMG	Provincial Management Group
PO	Peoples' Organization
PPIP	Participatory Project Investment Plan
PS	Provincial Supervisor
PSO	Project Support Office
RefoCom	Reforestation Committee of ENRO
RFO	Regional Field Office of DA
RID	Rural Infrastructure Development
RIMS	Rural and Impact Management System
RISC	Regional Inter-agency Steering Committee
RUPES	Rewarding Upland Poor for Environmental Services
SDR	Special Drawing Rights
SIS	Supervision and Implementation Support
SOE	Statement of Expenditure
SP	Sub-project or Service Providers
SPCMAD	Special Projects Coordination and Management Assistance Division
ToR	Terms of Reference
USD	US Dollar
VC/EDP	Value Chain/Enterprise Development Plan
WA	Withdrawal Application

## Map of the Project area



# **Additional Financing to the Republic of the Philippines for Scaling Up the Second Cordillera Highland Agricultural Resource Management Project (CHARMP2)**

## **Executive Summary**

### **BACKGROUND**

Despite impressive national economic growth over the last decade, the country's poverty has not declined significantly over the period. Three-quarters of the poor in the Philippines make their living from agriculture and fishing activities; and poverty incidence is higher in rural areas, where more than 50% of households are still below the official poverty line, compared to 27.9% nationally. Overall, Filipinos per capita income is \$465.15 in 2012; and 54.7% of Filipinos are rural.

Though there are extensive lowlands on the largest islands, approximately 65 % of the land area of the Philippine Archipelago is considered uplands, where poverty is higher. The high poverty incidence in the uplands has been attributed to low farm productivity, limited access to rural advisory services, the unavailability of alternative employment opportunities, and very limited access to basic social services.

### **RATIONALE FOR ADDITIONAL FINANCING SUPPORT**

The Government of the Philippines (GoP) has requested an Additional Financing and extension completion date for the Second Cordillera Highland Agricultural Resource Management Project (CHARMP2), with the purpose of: (i) filling the financing gap of USD 10.0 million from ADB under the original CHARMP2; (ii) expanding project benefits to households by carrying out activities in poorer, hard-to-reach areas within the project area; (iii) generating evidence and knowledge capture for scaling up IFAD-funded approaches in poor mountainous areas of the Philippines; and (iv) consolidating achievements and strengthening local capacities in existing project areas.

Although CHARMP2 had been considered a problem project until 2014, IFAD has worked closely with the GoP to resolve bottlenecks in access to investment capital, to improve fiduciary management of community grants, and to expedite flow of funds. As a result, project delivery has accelerated substantially. This was evidenced by: (i) number of households reached exceeding original targets by an estimated 30,000 families; (ii) 25% increase in disbursement during the past 12 months (and 100% expected disbursement by end of 2016); (iii) satisfactory project implementation rating by the last IFAD Supervision Mission (March 2015); and (iv) satisfactory fiduciary management rating, with 2014 audit report submitted on time and without qualification, and no material violations of the Financing Agreement covenants.

The activities proposed for Additional Financing are fully consistent with project objectives and components, comply with IFAD policies, and envisage no substantive changes in design. Thus the results framework for the original finance continues to apply, but has been fine-tuned to better include outcome targets, and sources of reporting, as per IFAD's new log frame format. The estimated Economic Internal Rate of Return (EIRR) for the additional finance is 22%, and the benefit-cost ratio is estimated at 1.30.

The Department of Agriculture's (DA) success in turning around project delivery and attaining satisfactory performance provides strong evidence of its commitment to fulfilling CHARMP2's objectives of reducing poverty among Indigenous People's (IP) in Cordillera Administrative Region (CAR). To address the shortfall in municipal counterpart funding for infrastructure, the DA allocated additional funds from its regular resources to meet co-financing commitments under the loan. The DA recognizes the importance of project achievements in assisting targeted communities to achieve their priority development needs. The intervention's relevance is also widely appreciated by decentralized municipal and provincial government agencies in CAR. The DA and its partners are keen to now build on the achievements of

CHARMP2, to better address the needs of rural communities in the region, by: (i) expanding project activities to additional barangays; (ii) consolidating preliminary outcomes into sustained, long-term benefits for the target group; and (iii) mainstreaming project processes within Government programming, including the Department of Interior and Local Government (DILG) Bottom-up Planning Initiative and the DA's own Philippines Rural Development Project, but also in Annual Investment Planning processes of decentralized Government units.

This Additional Financing proposal aims at (i) filling a financing gap (after a prospective loan from ADB was redirected to the Department of Environment and Natural Resources); and (ii) scaling up the approaches piloted by CHARMP2, deemed most appropriate in tackling the unique challenges facing indigenous communities in mountainous areas. It seeks to expand, replicate, and sustain CHARMP2's achievements with respect to its approaches, processes, and activities to enhance beneficiaries' outreach and further contribute to the reduction of poverty in CAR. To ensure the project's experience in overcoming challenges in the country's depressed mountain zones is not a one-off event but the stepping stone toward a wider and sustainable impact, the Additional Financing places significant emphasis on generating and disseminating evidence from CHARMP2 innovation and learning. The activities supported under the Additional Financing shall benefit an additional 14,000 farm households, or a cumulative 59,000 households (295,000 individual beneficiaries).

#### **PERFORMANCE OF ONGOING CHARMP2**

The OFID Loan (1224-P) has been fully disbursed as of July 2015, while the IFAD Loan (749-PH) has a disbursement rate of 83.14 % as of January 2016 (and the IFAD Grant's, 1030-PH, disbursement rate is at 97.09%). The last IFAD Supervision Mission (March 2015) rated the Project's implementation progress as satisfactory (5).

Overall, since initiation, the project has benefitted 45,000 households. This well exceeds the original target set at design for the project to reach 12,530 households beneficiaries. Among the Project's key physical achievements registered as of 31 December 2015 are the following: (i) 170 *barangay* participatory investment plans calibrated; (ii) 1,021 peoples' organizations/informal groups organized with 38,500 individual members; (iii) 10,736 ha planted with seedlings (8,540 ha for reforestation and 2,166 ha for agro-forestry); (iv) 178 Farmer Field Schools completed, graduating 5,212 farmers; (v) kick-start grants (Livelihood Assistance Funds, LAF) provided to 644 beneficiary groups with 17,197 beneficiaries; (vi) 380 km of roads improved or rehabilitated; (vii) 54,400 linear meters of footpaths, 747 footbridges, community irrigation systems (covering 910 ha) and 43 domestic water systems (serving 6,055 rural households) constructed.

Although the project's impact assessment has not yet been undertaken, initial outcomes have already been recorded by the Project. To-date, 1,021 People's Organizations (POs) have been empowered to manage several projects (livelihood, reforestation and agroforestry projects, communal irrigations systems and domestic water supply systems). One Certificate of Ancestral Domain Title (CADT) has been completed, and was approved by the National Commission on Indigenous Peoples (NCIP); two additional certificates are currently undergoing final review process. Micro-watersheds were reforested and agroforestry plots were established; these are managed by 204 POs. Improvements in beneficiaries' livelihoods and incomes are gradually being reported, including among members of the 644 livelihood interest groups. Project-supported investments in roads construction/rehabilitation, foot trails and footbridges, have resulted in beneficiaries' reduced travel time (33% and 66% in Kapangan and Benguet), safer conditions mainly due to year-round accessibility. Accessibility to water for irrigation and domestic use has also been improved for about 12,900 households. With the Project's support, crops that were scarcely found in local markets prior to project intervention, are currently undergoing primary processing at local level, and are being placed in local markets. For instance, prior to the Project commencement, the Livelihood Interest Group (LIG) of Ifugao recorded heirloom rice's traded volumes as low as 769 kg through 14 market outlets and sales volumes equaled USD 1,637. Through Project-extended LAF assistance, as well as concerted efforts in support of production, processing, and marketing,

volumes traded increased to 9,577 kg through 23 outlets, and sales reached USD 20,377. Support to the coffee sector is also yielding promising outcomes. Prior to Project support, and as of 2014, the LIG in Benguet was selling 3,200 kg of parchment coffee to scattered buyers, with sales totaling USD 11,148. As of 2015, Project-extended support enhanced the LIG's ability to increase market linkages: agreements with three main buyers are now in place, sales volumes have increased to 6,426 kg, and the value has doubled to USD 23,244. The LIG in Benguet is currently also equipped to engage in the coffee roasting process, and the first sale of roasted coffee has yielded USD 1,879.

Women participation in Project-supported interventions is satisfactory, with a range of 40% to 60% women active participation in various community activities recorded across the 170 barangays. To-date, 45% of women (against an appraisal target of 30%) are covering leadership positions in local organizations. Out of a total PO membership of 1021 people, 53% are women (against an appraisal target of 40%). Out of a total LIG membership of 17,300 people, 64% are women. Women's participation has also been substantial in: trainings (79% for the livestock production and technologies, 69% for the income generating activities, 70% for the enhancement of business and entrepreneurship skills, 59% in agro-forestry farmers field schools); and marketing groups (64%). In addition, out of the 170 Barangay Participatory Monitoring and Evaluation Teams (BPMETs) organized and trained (with a total of 1,500 members), 40% are women, who are currently performing tasks and activities that are traditionally performed by the male population segment. Increased women's participation in the social dimension has also encompassed a recent increase in cases of female-initiated complaints filed to authorities. Throughout the project implementation, women have shown proactive participation in the implementation of rural infrastructure projects, such as in the construction of water and irrigation systems.

As a measurement of achievement of its development objectives, the mid-term Annual Outcome survey found a 45% reduction in the number of households with composite assets that would have classified them among the poorest 20% at baseline. Further, incidence of child acute malnutrition diminished, from 11.1% in 2009 to 8.5% in 2012 for boys; and from 11.1% in 2009 to 7.1% in 2012 for girls. Rural infrastructure investments have resulted in up to 66% travel time reduction, safer travel conditions and year-round accessibility. About 12,900 households have directly benefitted from improved accessibility to water for irrigation and domestic use. Farmers' groups have improved marketing of both traditional and cash crops, resulting in improved access to markets, reduced marketing costs, and greater returns to farmers.

#### **INTERVENTIONS UNDER ADDITIONAL FINANCING**

**Project area and additional target households:** The Project will focus on the 18 new barangays located within the 37 municipalities originally covered, in the six provinces in the CAR. These barangays will be selected by their respective Local Government Units (LGUs) based on the following criteria: (i) new barangays within the original 37 CHARMP2 municipalities; (ii) limited access to social services, inadequate road access; and (iii) with limited or no development assistance received under other projects. Interventions financed under the Additional Financing, are expected to benefit an additional 19,055 households (or 14,000 without double-counting).

**Components under Additional Financing:** The additional financing will continue to support the on-going development interventions of CHARMP2 within the additional 18 barangays and shall retain its original component which are: (i) Social Mobilization and Participatory Investment Planning; (ii) Community Watershed Conservation, Forest Management & Agroforestry; (iii) Agriculture, Agribusiness and Income Generating Activities; (iv) Rural Infrastructure Development; and (v) Project Management and Coordination.

**Project costs:** Based on current prices, the total project cost was estimated at USD 13.127 million. The Additional Financing will be financed through a loan from IFAD of USD 10.333 million (78.7% of total project cost), a GoP contribution of USD 1.972 million

(15% of total cost). The LGUs and beneficiaries<sup>1</sup> contributions will respectively amount to USD 0.736 million (5.6 %), and USD 0.087 (0.7%).

**Project benefits:** Direct benefits from the Additional Financing are expected to reach an incremental aggregate of 14,000 households (or 70,000 individuals). The Rural Infrastructure is expected to benefit: (i) 720 households through the rehabilitation of their communal irrigation systems; (ii) 9,757 households through road rehabilitation; (iii) 2,400 households through the construction of foot paths and foot bridges; (iv) 540 households from the establishment and maintenance of Agroforestry Plots; (v) 1,177 households through the construction of Domestic Water Supply systems; (vi) 341 households through the construction of Tramlines. The LAF is expected to provide start-up capital to 90 LIGs, and benefit a total of 1,350 households. In addition, the project shall empower the beneficiary communities and organizations including 189 LIGs/Irrigators Associations (IAs)/Barangay Water Supply Association (BAWASAs)/POs, 27 LGUs. The project as a whole yields an EIRR of 22%, a benefit-cost ratio (BCR) of 1.30, a Net Present Value (NPV) of USD 3.926 million. The economic parameters when subjected to a combination of a 2-year delay in project implementation, 10% decrease in benefit and a 10% increase in project cost shall still be viable with an EIRR of 16.24%, NPV of USD 0.498 million and a BCR of 1.05.

#### **PROPOSED AMENDMENT TO THE FINANCING AGREEMENT**

The existing loan agreements (IFAD Loan 749-PH and IFAD Grant 1030-PH) will be amended to include the provisions of the additional financing. The main changes in the project financing agreement relate to: (i) provision of the additional loan, which will be under ordinary instead of highly concessional terms and have a separate repayment schedule; (ii) revised Schedule 2 integrating the additional loan; and (iii) a two-year extension of the project completion and loan closing dates. The amendment will be carried out through exchange of letters, upon approval by the IFAD Executive Board (EB).

Logical Framework Matrix in revised format and Economic and Financial Analysis (EFA) in revised template are attached.

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<sup>1</sup> LGUs shall provide an equity of 10% of the total cost for civil works while beneficiaries of Communal Irrigation Systems (CIS) and Domestic Water Supply (DWS) shall borne 5% of their respective investment costs.

## Logical Framework

Narrative Summary	Key Performance Indicators					Means of Verification			Assumptions
	Indicator	Baseline	Original target*	Achieved (Dec 2015)	Revised AF Target	Source	Frequency	Responsibility	
<b>Goal:</b> Reduced poverty and improved nutrition in poor rural indigenous communities in the upland areas of CAR.	Prevalence of child malnutrition (chronic)	58%	29%	47% (2012 data)	36%	NSCB report, RIMS Survey report,	Completion	PSO	
<b>Project Development</b> <b>Objective:</b> Increase income of 59 000 farming households	<ul style="list-style-type: none"> <li>▪ Households with annual average income (in real terms): PHP20,000 - PHP40,000</li> <li>▪ Direct project beneficiaries (households)</li> </ul>	41%	25%	Not yet measured	25%	▪ National survey	- Gov Survey (2017)	-Phil Stat Agency	No major market or climate shocks
		0	11,300	45,000	59,000	▪ Annual outcome studies	- Annual	- PSO	
<b>Component 1 Outcomes: Social Mobilization and Land Security</b>									
IP/community organizations actively managing community sub-projects.	New People's Organizations and user groups that are administering and monitoring community projects	0	170 POs	662 POs	792	ODM, Thematic studies	Annual	SMPIP	Participatory processes adequately channel priorities of poor households
IPOs sustainably manage Ancestral Domains	Ancestral Domain Titles secured to IPs in 8 ancestral domain areas	0	8	1	8	LGU reports		NCIP	
<b>Component 1 Outputs:</b>									
Mobilize/strengthen COs and Groups in 18 new barangays	People's Organization (PO), Irrigators Associations, BAWASAs, LIGs and BPMETs formed & trained	0	170	1021	1210	Registration, LGU resolutions, trainer report	Annual	SMPIP, LGUs	Gov. institutions responsive to participatory processes
ADSDPP formulated in ancestral domains & CADTs approved	ADSDPPs formulated, CADTs approved	0	28	7	28	LGU reports, NPIC resolutions	Annual	NCIP, LGUs	No political interference
<b>Component 2 Outcomes: Agroforestry and Watershed Management</b>									
Communities adopting improved watershed practices	Communities with increased vegetation	0	170	164	170	Satellite imagery, MLGU report	Annual	ENRO, PSO	Good practices sustained and replicated
Households practicing sustainable agroforestry	HH with increased productivity of agroforestry plots	0	5,100	5,212	5640	Outcome surveys	Annual	PSO	

Narrative Summary	Key Performance Indicators					Means of Verification			Assumptions
	Indicator	Baseline	Original target*	Achieved (Dec 2015)	Revised AF Target	Source	Frequency	Responsibility	
<b>Component 2 Outputs:</b>									
Community watersheds reforested	Watershed reforested (ha)	0	8,500	8,565	8,565	Reforestation Committee	Annual	PSO	Consistent application of protocols with NCIP and IP communities
Agroforestry plots established on idle land	Agroforestry plots established (ha)	0	2,005	2,166 ha	2,275	Reforestation Committee	Annual	PSO	
<b>Component 3 Outcomes: Agriculture, Agribusiness &amp; Income-generating Activities</b>									
Farmer groups have increased sales income	No. of farmer groups with increased net income	0	507	160	597	Outcome/assessment surveys	Annual	AAIGA/PMEU	
<b>Component 3 Outputs:</b>									
Livelihood Interest Groups (LIG) access financial and related support services	Farmers receiving LAF, BDS, FBS coaching and mentoring	0	7,605	17,197	18,547	LIG business plan & staff reports	Monthly	AAIGA	LIGs continue to expand in membership and scope
<b>Component 4 Outcomes: Rural Infrastructure</b>									
Households in 188 barangays have better access to agricultural areas, markets, services and drinking water	Travel time reduced					Walking: 30 mins. Hauling: 45 mins.			
						Walking: 18 mins. Hauling: 30 mins. Roads:-25%			
18 MLGUs operate & maintain community access infrastructure	Barangays allocating adequate budget for O&M	0	170	137	155	Barangay Annual Inv. Plan	Annual	PSO	No major natural disasters
<b>Component 4 Outputs: (original targets reduced by ADB financing gap)</b>									
Roads, footpaths, footbridges, tramlines, domestic water supply and community infrastructure constructed/rehabilitated	Access roads & footpaths rehabilitated/constructed (km)	0	368	432	559	LGU reports	Annual	PSO	Availability of LGU & community contributions
	Community infrastructures constructed	0	46	78	137	BPMET & LGU reports	Annual	PSO/BPMET	
Communal irrigation schemes rehabilitated	Communal irrigation schemes rehabilitated (ha)	0	943	902	1,384	BPMET & LGU reports	Annual	PSO/BPMET	

\* As revised at MTR

## EFA SUMMARY TABLES

YEAR	FINANCIAL NET INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-124,925.00	-29,500.00	-39,910.00	-13,360.00	-4,000.00	-9,000.00	-220,695.00
2018	-59,637.50	-28,705.56	-23,090.83	-732.42	-8,000.00	1,777.83	-118,388.47
2019	72,094.96	47,232.22	11,009.46	7,392.87	2,679.60	2,311.17	142,720.28
2020	72,117.54	47,232.22	11,020.85	7,410.48	2,679.60	2,488.96	142,949.64
2021	72,140.72	47,232.22	11,032.54	7,428.13	2,679.60	2,488.96	143,002.16
2022	72,164.51	47,232.22	11,044.53	7,445.81	2,679.60	2,488.96	143,055.62
2023	72,188.92	47,232.22	11,056.84	7,463.53	2,679.60	2,488.96	143,110.06
2024	72,213.99	47,232.22	11,069.48	7,481.28	2,679.60	2,488.96	143,165.51
2025	72,239.71	47,232.22	11,082.45	7,499.06	2,679.60	2,488.96	143,221.99
2026	72,266.12	47,232.22	11,095.76	7,516.88	2,679.60	2,488.96	143,279.53
2027	72,293.23	47,232.22	11,109.43	7,534.73	2,679.60	2,488.96	143,338.16
2028	72,321.06	47,232.22	9,616.91	3,017.47	2,679.60	2,488.96	137,356.21
2029	72,349.63	47,232.22	-	-	-	2,488.96	122,070.81
2030	72,378.96	47,232.22	-	-	-	2,488.96	122,100.14
2031	72,409.08	47,232.22	-	-	-	2,488.96	122,130.26
2032	72,440.00	47,232.22	-	-	-	2,488.96	122,161.18
2033	72,471.75	47,232.22	-	-	-	2,488.96	122,192.93
2034	72,504.36	47,232.22	-	-	-	2,488.96	122,225.53
2035	72,537.84	47,232.22	-	-	-	2,488.96	122,259.01
2036	72,572.22	47,232.22	-	-	-	2,488.96	122,293.40
2037	72,607.53	47,232.22	-	-	-	2,488.96	122,328.71
2038	78,781.30	47,232.22	-	-	-	-	126,013.52
<b>TOTAL</b>	<b>1,268,530.90</b>	<b>886,438.87</b>	<b>46,137.43</b>	<b>56,097.81</b>	<b>14,795.96</b>	<b>39,890.22</b>	<b>2,311,891.18</b>
IRR	32.02%	61.79%	10.11%	36.99%	16.61%	25.44%	34.13%
NPV							
PHP	₱188,426.98	₱176,190.23	₱292.38	₱15,263.56	₱641.41	₱5,066.44	₱375,078.07
USD	USD 4,187.27	USD 3,915.34	USD 6.50	USD 339.19	USD 14.25	USD 112.59	USD 8,335.07
BCR	1.516860342	2.515891936	0.863110906	1.674574823	1.045550748	1.647377835	
DB	₱552,987.70	₱292,418.98	₱66,270.91	₱37,890.49	₱14,722.72	₱12,892.52	
DC	₱364,560.72	₱116,228.75	₱76,781.45	₱22,626.93	₱14,081.30	₱7,826.09	

YEAR	ECONOMIC NET INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
2019	(104,708.39)	(24,726.02)	(33,451.36)	(11,197.95)	(3,352.68)	(7,497.00)	(184,933.40)
2020	(48,291.51)	(21,361.29)	(19,488.75)	(1,732.31)	(6,705.36)	1,480.93	(96,098.29)
2021	72,142.36	40,648.44	5,957.59	4,202.53	1,545.90	1,925.21	126,422.03
2022	72,161.17	40,648.44	5,964.42	4,213.10	1,547.47	2,073.30	126,607.91
2023	72,180.48	40,648.44	5,971.44	4,223.69	1,549.08	2,073.30	126,646.43
2024	67,056.03	40,648.44	5,978.63	4,234.30	1,550.73	2,073.30	121,541.43
2025	39,977.28	29,126.61	5,986.02	4,244.93	1,552.43	2,073.30	82,960.58
2026	72,241.51	40,648.44	5,993.60	4,255.58	1,554.17	2,073.30	126,766.61
2027	72,262.94	40,648.44	6,001.38	4,266.25	1,555.96	2,073.30	126,808.28
2028	72,284.94	40,648.44	6,009.37	4,276.94	1,557.80	2,073.30	126,850.79
2029	67,163.25	40,648.44	6,017.57	4,287.65	1,559.68	2,073.30	121,749.90
2030	40,087.35	29,126.61	5,980.89	4,298.41	1,561.61	2,073.30	80,468.58
2031	72,354.50	40,648.44	-	-	-	2,073.30	115,076.24
2032	72,378.94	40,648.44	-	-	-	2,073.30	115,100.68
2033	72,404.02	40,648.44	-	-	-	2,073.30	115,125.76
2034	67,285.51	40,648.44	-	-	-	2,073.30	110,007.25
2035	40,212.88	29,126.61	-	-	-	2,073.30	71,412.79
2036	72,483.39	40,648.44	-	-	-	2,073.30	115,205.13
2037	72,511.28	40,648.44	-	-	-	2,073.30	115,233.02
2038	72,539.92	40,648.44	-	-	-	2,073.30	115,261.66
<b>TOTAL</b>	<b>1,036,727.84</b>	<b>651,019.14</b>	<b>6,920.81</b>	<b>26,913.53</b>	<b>5,476.80</b>	<b>31,155.25</b>	<b>1,758,213.38</b>
IRR	35.74%	64.45%	2.05%	23.41%	8.18%	25.36%	34.85%
NPV							
PHP	₱137,758.19	₱108,234.99		₱5,611.60		₱5,073.22	₱344,962.66
USD	USD 3,061.29	USD 2,405.22		USD 124.70		USD 112.74	USD 7,665.84
BCR	1.677889543	2.767013186	0.653806182	1.360168174	0.81245933	1.630480509	
DB	₱450,938.74	₱224,147.97	₱39,907.20	₱26,583.38	₱9,087.22	₱10,629.32	
DC	₱268,753.53	₱81,007.19	₱61,038.27	₱19,544.19	₱11,184.83	₱6,519.13	

Item	Indicators							
	NPV (PHP in '000)	SI	NPV (USD in '000)	SI	BCR	SI	IRR	SI
Base case	₱176,680.08		USD 3,926.22		1.30		22.46%	
A. 10 percent decrease in benefit	₱99,474.08	43.70	USD 2,210.54	43.70	1.17	10.00	19.32%	13.96
B. 20 percent decrease in benefit	₱22,268.09	87.40	USD 494.85	87.40	1.04	20.00	16.00%	28.75
C. 10 percent increase in cost	₱114,098.12	35.42	USD 2,535.51	35.42	1.17	9.51	19.47%	13.32
D. 20 percent increase in cost	₱51,516.16	70.84	USD 1,144.80	70.84	1.07	17.37	16.89%	24.81
E. 2-yr project delay	₱126,622.61	28.33	USD 2,813.84	28.33	1.28	1.00	22.30%	0.70
F. Combination of A, C and E	₱22,435.78	87.30	USD 498.57	87.30	1.05	19.38	16.24%	27.69
G. Combination of B, D and E	(₱81,751.05)	146.27	(USD 1,816.69)	146.27	0.85	34.56	10.59%	52.87

# **Additional Financing to the Republic of the Philippines for Scaling Up the Second Cordillera Highland Agricultural Resource Management Project (CHARMP2)**

## **I. Introduction and rationale**

### **A. Country context**

1. The Philippines archipelago comprises 7,107 islands, with a total land area of 300,000 sq km, and a coastline of 236 000 km. Its islands are characterized by mountainous interiors and narrow coasts, although larger ones feature a broad array of hills, plateaus, and plains. Though there are extensive lowlands on the largest islands, approximately 65% of the land area is considered uplands, where pockets of poverty are higher. Overall, Filipinos' per capita income is \$465.15 (2012). Out of the total population of 92 million people, rural population accounts for 54.7% of total.

2. Despite impressive national economic growth over the last decade, the country's poverty has not declined significantly over the period. Measured as the share of population living under \$1.25-a-day, extreme poverty was estimated at 19.2% in 2012 compared to 21.6% in 2003. Limited progress on poverty reduction is partly explained by the number of people living just above the poverty line, whose livelihoods remain highly vulnerable to climatic, disaster, financial and price shocks.

3. Three-quarters of the poor in the Philippines depend on agriculture and fishing activities. Poverty incidence is higher in rural areas, where more than 50% of households are still below the official poverty line, compared to 27.9% nationally (2012). Poverty incidence is more acute in the highlands, mainly due to low farm productivity, limited access to rural advisory services, the unavailability of alternative employment opportunities, and very limited access to basic social services.

4. The CHARMP2 Project, on-going and implemented since 2009, has reached 45,000 households directly, exceeding the original targeted number of 12,530 household beneficiaries; beneficiaries live in 37 highland municipalities and across 170 barangays of the CAR. Barangays were selected based on poverty categorization criteria, among the more disadvantaged and impoverished ones, compared to the municipal and regional averages. The project approach has been to nurture community planning as a foundation for participatory interventions on: (i) environmental stewardship and sustainable watershed management, (ii) upgrading infrastructure to address access to markets, natural resources and services, and (ii) train and organize farmers for higher productivity, improved agri-business management and more strategic marketing in niche commodities that reflect the comparative advantages of diverse localities in the mountain zone.

### **B. Rationale for Additional Financing**

5. The Government of the Philippines has requested an Additional Financing and extension completion date for the CHARMP2, with the purpose of: (i) filling the financing gap of USD 10.0 million from ADB under the original CHARMP2; (ii) expanding project benefits to households by carrying out activities in poorer, hard-to-reach areas within the project area; (iii) generating evidence and knowledge capture for scaling up IFAD-funded approaches in poor mountainous areas of the Philippines; and (iv) consolidating achievements and strengthening local capacities in existing project areas.

6. Although CHARMP2 had been considered a problem project until 2014, IFAD has worked closely with the Government of Philippines to resolve bottlenecks in access to investment capital, to improve fiduciary management of community grants, and to expedite flow of funds.

As a result, project delivery has accelerated substantially. This is evidenced by: (i) number of households reached exceeding original targets by an estimated 30,000 families; (ii) 25% increase in disbursement during the past 12 months (and 100% expected disbursement by end of 2016); (iii) satisfactory project implementation rating by the last IFAD Supervision Mission (March 2015); and (iv) satisfactory fiduciary management rating, with 2014 audit report submitted on time and without qualification, and no material violations of the Financing Agreement covenants.

7. The activities proposed for Additional Financing are fully consistent with project objectives and components, comply with IFAD policies, and envisage no substantive changes in design. Thus the results framework for the original finance continues to apply, but has been fine-tuned to better include outcome targets, and sources of reporting, as per IFAD's new log frame format. The estimated EIRR for the additional finance amounts to 22%, and the benefit-cost ratio is estimated at 1.30.

8. The DA's success in turning around project delivery and attaining satisfactory performance provides demonstrates its commitment to fulfilling CHARMP2's objectives of reducing poverty among IP's in CAR. To address the shortfall in municipal counterpart funding for infrastructure, the DA allocated additional funds from its regular resources to meet co-financing commitments under the loan. The DA recognizes the importance of project achievements in assisting targeted communities to achieve their priority development needs. The intervention's relevance is also widely appreciated by decentralized municipal and provincial government agencies in CAR. The DA and its partners are keen to now build on the achievements of CHARMP2, to better address the needs of rural communities in the region, by: (i) expanding project activities to additional barangays; (ii) consolidating preliminary outcomes into sustained, long-term benefits for the target group; and (iii) mainstreaming project processes within Government programming, including the DILG Bottom-up Planning Initiative and the DA's own Philippines Rural Development Project, but also in Annual Investment Planning processes of decentralized Government units.

9. This Additional Financing proposal aims at (i) filling a financing gap (after a prospective loan from ADB was redirected to the Department of Environment and Natural Resources); and (ii) scaling up the approaches piloted by CHARMP2, deemed most appropriate in tackling the unique challenges facing indigenous communities in mountainous areas. It seeks to expand, replicate, and sustain CHARMP2's achievements with respect to its approaches, processes, and activities to enhance beneficiaries' outreach and further contribute to the reduction of poverty in CAR. To ensure the project's experience in overcoming challenges in the country's depressed mountain zones is not a one-off event but the stepping stone toward a wider and sustainable impact, the Additional Financing places significant emphasis on generating and disseminating evidence from CHARMP2 innovation and learning. The activities supported under the Additional Financing shall benefit an additional 14,000 farm households, or a cumulative 59,000 households (295,000 individual beneficiaries).

10. CHARMP2 Additional Financing eligibility criteria are met through the following:

- (i) CHARMP2 was not classified as a problem project in the latest portfolio review, and implementation of recommended actions by the last IFAD Supervision Mission (March 2015) is on track;
- (ii) loan disbursement has reached 83,14% and is in line with the projected disbursement as measured by the disbursement profile;
- (iii) fiduciary management is compliant with IFAD requirements and was rated as satisfactory (5) in the last Project Status Report;
- (iv) the last portfolio review has determined that the on-going project is compliant with all legal covenants, that the submission of the audit reports is satisfactory to IFAD, and the Audit Report for 2014 has been submitted on time without qualification.

### **C. Eligibility Criteria for Additional Financing**

11. The CHARMP2 is eligible to receive additional finance in the form of top-up loan as it meets the conditions specified in the PB/2014/Rev.1:

- (i) An initial letter from the Department of Agriculture as Lead Project Agency was submitted to IFAD on 18 January 2016. The formal request letter from the borrower shall be submitted as soon as the proposal is approved by the Government of the Philippines;
- (ii) The interventions to be financed by the Additional Financing loan are consistent with the on-going Project goals and objectives;
- (iii) The Additional Financing will be used to finance economically viable activities where incremental cost-benefit ratio is estimated at 1.27. For instance, livelihood interventions, agroforestry, benefits from rural infrastructure, employment generation and skills training, income generating activities (IGA) will accrue to benefits for poor rural households;
- (iv) The Additional Financing will be used to finance activities resulting in incremental beneficiaries' outreach, in line with the Appraisal of the CHARMP2, and measured by assessing unit cost per beneficiary. The average investment size is at USD 12,864 under the Additional Financing, compared to USD36,559 at Appraisal;
- (v) The Additional Financing will support implementation of activities in compliance with IFAD policies related to targeting, gender, rural finance, environment and climate change (*See Appendix 10: Compliance with IFAD Policies for details*);
- (vi) The Additional Financing is integrated in the CHARMP2 Logframe in its new format as recommended by IFAD in order to monitor results holistically; and
- (vii) The Additional Financing proposal has been endorsed by IFAD's Country Programme Management Team, and Quality Enhancement and Quality Assurance processes.

## II. Description of On-going Project

### A. Project area and target households

12. The CHARMP2 covered 170 barangays in 37 highland municipalities in the six provinces of CAR: Abra, Apayao, Benguet, Ifugao, Kalinga and Mountain Province. These barangays were specifically chosen on the basis of poverty categorization, taking into consideration not only national standards but also the different criteria set by each of the provinces and the communities' perception on poverty.

13. More than 90% of the target groups are indigenous people consisting of many tribes who live in the mountainous area and are involved in agriculture as the main economic activity. At appraisal, the project was estimated to cover 12,530 households. The incidences of poverty in these target groups exceeded 50% in most upland and highland municipalities in CAR, a significantly higher level of poverty than that in lowland CAR and the other regions in Northern Luzon.

### B. Project development objectives and outcome/ impact indicators

14. CHARMP2 was implemented to contribute to poverty reduction among rural women and men, especially in highland indigenous people's communities in the CAR. To achieve this development goal, the project aims to: (i) *increase farm family income of the rural poor through sustainable agricultural development*; and (ii) *enhance quality of life of the rural poor through improving land tenure security, food security and watershed conservation*.

15. As a measurement of achievement of its development objectives, CHARMP2 has helped reduce the number of households earning incomes below the target areas' annual averages by at least 50% over the baseline, reaching at least 51,165 direct beneficiaries. The mid-term Annual Outcome Survey found a 45% reduction in the number of households with composite assets that would have classified them among the poorest 20% at baseline. Further, incidence of child acute malnutrition diminished, from 11.1% in 2009 to 8.5% in 2012 for boys; and from 11.1% in 2009 to 7.1% in 2012 for girls. Rural infrastructure investments have resulted in up to 66% travel time reduction, safer travel conditions and year-round

accessibility. About 12,900 households have directly benefitted from improved accessibility to water for irrigation and domestic use. Farmers' groups have improved marketing of both traditional and cash crops, resulting in improved access to markets, reduced marketing costs, and greater returns to farmers.

## **C. Project component description**

### **C.1. Social Mobilization & Participatory Investment Planning and Land Titling (SMPIPLT)**

16. SMPIPLT aimed to empower 170 communities through strengthening the management capacity of IP organizations and groups including traditional organizations and local government units. It promoted active participation of the communities in planning, implementation, and monitoring and evaluation of community development subprojects.

17. It has two subcomponents: (i) community mobilization; and (ii) facilitation of ancestral domain titling. The first subcomponent included: (a) social preparation of 170 barangays; (b) facilitation of 170 Participatory Project Investment Planning (PIIP); and (c) Participatory Monitoring and Evaluation involving the formation and capacitation of BPMETs in each of the 170 barangays. The second subcomponent included: (a) activities for the preparation of 18 ancestral domain sustainable development and protection plans (ADSDPP); (b) issuance of 18 CADT; and (c) issuance of 3,780 Certificate of Ancestral Land Titles (CALT) implemented by the NCIP-CAR.

18. The Midterm review mission found the performance of the land tenure subcomponent to be unsatisfactory due to institutional constraints besetting NCIP and recommended the deletion of the CALT as deliverable, and revision of Ancestral Domain Sustainable Development and Protection Plan (ADSDPPs) targets to 20, CADTS to eight.

### **C.2. Community Watershed Conservation, Forest Management & Agroforestry (CWCFMA)**

19. CWCFMA promoted the rehabilitation of watersheds in 170 target indigenous communities to enhance conservation of watershed cradles of the northern Luzon and provided them with opportunities to improve their socio-economic well-being. It aimed to support community members to conserve community watersheds through reforestation of identified critical water-sources for irrigation and domestic use of the community. The project also targeted to train extension workers at the 37 Municipal Agriculture Offices (MAO) in the promotion of agroforestry through Farmers Field Schools (FFSs) and equipped farmers to establish agroforestry plots in their idle lands.

20. This component has three subcomponents: (i) community watershed conservation and reforestation, (ii) promotion of agroforestry on slope areas, and (iii) documentation of indigenous forest management system. The component prioritized the critical micro-watersheds supplying irrigation and domestic water needs of the 164 Barangays with about 35,000 households. Under CWCFMA, about 204 Indigenous POs benefitted from the awareness raising on environmental conservation, management and protection planting 10,656 hectares of community watershed and idle lands for irrigation and domestic needs of the community.

21. During the Midterm Review Mission, the Innovative Watershed Conservation Financing Mechanism was discontinued considering the limited timeframe for implementation and the unavailability of a partner institution to assist CWFMA component. Five hundred (500) hectares in the reforestation sub-component were added to the 8,000 ha target, and direct procurement of plan table fruit tree species was included.

### **C.3. Agriculture, Agribusiness and Income Generating Activities (AAIGA)**

22. AAIGA promoted income generating activities through enhancement of existing livelihoods by formation of groups of households participating in production, marketing/consolidation and processing of priority commodities identified in the project sites, and strengthening these groups to improve production and be able to access markets and establish long-lasting market linkages. In order to ensure successful delivery of activities

under this component (targeted to reach 13,600 households), the Project sought the proactive participation and partnership of the Local Government Units. This entailed efforts in capacity building to extension staff of the Provincial and Municipal Agriculture Offices (OPAg, OMAg), on topics such as enterprise planning, business plan preparation and facilitation of the Farmer Business Schools.

23. The AAIGA component has four subcomponents: (1) Promoting Agribusiness and Marketing; (2) Provision of Agricultural Support Services; (3) Micro-finance and Income Generating Activities; and (4) Small Rural Small Enterprise Development.

24. During the midterm review, the Component was redesigned with three subcomponents: 1) Value Chain/Enterprise Analysis and Investment Planning (VCAIP/EAIP); 2) Value chain/enterprise development (VCD/ED- with four categories of interventions: a) *Production/productivity enhancement*; b) *Value adding/Product differentiation and small rural enterprise development*; c) *market access/linkage development*; and d) *rural finance*; and 3) Monitoring and Evaluation. In addition, the credit design of the rural finance intervention was changed to the LAF, which is a grant to livelihood interest groups to pursue their income generating activities.

25. In order to benefit more households, groups were also organized to undertake existing and potential off-farm and non-farm livelihood income generating activities in the target sites. Support was provided through trainings, learning visits, provision of equipment and start-up capital through the LAF. Partnerships were set up with relevant local institutions (Community Financial Institutions for the Livelihood Assistance Fund, organic farms, processing centers, State Colleges and Universities), National Government Agencies (Department of Trade and Industry, Department Of Labor and Employment) and with IFAD investments projects such as the CIP-FoodSTART and IRRI-CURE.

#### **C.4. Rural Infrastructure Development (RID)**

26. RID aimed to improve access to agricultural area, markets and services, reduce crop production losses, improve quality of crops produced, increase crop production in beneficiary areas and improve access to reliable and clean potable water. Under this component, set targets included the following: (i) improved transport to and from barangays, to reduce travel time by 40%, transport cost by 10%, and to increase traffic count for public utility vehicles by 30%; (ii) decreased crop damages by 25%; (iii) decreased collection/fetching time of potable water by 75%; and (iv) increased number of households served by DWS rehabilitated/constructed, by 75%.

27. The following were the targets at appraisal: 200 km roads, 37,750 lm footpaths; 3,600 has of communal irrigation systems, 160 units of domestic water supply benefitting around 7,000 HHs, 1,888 m of tramlines, and undetermined number of rehabilitated footpaths, footbridges, constructed community infrastructure (as the latter are demand driven). During the midterm review the targets were revised as to the following: 380 km roads; 37,750 lm footpaths; 1,725 lm footbridges; 20 units tramlines; Irrigation schemes with 2,570 ha of land; 150 DWS (100 units of level I and 50 units of level II) potable water systems; 15 unit each (solar dryers, green houses, and IP community halls); and 30 units of warehouses.

### **D. Project implementation performance, outreach and results**

#### **D.1. Overall**

28. The OFID Loan has been fully disbursed and fully liquidated in July 2015 while the IFAD Loan has a disbursement rate of 83.14% as of January 2016. The last IFAD Supervision Mission (26 February – 16 March 2015) rated the Project's implementation progress as satisfactory (5).

29. Overall, since initiation, the project has benefitted 45,000 households, exceeding the original target set at design for the project to reach 12,530 households beneficiaries. Among the Project's key physical achievements registered as of 31 December 2015 are the following: (i) 170 *barangay* participatory investment plans calibrated; (ii) 1,021 peoples' organizations/informal groups organized with 38,500 individual members; (iii) 10,735.82 ha planted with

seedlings (8,539.7 ha for reforestation and 2,166.12 ha for agro-forestry); (iv) 178 Farmer Field Schools completed, graduating 5,212 farmers; (v) kick-start grants (LAFs) provided to 644 beneficiary groups with 17,197 beneficiaries; (vi) 378.91 km of roads improved or rehabilitated; (vii) 54,398.04 linear meters of footpaths, 747 footbridges, community irrigation systems (covering 910.22 ha) and 43 domestic water systems (serving 6,055 rural households) constructed.

30. Despite the impact assessment has not been undertaken yet, initial outcomes have already been recorded by the Project. To-date, 1,021 POs have been empowered to manage several projects (livelihood, reforestation and agroforestry projects, communal irrigations systems and domestic water supply systems). One CADT has been completed, and was approved by the NCIP; two additional certificates are currently undergoing final review process. Micro-watersheds were reforested and agroforestry plots were established; these are managed by 204 POs. Improvements in beneficiaries' livelihoods and incomes are gradually being reported, including among members of the 644 livelihood interest groups. Project-supported investments in roads construction/rehabilitation, foot trails and footbridges, have resulted in beneficiaries' reduced travel time (33% and 66% in Kapangan and Benguet), safer conditions mainly due to year-round accessibility. Accessibility to water for irrigation and domestic use has also been improved for about 12,900 households.

31. With the Project's support, crops that were scarcely found in local markets prior to project intervention, are currently undergoing primary processing at local level, and are being placed in local markets. For instance, prior to the Project commencement, the LIG of Ifugao recorded heirloom rice's traded volumes as low as 769 kg through 14 market outlets, and sales volumes equalled USD1,637. Through Project-extended LAF assistance, as well as concerted efforts in support of production, processing, and marketing, volumes traded increased to 9,577 kg through 23 outlets, and sales reached USD 20,377. Support to the coffee sector is also yielding promising outcomes. Prior to Project support, and as of 2014, the LIG in Benguet was selling 3,200 kg of parchment coffee to scattered buyers, with sales totalling USD 11,148. As of 2015, Project-extended support enhanced the LIG's ability to increase market linkages: agreements with three main buyers are now in place, sales volumes have increased to 6,426 kg, and the value has doubled to USD 23,244. The LIG in Benguet is currently also equipped to engage in the coffee roasting process, and the first sale of roasted coffee has yielded USD 1,879.

32. Women participation in Project-supported interventions is satisfactory, with a range of 40% to 60% women active participation in various community activities recorded across the 170 barangays. To-date, 45% of women (against an appraisal target of 30%) are covering leadership positions in local organizations. Out of a total PO membership of 1021 people, 53% are women (against an appraisal target of 40%). Out of a total LIG membership of 17,300 people, 64% are women. Women's participation has also been substantial in: trainings (79% for the livestock production and technologies, 69% for the income generating activities, 70% for the enhancement of business and entrepreneurship skills, 59% in agro-forestry farmers field schools); and marketing groups (64%). In addition, out of the 170 BPMETs organized and trained (with a total 1,500 member), 40% are women, who are currently performing tasks and activities that traditionally pertain to the male population segment. Increased women's participation in the social dimension has also encompassed a recent increase in cases of female-initiated complaints filed to authorities. Throughout the project implementation, women have shown proactive participation in the implementation of rural infrastructure projects, such as in the construction of water and irrigation systems.

33. What remains to be accomplished as of 31 January 2016 for the one year extension in 2016 are completion of the final processes of some outputs such as the third year maintenance of some reforestation and agroforestry sites by people's organizations; the completion of the one-year cycle by 266 (out of 644) livelihood interest groups (LIGs) in implementing their business plans funded by the LAF; and the completion of some 9 infrastructure projects undergoing final touches.

34. Attainment of outcomes set at design will be achieved through the following activities planned for implementation in the forthcoming period: (i) coaching and mentoring of farmers' organizations; (ii) provision of trainings on financial management and operation & maintenance of infrastructure projects; and (iii) monitoring of the projects funded under LAF.

35. To mainstream project activities, joint planning is being carried out by concerned partner LGUs and POs. This includes handling over of completed infrastructure projects for their continued operation and maintenance including the earmarking of available budgets by LGUs.

#### **D.2. Social Mobilization & Participatory Investment Planning and Land Titling (SMPIPLT)**

36. One hundred seventy PPIPs were prepared and calibrated yearly by the 170 Project communities. There were 1,021 POs and LIGs were organized, surpassing the 170 POs original target with 38,500 individual members (96% IPs) managing LAFs, reforestation subprojects, agroforestry, community irrigation schemes and domestic water supply schemes. Six hundred sixty two of these POs were accredited by government regulatory bodies and have a total membership of 30, 000 persons, of which 53% are women. Out of the women members, 45% are covering the highest leadership position (President), thus surpassing the original target of 30% women in leadership positions. An additional 8,500 persons (69% women) are members of informal LIG. In addition, 170 BPMETs were organized in all Project covered barangays composed of 1,500 members (40% female) who were active in monitoring the different CHARMP2 subprojects. LGUs recognized the contribution of BPMETs in ensuring timely/quality execution. Several of these LGUs have already institutionalized BPMETs in their localities.

37. The assessments of 178 POs showed a substantial diversity in the strength of POs. While most are accredited and some are reasonably mature, others are still weak and cannot be expected to continue on their own. Capacity building included trainings on organizational development and management, leadership trainings, and skills trainings under the other Project components. The successful social mobilization and participatory investment planning approach, which has been highly valued by target communities, requires further support for integrating and mainstreaming into local development planning (LGUs and other DA, DENR projects).

38. NCIP approved one CADT out of the eight targets, and completed 6 ADSDPPs and documentation of 15 indigenous people's systems in ancestral domains from a target of 20 each. The NCIP is expected to meet the set milestones during the remaining implementation period.

#### **D.3. Community Watershed Conservation, Forest Management & Agroforestry (CWC/FMA)**

39. One hundred forty six POs planted tree seedlings on 8,490 has as of December 2015, nearing the 100% reforestation target set at design (8,500 has). Fruit crops and coffee were planted on 2,166 has of farmers' agroforestry plots exceeding the target by 10%. Intensive care and maintenance of these planted seedlings are currently on-going until the mid of 2016 to ensure high survival rate of the seedlings. One hundred seventy six of the actual Agroforestry Farmer Field School (AFFS) undertaken has exceeded the set target (170). These were undertaken in one hundred sixty three (163) barangays, graduating 3,110 women and 2,102 men. In addition, a compendium of completed researches on Indigenous Forest Management systems and Practices (IFMSP) in the Region was packaged. Finalizations of six indigenous forest management systems and practices documentation is on-schedule for completion by May 2016. To sustain the reforestation and agroforestry projects after CHARMP2, five provincial sustainability plans were prepared and seven municipal sustainability plans were drafted.

40. The watershed sustainability planning process included assisting communities in a communal tribal watershed covering areas in the Project municipalities of Tubo, Abra and Sagada and Besao in Mt. Province. The area is the source of water of a completed irrigation/domestic water supply subproject. In the course of implementing the subproject, there were conflicts over water source ownership. The Project assisted in settling the conflict

and convinced the concerned communities to consider the area as a common resource base. Initially, the activities undertaken included identifying the barangays within the watershed and forging an informal agreement among the communities and municipal local government units to come up with an integrated watershed management plan that ensured the area as a sustainable source of irrigation and domestic water. Due to lack of funding under the on-going project, planning activities were discontinued.

41. Through Project support, 164 *barangays* or communities are practicing indigenous forest management systems in managing watersheds, e.g. *Lapat* in Abra, *Imong* in Kalinga, *Batangan* and *Tayan* in Mountain Province. Forest cover has increased by 8,490 has and 2,166 has of idle lands was developed for agroforestry benefitting 5,212 households.

42. Maintenance and protection of the reforestation plantations and monitoring of the reforestation project is necessary to ensure high survival of the trees and sustainability of the project. Idle lands will be developed through sustainable agroforestry systems, which will increase household incomes.

#### **D.4. Agriculture, Agribusiness and Income Generating Activities (AAIGA)**

43. The Mid Term Review redesign and the one-year project extension have been conducive towards accomplishing targets under this component. The surge in accomplishment happened with the release of the Livelihood Assistance Fund. Six hundred forty four LIGs were organized, trained and were provided with start-up capital ranging from PhP 50,000 to PhP500,000 for livelihood subprojects from the LAF. The 644 LIGs reached 17,197 beneficiaries (6,241 male and 10,956 female) throughout the 170 barangays.

44. To strengthen the LIGs, 76 farmer business schools, 180 technology demonstrations, 179 production trainings, and 141 skills trainings were implemented. Promotion of new technologies was facilitated through the organization of learning visits attended by 2,588 LIG representatives. Currently 74 LIGs are engaged in production and marketing of processed products (coffee, rice/sugarcane/fruit wines, heirloom rice, organic vegetables, muscovado sugar). Out of the 644 LIGs reached through LAF, 163 (25%) have already reached one year business operation, have repaid the LAF to the CFIs, and are showing indications of attaining outcomes in terms of sales and profits (average of 13% ROI). The remaining LIGs will be assessed by end of 2016. As reported, risk of payment default had been estimated to be minimal. This could be attributed to community involvement and participatory approaches introduced.

45. Despite the positive implementation feedback, transferring the LAF to the LIGs without monitoring and further coaching may compromise initial gains. While the LGUs committed to continue with what was started, it will still be necessary for the Project to spearhead monitoring and entrepreneurship coaching of LIGs to ensure that Project investment is nurtured. Furthering the initial gains and expanding outreach from 17,197 beneficiaries to 18,547 with the addition of 1,350 rural poor households in the new barangays is central to the proposed scaling up.

#### **D.5. Rural Infrastructure Development (RID)**

46. Key achievements of this component, and respective number of households (HHs) reached include: (i) rehabilitation of 378 kms enhanced farm-to-market roads, benefitting 59,484 HHs; (ii) constructed 52,910 linear meter of footpaths, benefitting 10,639 HHs; (iii) construction of 747 linear meters of footbridges, benefitting 1,425 HHs; (iv) 1 unit tramline constructed, benefitting 95 HHs; (v) constructed/rehabilitated 902 Communal Irrigation Systems (CIS), benefitting 6,914 HHs; (vi) 43 units of domestic water supply systems, benefitting 6,055 HHs; and (vii) 34 units of community infrastructure constructed, benefitting 7,640 HHs.

47. The BPMET outcome monitoring reported: (i) reductions in travel time by 30% to 60%; (ii) fewer transport accidents; (iii) lesser spoilage of perishable produce, e.g., vegetables, thereby generating higher income of products; (iv) increased number of households' access to potable water and reduced travel time to fetch water (common tap stand).

48. The delay in the implementation of RID subprojects due to the in availability of LGU counterpart funding was solved with DA's increasing its share and subsequently by firming up the LGU counterpart to 10% regardless of the LGU income status.

### **III. Description of Projects under Additional Financing**

#### **A. Project Geographical Coverage and Targeting for Additional Financing**

49. Under the Additional Financing, the Project will focus on 18 new barangays within the geographical coverage of 18 municipalities originally covered in CHARMP2 in the six provinces of the CAR. These barangays will be selected by their respective LGUs based on the criteria used during appraisal as follows: a) lack of access to social services like potable drinking water systems, electricity, sanitation, health services and inadequate road access; b) lack of on-going development projects; c) limited areas under irrigation; (d) size of communities (headcounts). Since the 18 target barangays for the proposed additional financing are new, each *barangay* will have the opportunity to avail of full project support package or at least one subproject type from all the components. The targeting approach is described under each of the Project Components. The activities for the additional financing shall benefit an incremental aggregate of 19,055 farm households, or a cumulative 115,221 households (half a million individual beneficiaries).

50. Implementation partners in the new barangays will be identified, organized and capacitated using the selection criteria of each operational component. These criteria will be presented during the initial orientations on the Project. Community assemblies and the community members will decide and choose among themselves those who are eligible as beneficiaries and partners in implementation.

51. The original 170 barangays will be further supported in terms of institutionalizing the participatory approaches in planning, implementation and monitoring used in CHARMP2 for the vertical scaling up. Evaluations will be conducted at the *barangay*, municipal and provincial levels. Tailored support will be provided to old barangays from the provinces of Apayao, Ifugao and Kalinga based on identified needs. These provinces were not included in the first phase of the CHARM Project, which first introduced participatory processes in project implementation, and have received fewer subprojects from the CHARMP2. Details of description of project components are found in Appendix 5.

##### **A.1. Social Mobilization & Participatory Investment Planning (SMPIP)**

52. A.1.1. Selection Criteria: The proposed project will cover 18 new barangays in Project covered municipalities of the six provinces of the Region. An average of seven new peoples organizations and groups per *barangay* will be organized and strengthened as partners in Project implementation. Membership to these POs/groups will be determined during community assemblies from among the poorest families, and with particular consideration for interest groups such as women, elderly, youth and the landless. Beneficiaries will be chosen by the community members themselves, considering the criteria under each operational component. A BPMET will also be formed in each of the new *barangay*. Its membership will be chosen from among volunteers during the first community assemblies. As with the current Project, women participation will be given special attention requiring at least 40% of their membership in organizations and 30% in leadership positions.

53. A.1.2.Approach: This component represents the backbone of other Project components. It ensures that all members of the community, including the poor and women, participate in planning, execution and monitoring.

54. Community based organizations in the 18 new barangays will be identified and organized to work with the Project in implementing the different subprojects. They will include for every *barangay* one PO for the agroforestry, at least five LIGs for the LAF, one IA and BAWASA for the irrigation system or the domestic water system and one BPMET for the monitoring and evaluation. In addition, the LGUs will be supported to include in their formal structures the

BPMETs especially in the nine old barangays supported under the original project (for consolidation); these will be assisted to undertake the monitoring and evaluation of subproject implementation.

55. Implementation of all activities will occur in close consultation with the concerned communities and other stakeholders. As an integral part of the participatory approach of the Project and in order to satisfy requirements of the NCIP, the FPIC of the target communities will be done prior to activities' commencement in the new barangays. Facilitation and preparation of the PPIPs will be done directly by Project staff.

56. Because IPs compose around 96% of the beneficiaries in the Project communities, IKSPs are the norm in allocating land use and access by which the Project abides. Strictly with regards to FCIP process, this is a requirement by the Indigenous Peoples Rights Act of 1997 and its revised guidelines further described under NCIP Administrative Order No. 3, series of 2012. The issuance of the required Certificate Precondition (CP) for the Additional Financing will follow the process done for the original 170 barangays of the CHARMP2, which involved validation of the sub-project activities identified in the PPIPs. The CP is the document issued by NCIP, which attests to grant FPIC agreement by the concerned indigenous cultural communities or indigenous peoples. All the CHARMP2 barangays issued and forwarded to NCIP a Resolution of Consent as a result of the validations, and these became the basis for the CP issued to the CHARMP2. Validation was done as the sub-projects were identified by the communities themselves and included in their community plans. Importantly, the NCIP is a fundamental partner in the implementation of the Land Titling sub-component and a member of the Municipal Management Group and the Provincial Management Group, under CHARMP2. Implementation under the Additional Financing will continue nurturing this already successful partnership.

57. As with the on-going program, compliance to FPIC requirements will cover validation for the new barangays which will involve community consultations, specifically through interviews of elders/leaders and other community members conducted by the NCIP. In recognition of their mandates and roles, the NCIP will also be invited as facilitators during community assemblies for the orientation on the Additional Financing and preparation of the PPIPs. While the additional financing will not cover sub-projects on Land Titling, the NCIP will still be part of the MMG and PMG for the new barangays.

58. The PPIPs prepared in the 18 barangays will be adopted by the *barangay* and integrated in the Barangay Development Plan (BDP), which is the formally recognized plan of the *barangay*. Following normal local government process, the BDP goes up to the municipal level and is integrated in the municipal development plan, which in turn gets integrated into the provincial development plan.

59. As part of the vertical scale-up, mainstreaming of participatory approaches and the PPIPs in the current CHARMP2 areas will be assessed through meetings and consultations with key persons from the *barangay*, municipal and provincial local government units. Review of the implementation of activities identified in the PPIPs, especially the sustainability plans prepared by the barangays, will be included in the activity designs of related municipal or province-wide activities. From these evaluations, old barangays, particularly from the provinces of Apayao, Ifugao and Kalinga, will be identified for further continued and focused support under the Component.

60. A.1.3. Description: The SMPPIP component aims to deliver three outputs, and namely: (i) PPIPs established for 18 new barangays and updated for at least 9 existing barangays; (ii) mobilise/establish COs and Groups (REFO, Agro, LIGs, IAs, BAWASA, BPMET) in 18 new barangays; (iii) Groups and LGU staff trained and coached on implementation and monitoring. Activities' implementation will be undertaken in coordination with the other components, the PMEU, the Provincial Coordination Offices and the *barangay* development councils of each *barangay*.

61. Orientations, community assemblies, workshops, and focused group discussions will be conducted as part of the review and preparation of the PPIPs. The PPIPs prepared will be validated with the community before adoption by the LGUs at different levels.

62. A training needs assessment of the organizations working with the Project will be undertaken and will form the basis of the strengthening and capacitation activities for the organizations. This component shall focus on organizational development and management trainings; while *technical* trainings necessary to implement the different sub-projects will be supported within the associated component.

63. Capacities of partner LGUs and staff will be further strengthened with special focus on gender mainstreaming, targeting and participatory approaches.

64. The BPMET that will be formed will receive trainings relevant to project monitoring, with a long term view to outcomes monitoring. They will also be formed with the perspective of becoming permanent structures in local governance. As an added support, BPMET quarterly meetings will be funded by the Project to update on their activities and reports.

65. To assist in the implementation of the above activities, community development facilitators will be retained for each new *barangay*. An additional facilitator will also be hired per province to assist the old barangays considered for scale-up. A senior community development officer (CDO) supported by other staff shall be required at the PSO.

## **A.2. Community Watershed Conservation, Forest Management & Agroforestry**

66. A.2.1 Selection criteria: The criteria in the selection of the project site for agroforestry include the following: (i) availability of idle lands of at least 15 hectares in the *barangay* with potential for agroforestry establishment; (ii) with available MLGU staff trained as agroforestry FFS facilitators; (iii) presence of organized PO's or beneficiaries willing to be organized as a PO with at least 30 to 35 households members; and (iv) beneficiaries willing to participate in the project, who have idle lands of at least 1,000 square meters but not more than 5,000 suitable for agroforestry establishment and development.

67. A.2.2. Approach: The implementation strategies of the activities of this component under the Additional Financing will follow the previous implementation arrangement. However, slight amendments will be made at operational level taking into account the lag time to completion. In the on-going agroforestry project, AFFS training activities were conducted within 5 months. Training was conducted before the comprehensive site development and aimed to develop farmers' capabilities to establish, manage and sustain the agroforestry projects. Site development includes seedling production, plantation establishment and care and maintenance of the trees planted in the field.

68. Under the Additional Financing the implementation approach will entail delivery of training activities in tandem with the comprehensive site development. During the first month, activities will focus on organizing the farmer beneficiaries. The PO's will be strengthened to secure necessary documents needed in the implementation of the projects, such as bank account and other documents. The rest of the training days will be hands-on demonstration on comprehensive site development. Sustainability planning includes identification of activities to be undertaken by PO's in the established agroforestry plots after the phasing out of the CHARMP2. In addition, follow up planning will be continued in one tribal communal watershed that cannot be completed under the on-going project. This will be in consultation with the LGUs and communities. The activities to be undertaken will include data collection and watershed characterization and planning exercises with the full participation of stakeholders. The implementation strategy of the agroforestry project is presented in Appendix 5.

69. The AFFS training will be managed by the Municipal Local Government Unit Facilitator, trained under CHARMP2. The Community Development Facilitators and Assisting Professionals hired by CHARMP2 will assist the Facilitator to implement the agroforestry projects. Likewise, monitoring, validation and evaluation of the reforestation projects will be conducted. No additional reforestation is planned under the Additional Financing due to the

limited implementation time frame. Assessment meetings and training on forest protection will be conducted to sustain the reforestation projects.

70. A.2.3. Description: Under the on-going component activities, partner IPO's/PO's are conducting maintenance and protection of their plantations to ensure high survival. The PSO, PCO, LGU's are conducting regular monitoring of the POs' accomplishments.

71. Under the Additional Financing, the CWCFMA shall undertake three activities under the subcomponent on community watershed conservation and reforestation: (i) M&E of PO/IPO on the on-going reforestation and agroforestry plantations; (ii) establishment of agroforestry plots through Comprehensive Site Development; and (iii) training and planning on project sustainability and development of watershed management plan. The monitoring and evaluation of the 10,655 has of PO/IPO reforestation and agroforestry plantations shall be a continuous activity of the component and shall immediately start at project commencement.

72. The first year activities for the watershed conservation and reforestation sub-component include: (i) conduct of 2 CWCFMA evaluation and assessment meetings/workshops; (ii) monitoring of 8,590 ha of reforestation plantations; and (iii) development of 1 integrated watershed management plan in a communal tribal watershed. This shall entail engaging the services of external experts through procurement of services to assist in developing the plan. In the second year of project implementation, the project shall: (i) conduct 2 CWCFMA evaluation and assessment meetings/workshops; (ii) conduct monitoring & evaluation of 8,490 has of PO/IPO reforestation plantations; and (iii) conduct 12 training & studies on enhancement of 6 Provincial Watershed Management Sustainability Plan.

73. Under the promotion of agroforestry subcomponent, the first year activities include: (i) conduct of 6 PLGU/MLG orientations and consultations planning with beneficiaries and partner agencies; (ii) conduct of 1 trainers/refresher workshop of 18 agricultural technicians/LGU partners, 6 Community Dev't. Facilitators and 6 assisting Professionals on agroforestry farmer field school (FFS); (iii) conduct 18 agroforestry farmer field school (AG-FFS) for an aggregate total of 540 farmers; (iv) survey and mapping of 540 individual agroforestry plots covering a total of 270 has; (v) Comprehensive Site Development (CSD) training and planning on nursery, plantation management, bookkeeping, simple accounting and annual plan preparation covering an area of 270 has; (vi) CSD Implementation of 270 has based on the Agroforestry guideline; (vii) monitoring, validation & evaluation of PO/IPO accomplishments for the 540 plots established; (viii) conduct 24 Provincial evaluation and assessment meetings/workshops; and (ix) conduct 3 Information Education Campaign/School on Air Program school on Natural Resource Management. In the second year, the activities shall include: (i) monitoring of 2,436 has of agroforestry plots developed; (ii) conduct of 18 Provincial Reforestation & Agroforestry committee meeting; (iii) conduct of 6 project turnover of agroforestry projects; and (iv) conduct 3 provincial video learning school on Natural Resource Management. The details of the implementation schedules of activities for component 2 are presented in Appendix 5.

### **A.3. Agriculture, Agribusiness and Income Generating Activities**

74. A.3.1 Selection criteria: This component aims to assist productive poor households willing to engage in livelihood activities through interest groups.

75. To focus interventions, commodity prioritization will be undertaken in the new barangays during the participatory planning sessions. Preferences will be given to the commodities with:

- a. production expansion and food sufficiency potential;
- b. low barrier for entry of the poorer households;
- c. income and job generation potential;
- d. market potential;
- e. socio-cultural acceptability and sustainability.

76. With the limited time frame of two years, the Project will seek to partner with existing groups in the communities. In the event of no existing groups, LIG members will be organized according to their current engagement in the commodity chains. LIG formation shall be guided

by a set of criteria to ensure participation and equal opportunity to all members of the community.

77. Likewise, in the identification of livelihood subprojects, a set of criteria shall also be followed ensuring beneficiary participation, sustainability, environmental safety, etc.

78. A.3.2. Approach: For the 18 expansion barangays, the component will organize 5 LIGs for each *barangay* with a minimum of 15 members per LIG to reach 1,350 additional beneficiaries representing the same number of households.

79. The Livelihood assistance will be provided to new LIGs to be formed in the new barangays.

80. The LAF will still be channelled through community financial institutions (CFIs) selected and endorsed by the LGUs. The existing CFIs engaged by the project who are capable and willing to continue as CFIs for the scaling up may still be engaged. However, new CFIs may be tapped in case the initial CFIs do not have an active presence in the new barangays.

81. A.3.3. Description: The component design will be simplified with the following subcomponents with interlinked activities in a chronological order, outlined as follows:

- I. **Commodity-driven Planning.** This will be done at the community level with the concerned planning and agricultural offices of the LGUs at the municipal and provincial level assisted by Project staff.
- II. **Livelihood Development.** This will be done through: (i) an initial FBS to provide training for LIGs; (ii) preparation of business plans; (iii) engagement of CFIs as LAF financial managers; (iv) provision of other technical trainings including mentoring and coaching; (v) LAF project assessment exercises; and, (vi) fund turn-over to qualified LIGs.
- III. **Monitoring.** Monitoring activities shall be conducted to track implementation targets.

#### **A.4. Rural Infrastructure Development**

82. A.4.1. Selection criteria: Specific selection criteria for each type of subproject are provided in Annex 5. The infrastructure subprojects eligible for Project financing are: (i) farm-to-market road; (ii) footbridge; (iii) footpath; (iv) tramline; (v) communal irrigation system; (vi) domestic water supply; (vii) community infrastructure, that include solar dryer, warehouse and greenhouse.

83. A.4.2. Approach: Indicative lists of sub-projects were submitted to PSO for evaluation and validation. Approval of these submitted sub-projects would be based on RID criteria set by the project. After which the proponent LGUs will submit required clearances/certificates and other technical documents. Each proponent LGU will prepare the Feasibility Study (FS) and Detailed Engineering Design (DED) of each sub-project for approval by the PSO. The respective LGUs (Provincial and Municipal) will be responsible on the sub-project's procurement process, and the implementation. Community-based laborers shall be given preference in the physical implementation as part of the manpower of the winning contractor.

84. Irrigators' Associations (IAs) and Barangay Waterworks and Sanitation Associations (BAWASAs) should be activated/organized and registered as part of the requirement. The activation and organization of IA's and BAWASA's shall be handled by the SMP/IP Component. Prior to project implementation, LGU's and other technical personnel should also undertake trainings and workshops to increase their technical knowledge on project implementation.

85. For any given project, monitoring and evaluation plan shall be undertaken by the direct implementers (LGU) through Provincial Engineer Offices (PEO) and Municipal Engineer Offices (MEO) including the PSO. The range of activities include: a) procurement activities; b) contract implementation and compliance of MOA; c) progress billing and release of payments; and d) acceptance of projects. The objective of sub-project monitoring at the PSO level is to

ensure that implementation of activities are consistent with approved construction plans, technical standards, procurement rules and bid documents.

86. Community exchange visits will be organized for the duration of the project, to enable communities/ LGU's to learn from experiences in other areas of development, operation and maintenance of community infrastructures.

87. **A.4.3. Description:** The key activities under this component include: a) rehabilitation/improvement of farm-to-market-access roads; b) construction/rehabilitation of communal irrigation projects/systems; c) rehabilitation/ construction of domestic water supply systems and construction of community infrastructure.

88. The activities to be undertaken under this component are: (i) Project identification. Proponent LGUs (municipal or provincial) in consultation with the concerned barangays submit a prioritized list of eligible subprojects to PSO. These subprojects should form part of the proposed projects in the Barangay Development Plan of the beneficiary *barangay*. (ii) Study (FS) and Detailed Engineering Design (DED) Preparation. The FS and DED are prepared by the proponent LGU and submitted to the PSO. (iii) Appraisal and Approval. The PSO appraises the subproject by reviewing the FS and DED and validating these through site visits. (iv) Locational and Administrative Clearances. After approval the proponent secures the following clearances: ECC from DENR, deed of donation for right of way, Sanguniang Bayan or Sanguniang Panlalawigan (local municipal Council or Provincial Board) resolution authorizing local chief executive to enter into MOA with Project and committing the LGU to provide the required counterpart fund. (v) MOA signing and opening of Trust Account. LGU and Project representatives sign the MOA providing the terms of engagement and the responsibilities of each party. A bank account shall also be opened by the LGU specific for the subproject funds where its counterpart and funds transferred from the PSO shall be deposited. (vi) Procurement. The proponent LGU shall procure the civil works required under the subproject in compliance to the Government Procurement Reform Act (R.A. 9184) and IFAD procurement guidelines. (vii) Implementation and Monitoring. The subproject shall be implemented by the engineering office of the proponent LGU while the RID component unit monitors the construction. Construction supervision and quality assurance is the responsibility of the LGU implementer. (ix) Completion, Turn-over and Acceptance. After final inspection of the completed subproject, this is turned-over to the LGU for operation and maintenance.

89. Specific measurable outcomes included are: (i) 40% reduced travel time; (ii) 30% increase in traffic count; (iii) 25% reduction in time to collect water; and (iv) 25% increase of HH number with sales increases. The RID target outputs include: (i) Rehabilitating and improving an additional 86 KMs of farm-to-market roads, 40,450 LMs footpaths, 625 LMs footbridges and construction of 6 units Tramline; (ii) Rehabilitating and improving an additional 482 has of Communal irrigation schemes; (iii) Construction of an additional 12 units Domestic Water Supply systems; (iv) Construction of Community Infrastructures consisting of 13 units Multi-purpose warehouse, 12 units solar dryer and 6 units green house; and (v) Conduct of trainings for MLGUs and MLGU Staff on O&M of Access Infrastructure. Items (i) to (iv) covers the municipalities and Barangays of the provinces of Kalinga, Apayao, Ifugao, Abra, Benguet and Mountain Province.

## **B. Description and Quantification of Expected Benefits**

90. The Project is now generating significant benefits to poor households and indigenous peoples in the highland communities of the Cordillera Administrative Region. Additional Financing will directly benefit an incremental aggregate of 19,055 households from the various activities of the project in 18 new barangays in the 37 municipalities of the CHARMP2.

91. **B.1. Social mobilization, participatory investment planning (SMPIP):** The general expected outcome of the SMPIP component is to empower the beneficiary communities. Outcomes include: (i) 50% of poorer HHs participating in community development activities; and (ii) IP/community organizations actively involved in identifying and addressing community needs, membership of which will include at least 40% women. Expected outputs include: (i) PPIPs established in 27 barangays; (ii) 36 POs and BPMETs established and mobilized to

assist in subproject implementation and monitoring; and (iii) 2,580 group members and LGU staff trained and coached on implementation and monitoring.

**92. B.2. Community Watershed Conservation, Forest Management & Agroforestry (CWC/FMA):** The component will: (i) develop, conserve and protect at least 270 additional hectares; (ii) train at least additional 540 household on maintaining agroforestry plots; and (iii) assist at least 3 *tribal communities* to prepare IWMP.

**93. B.3. Agriculture, Agribusiness and Income Generating Activities (AAIGA):** AAIGA will focus on increasing incomes from sales by 20% among 437 farmer groups over a period of three years. This will be achieved through the following outputs: (i) 88 groups providing marketing services to farmers in 170 communities; and (ii) 90 new LIGs accessing financial and related support services.

**94. B.4. Rural Infrastructure Development (RID):** Component outcomes include: (i) Expanded access to agricultural area, markets and services; (ii) Higher value of sales; (iii) Capacitated MLGUs; (iv) Expanded increase in crop production in beneficiary areas; (v) Expanded number of Fully Capable MLGUs to maintain and operate access infrastructure; and (vi) Expanded number of MLGU-based technical personnel who could prepare FS or Project proposal for possible funding.

95. Provisions of RID interventions in the identified highland communities will cover and benefit some 3,842 HHs (16,464 people) whose incomes will increase due to enhanced access to market, improved irrigation systems, community infrastructure and potable drinking water. Employment generation and skills trainings under the component will benefit some 1,500 households.

96. Specific measurable outcomes included are: (i) 40% reduced travel time; (ii) 30% increase in traffic count; (iii) 25% reduction in time to collect water; and (iv) 25% increase of HH number with sales increases. Target outputs include: (i) rehabilitating and improving an additional 86 KMs of farm-to-market roads, 40,450 LMs footpaths, 625 LMs footbridges and construction of 6 units Tramline, (ii) rehabilitating and improving an additional 482 has of Communal irrigation schemes, (iii) construction of an additional 12 units Domestic Water Supply systems, (iv) construction of Community Infrastructures consisting of 13 units Multi-purpose warehouse, 12 units solar dryer and 6 units green house, and (v) conduct of trainings for MLGUs and MLGU Staff on O&M of Access Infrastructure. Items (i) to (iv) covers the municipalities and Barangays of the provinces of Kalinga, Apayao, Ifugao, Abra, Benguet and Mountain Province. The tables below provide an overview of roles and responsibilities for O&M, followed by the estimated cost per unit. These estimates shall be closely monitored during implementation.

**Table 1: O&E Responsibilities for Different Types of Civil Works projects**

Infrastructure Sub-projects	Responsibilities/roles for O&M		
	LGUs	POs	Community
FMR	<ul style="list-style-type: none"> <li>MOA between LGU and DA-CAR (in Article VI-Other Covenants, Section 6.02 of the said MOA) states that after completion of the sub-projects, the Proponent shall operate and maintain properly the sub-project and for this purpose shall allocate funds exclusive to the operation and maintenance of the completed sub-projects;</li> <li>Sangguniang Panlalawigan/Bayan Resolution manifesting commitment to set aside trust fund for the O&amp;M of CHARMP2 Rural Infra Development sub-projects</li> <li>Operation &amp; maintenance plan endorsed by the SP/SB for budget allocation</li> </ul>		
Footpath/footbridge			
CIS		O&M plan by the IA's	<p>As process of the turn-over and Acceptance, the LGU accepts the completed sub-projects from the contractors and turn it over to the CHARM2 Project, the Project then turns over the completed SP to the LGU for the O&amp;M to the community which the community accepts as part of their commitment to the Project.</p>
DWS		O&M plan by the BWASA's	
Community Infrastructure		Policy on O&M of Community infrastructures signed by the Barangay Council	

2. Costs of other infra based on the sample of maintenance plan per type of completed sub-project submitted by the Province of Benguet.

**Table 2: Average O&M Costs for Different Types of Civil Works projects**

Type of Infrastructure		Activity	O&M Cost		Remarks
1	Footpath	vegetation control	₱9.13	per linear meter/year	per linear meter of FP
		manual repair of unpaved surfaces	₱5.45	per linear meter/year	
		FP O&M cost subtotal		₱14.58	
2	Footbridge	Structures parts painting and cable maintenance	₱201.50	per linear meter/year	per linear meter of FB
		FB O&M cost subtotal		₱201.50	
3	Tramline	maintenance of cables, pulleys, engine prime mover	₱5,000.00	per cropping	
		Tramline O&M cost subtotal		₱5,001.00	
4	Communal Irrigation System	manual ditch cleaning	₱17.12	per linear meter/year	per linear meter of canal
		culvert line/barrel cleaning	₱45.00	per linear meter/year	
		vegetation control	₱4.50	per linear meter/year	
		maintenance of structure (weir, aprons)	₱14,000.00	per year	
CIS O&M cost subtotal			₱66.62	per linear meter/year	
			₱14,000.00	per year	
5	Domestic Water Supply	maintenance of pipelines (provision of fittings and equipments/tools)	₱52.58	per pipe (6 meter)	for pipes 2" diameter and below
		DWS O&M cost subtotal		₱52.58	per pipe (6 meter)
6	Community Infrastructure	general repair/painting	₱44,000.00	per year	

97. **B.5. Project Management and Coordination:** The target outcomes include: (i) project implementation completed on time, within budget, and to the satisfaction of the target beneficiaries; (ii) increased awareness on Indigenous Knowledge Systems and practices & agricultural technologies in the target areas; and (iii) a fully established M&E System which is effective, efficient and user-friendly among scale up partners. Target outputs include: (i) formulating and or upgrading necessary project management structures including the M&E, procurement, accounting, and disbursement procedures that the Scale Up project may require; (ii) enhance the CHARMP2 School on the Air (SOA) Program; and (iii) production and dissemination of additional "Best Practice" video tapes.

### C. Outline of Changes required in the CHARMP2 Legal Agreement

98. Amendments to Financing Agreement: The existing Financing Agreement of the Second CHARMP Project as amended on 12 September 2013 (Loan No. 749-PH, Grant No. 1030-PH) will be further amended to include the provisions of the Additional Financing. Key amendments relate to the additional loan expressed in Special Drawing Rights (SDR), service charges to the additional loan, repayments of principal to the additional loan, financing (2.01),

counterpart funding (3.05), Authorized Allocation (2.03b), Schedule 2, and extension of the closing and completion dates. The amendment will be carried out through exchange of letters, after approval by the IFAD Executive Board (EB).

99. As the Project is being scaled up through increased beneficiary outreach within the same Project Area, "entry into force date" will be unchanged, and implementation will commence upon amendment and signature of the financing agreement by IFAD and the Government of the Philippines. The on-going Project will also be extended for a period of two years from the 31 December 2016 date of completion. The date of completion both for the on-going and the additional financing will be 31 December 2018 and date of loan closing will be 30 June 2019.

#### **D. Adjustments in the Results Matrix**

100. There will be no significant adjustments in the RIMS indicators to be monitored in the scale-up project. The project will implement the same sub-project types as in CHARMP2. These indicators will be closely monitored and evaluated periodically as it has been in the past with the on-going Project. RIMS level 1 and level 2 reporting will also be continued, to include the capturing of impact by end of Project.

### **IV. Project implementation**

#### **A. General Approach**

101. In line with CHARMP2, the intervention supported under the Additional Financing will adopt participatory and gender mainstreamed approaches in the planning, execution and monitoring in partnerships with peoples organizations, local government units and other national line agencies. Project Support Office will be assisted by the Department of Agriculture and its Regional Field Office in CAR and the Provincial Coordination Offices. Project structures will include the Regional Inter-agency Steering Committee (RISC), Regional Coordination Committee (RCC), Provincial Management Group (PMG), Barangay Implementing Team (BIT) established under the current Project.

#### **B. Organizational framework**

##### **B.1. Lead Project Agency: Department of Agriculture and the Regional Field Office in CAR (RFO-CAR)**

102. The DA as lead Project agency hosts management and coordination of the Project in RFO-CAR. The RFO-CAR has requisite institutional memory and capacity to implement the Project because the Project Support Office (PSO) under the on-going programme was staffed by RFO-CAR staff who occupied core positions in the Project. The RFO-CAR therefore possesses the needed capacity and experience to implement the Project.

103. The institutional arrangements for the Project are embedded in the existing organizational structure of RFO-CAR. This is consistent with the government's present policy to situate project offices within the existing organizational structure of agencies.

104. The Regional Executive Director of RFO-CAR, as the Project Director, has policy decision authority over the Project including the approval functions inherent to his government position over contracts and financial transactions.

##### **B.2. Project Support Office (PSO)**

105. The PSO shall continue to exist as a special temporary unit and organic part of the RFO-CAR. The PSO is necessary to ensure efficient and effective coordination of the various Project components carried out by implementing agencies and institutions. The Project Manager, one of the Regional Technical Directors (RTD) of the RFO-CAR, is in-charge of the day-to-day operation of the Project as the head of the PSO. Under the PSO, Project components are handled by RFO staff responsible for coordinating all activities. These staff have been identified and designated under the on-going programme and are responsible for

Project activities on a full-time or part-time basis.

106. Unit heads or coordinators have been designated to the following units in the head office of the PSO: (a) Social Mobilization, Participatory Investment Planning and Gender Unit; (b) Community Watershed Conservation, Forest Management and Agro- forestry Unit; (c) Agriculture, Agribusiness and Income Generating Activities Unit; (d) Rural Infrastructure Development Unit; (e) Planning, Monitoring and Evaluation Unit; (f) Administration Unit; (g) Finance Unit; and (h) Information and Knowledge Management Unit. Changes in the structure may be made from time to time as may be required during implementation.

107. In addition, experienced and qualified staff has been hired under contract of services to augment PSO staff. This staffs has specializations required by the Project that are not present in DA RFO-CAR.

108. The offices, facilities and vehicles at the Regional and PCOs shall remain to be used for the scale-up activities.

109. **B.2.1. Planning, Monitoring and Evaluation:** As in CHARMP2, the project will support community members in participatory monitoring and evaluation of the implementation of their subprojects as indicated in their own PIPs. Project support includes capacity building in the 18 new barangays and nine carry over barangays. This will be through trainings and the actual carrying out of monitoring, evaluations and plan adjustments in relation to the implementation of the activities and subprojects under components 2, 3 and 4. Planning exercises will be facilitated through Component 1 involving the community at large and their respective Barangay Development Councils. Participatory evaluation workshops in the community, with the BPMETs as main participants, will be organized to further build capacities in the community for them to conduct assessments of results from such subprojects and other similar interventions. Building capacities of the target communities is expected to influence the social and economic environment and changes in the community's priority-setting.

110. To enhance monitoring and evaluation of subprojects and activities, the Project will adopt available geo-tagging and mapping technology in tracking project implementation in the field, and will track and publish results online using online dashboards and Google Earth. BPMETs as well as other Project implementers will be trained in this respect. However, BPMETs in the 18 new barangays and some old barangays will be trained and provided with the capacity to gather field data digitally and send the same electronically to the PSO, particularly to the PMEU, which will in turn encode and consolidate these data into a free spatial processing software such as Google Earth for use of project implementers and oversights.

111. **B.2.2. Information and Knowledge Management:** The IKM Unit will be responsible for Knowledge Management activities of the Project which will be composed of three (3) IKM Officers to be headed by an IKM coordinator. These broadly include conducting press conferences/media encounters and knowledge learning market at the regional level, publication of news bulletin, brochures, books, and documentaries among others by engaging the services of professionals in the field, and documenting successful models/practices/stories and uploading them on web. Documentations will be packaged as press releases and/or project documentaries.

112. *School-on-Air/Video Learning School.* The IKM Unit will head the implementation of the SoA and video learning school on natural resource management in partnership with the CWCFMA component. Previously developed module will be developed especially on the expansion of agroforestry and climate change topics and will serve as the module material for the program. A special audio-visual learning material for natural resource management will be developed by engaging professionals in the field. The SoA program will be offered in the three (3) provinces (Abra, Benguet, Kalinga) where initial successes on recently conducted SoA survey study was noted while the three (3) other provinces (Apayao, Ifugao and Mountain Province) will be offered with video learning school where there are no appropriate radio stations to be tapped. Target beneficiaries will be members of the agroforestry peoples' organizations with priority to the 18 new barangays. Implementation of the program will

require active participation and involvement of the LGUs in the *barangay*, municipal and provincial levels.

### **B.3. Provincial Coordination Office (PCO)**

113. In order to facilitate Project implementation at the field level, the PCO has been strengthened in terms of staffing and resources; and given more authority to be able to approve required documents at the provincial level. The PCO works closely with the PMG to ensure that activities and projects in the Project area in the province are well coordinated. The PCOs shall be under the direct supervision of the Project Manager.

114. The Provincial Coordination Officer heads the PCO in each of the six (6) provinces. The PC Officer works in tandem with the Provincial LGU Action Officer (PPDC) to ensure that Project activities and concerns are monitored and coordinated properly in all Project areas in the concerned provinces. The Provincial Coordination Offices were strengthened with additional staff to coordinate specific Project components while the Provincial Coordinating Officer supervises them in addition to other functions under the RFO.

115. In order to fast track implementation of Project activities at the provincial level, the authority to supervise the implementation of component activities is delegated to the PC Officers and the local government units.

116. The PCO will continue to be responsible for: (i) facilitating the planning process from the *barangay* up to the provincial level; (ii) facilitating sub-project proposals preparation and submission to PSO; (iii) coordinating CHARMP2 component activities in the province and extending technical assistance whenever possible; (iv) overseeing that local structures and implementing partners are operational; (v) monitoring the implementation of sub-projects in the province; and (vi) facilitating report preparation and submission to PSO.

### **B.4. Project Structures**

117. The Project follows the effective structure established under the on-going programme that was aligned with the existing LGU structure. This ensured that coordination functions were strengthened and decision-making and problem-solving responsibilities were devolved to the extent possible at the community, municipality and provincial levels.

#### **B.4.1. Regional Inter-agency Steering Committee (RISC)**

118. The Project is guided by a policy-making structure. The highest level is the Regional Inter-agency Steering Committee created at the regional level. The RISC is chaired by the DA Undersecretary for Operations, with the RFO-CAR Regional Executive Director & Project Director as vice-chairman, and the Project Manager as executive secretary. The members of the RISC are: (a) Provincial Governors of the six provinces of CAR in the Project area; (b) Regional Director of the NCIP-CAR; (c) Regional Director of NEDA-CAR; (d) Regional Executive Director of DENR-CAR; (e) Regional Irrigation Manager of NIA-CAR; (f) Regional Director of DILG-CAR; (g) Regional Director of DTI-CAR; (g) an NGO representative; and (i) the chairman of the Regional Agriculture and Fishery Council (RAFC) in CAR. The RISC meets at least twice a year to review policies, resolve issues and approve the annual work plan and budget of the Project. The Project coordinates closely with the Office of the Undersecretary for Operations and all concerns are channelled through the Special Projects Coordination and Management Assistance Division (SPCMAD) at DA Central Office.

#### **B.4.2. Regional Coordination Committee (RCC)**

119. The Regional Coordination Committee is established at the regional level as the operational structure which is parallel to the policy-making structure. The RCC is chaired by the Project Manager. The RCC is comprised of: (a) Regional Coordinators of implementing agencies/institutions; (b) Provincial Planning and Development Coordinators (PPDCs) representing provincial governments of the Project-supported provinces; (c) PSO Provincial Coordination Officers; and (d) PSO Project Component Coordinators. The RCC meets quarterly to thresh out implementation issues and problems that cannot be resolved at the municipal or provincial levels.

#### **B.4.3. Provincial Management Group (PMG)**

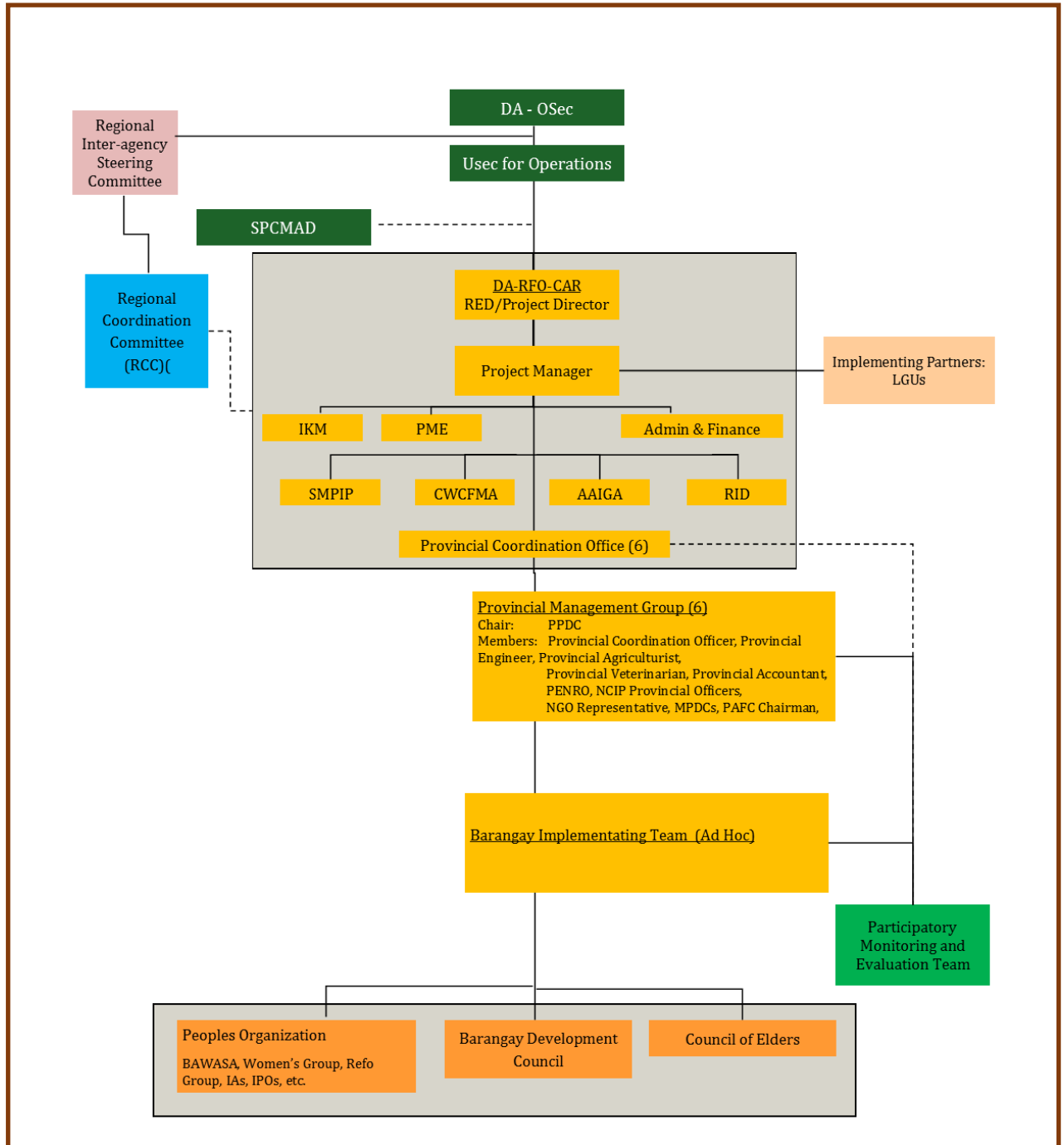
120. The operation unit at the provincial level is the Provincial Management Group chaired by the PPDC and the PPDO as secretariat. The PC Officer shall be the co-chair of the PMG with the PC Office assisting the PPDO in its secretariat functions. The PMG is composed of provincial coordinators of implementing agencies and representatives from the municipalities implementing project activities. The municipal representatives will include the Municipal Planning and Development Coordinator, Municipal Agriculturist and Municipal Engineer. PMG will meet quarterly to review the progress of the Project at the provincial level and to settle implementation issues.

121. The functions of the PMG are as follows: (i) Serve as the implementing and management arm of the Project in the province; (ii) Prepare the provincial annual work plan and budget; (iii) Provide technical support and guidance to Project implementers at the municipal and *barangay* levels; (iv) Coordinate the implementation of the various project components being undertaken by the various implementing agencies and units at the provincial level; (v) Resolve implementation issues, concerns and problems by acting as a forum to discuss the same; and (vi) Perform such other functions as may be required by the government and the funding agencies to ensure successful project implementation.

#### **B.4.4. Barangay Implementing Team (BIT)**

122. A BIT shall be formed in each of the new *barangays*. The BIT is composed of the implementing field staff (Community Development Facilitators, agricultural technician, forester, field engineer, and other appropriate staff assigned to the *barangay*) to coordinate Project activities with other stakeholders and ensure maximum community participation and benefit. As a team they should also complement each other's functions to maximize the Project's impact in the community. A team leader shall be identified among the full-time members and may be rotated on a periodic basis. The team shall work closely with the *barangay* officials, Project supported POs and other stakeholders in the community. The BIT shall report to the PCO on Project implementation concerns on a periodic basis.

**Graph 1: Organizational Structure**



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

123. Activities of the Planning, Monitoring and Evaluation for both years 1 and 2 of the project are: (i) capability building of PMET with SMPIP in 18 barangays each year; (ii) three (3) Regional Planning and Review Workshops each year; (iii) project results monitoring database established and regularly updated; (iv) periodic report preparation and dissemination (monthly, quarterly, semi-annual and annual). In addition, one (1) End of Project Evaluation Study will be conducted with its results integrated in a Project Completion Study which shall be completed on the last quarter of project implementation and reported within six months after Project completion.

124. The IKM subcomponent's activities and physical targets are similar on a year on year basis. These include the production of: (i) four (4) Project Quarterly Bulletins at the Regional Level; (ii) Two (2) Brochures; (iii) Four (4) Flyers at the Regional level; (iv) one (1) Field Book; (v) Conduct of advocacy campaigns and related activities; (vi) Dissemination of materials produced; (vii) Write-shop on Best Practices, Lessons Learned and Sustainability Measures; and (viii) Holding of Knowledge and Learning Market Event.

#### **D. Financial management and procurement**

125. **Financial Management:** CHARMP) is currently financed by IFAD Loan 749-PH amounting to SDR 16.150 million, and IFAD Grant 1030-PH amounting to SDR 341,000. The PSO, which is implementing CHARMP2, will also be responsible for financial management of the additional funds. The last supervision mission rated the project's financial management as satisfactory. The PSO has one Project Accountant (part-time), one Assistant Project Accountant (part-time), two Project Bookkeepers (part-time), four full time Finance Analysts and one full time Finance Assistant in the Accounting Unit. One Project Budget Officer (part-time), one Assistant Project Budget Officer (part-time) and two full-time Finance Analysts are in the Budget Unit. Also in support of the project's financial management are seven full-time Roving Bookkeepers based in the five Cordillera provinces. The Project currently maintains a system based on excel spreadsheet, ledgers and books of accounts, in line with the New Government Account System manual version. However, the rollout of the e-NEW Government Accounting System is ongoing and expected to be fully implemented in 2016. The analysis of financial management arrangements undertaken during design assessed the risk as medium. Measures to mitigate the risk will include (i) increasing finance staff capacity at field level; (ii) strengthened measures for monitoring advances to implementing entities; and (iii) optimised use of electronic systems (e-NGAS and e-Budget, as described above) to improve financial reporting and monitoring.

126. **Flow of Funds.** IFAD's additional financing to the Project will be routed through the existing Designated Account denominated in United States Dollars maintained at the Land Bank of the Philippines. Funds are transferred depending on Project needs to the existing programme account in local currency with BPI, used for day-to-day expenditure. Disbursement and loan administration arrangements for the additional financing will be aligned to those of the original loan. The existing Letter to the Borrower will be revised to integrate the additional financing.

127. **Audit.** As is the case for CHARMP2, financial management and procurement of the additional financing will adhere to harmonized IFAD and GOP policies and procedures. CHARMP2 accounts are audited on an annual basis by the supreme audit institution, the Commission on Audit (COA). The COA gave an unqualified opinion on the Project's 2014 Financial Statements. The auditor's observations in the Management Letter observations are being monitored by the Project and have been - or in some cases, are in the process of being - resolved. The project's unaudited Financial Statements for 2015 will be submitted for audit at the end of March and the audit mission is expected to take place in April 2016, to ensure submission to IFAD by 30 June 2016 in accordance with covenants. CHARMP2 is also subject to internal audit by the COA resident auditor in the Department of Agriculture Regional Field Office for the Cordillera Autonomous Region.

128. **Procurement Procedures.** The existing guidelines for procurement shall be maintained using the Republic Act 9184, otherwise known as the "Government Procurement Act" (GPRA) and its amended Implementing Rules of Regulations (IRR), together with the IFAD Procurement Guidelines shall serve as the guidelines in the procurement of contracts.

129. **Procurement Assessment of Project Unit.** As per 2015 SIS Mission dated February 26-March 16, 2015, procurement rating is maintained as satisfactory (5). Procurement is

undertaken in accordance with the provisions of Republic Act (RA) 9184, its implementing rules and regulations consistent with IFAD's Procurement Guidelines. The PSO undertakes a compliance assessment of all rural infrastructure works undertaken by the LGU, maintaining detailed files on all rural infrastructure works.

130. A review of the rural infrastructure contracts reflect frequent cases of time extensions and suspensions due to weather conditions resulting in delays in implementation of infrastructure contracts. The PSO has reviewed all on going contracts and prepared a list of performance bonds to identify their expiry dates based on the existing or revised contract expiry dates and ensured the issuance of revised performance bonds where needed, to align the validity periods with any contract revisions.

131. **Procurement Arrangements under Additional Financing.** Procurement of goods, works and services financed by IFAD will continue to be undertaken in accordance with IFAD Procurement Guidelines and Philippine Government Procurement Reform Act. Bidding procedures to be adopted by all sub-project implementing agencies and units in carrying out procurement under the Project are in accordance with the Philippine Bidding Documents compatible with the IFAD Guidelines.

132. Contracts will be bulked as much as possible and existing thresholds will continue to be applied in determining procurement methods as well as IFAD prior review. These thresholds however, may be modified from time to time as notified by the Fund to the Borrower.

## **E. Implementation readiness**

133. The Project Support Office and the six (6) Provincial Coordination Offices are in place and fully operational; hence, are ready to implement the identified interventions in the new expansion *barangays* including sustainability activities in the original *barangays* for the proposed extension period of two years starting 2017. The various staff, both in the PSO and PCO, worked with the Project for an average of three to five years and have gained invaluable knowledge and experience in Project implementation. They are already familiar with the different Project processes. They were also provided with various capability trainings that makes them more effective and productive in their respective areas of assignments. The PSO has operated to provide the necessary support to implementing units in terms of administrative and coordination assistance including ensuring the smooth flow of funds on a timely and adequate basis. The DA as the lead implementing agency has assigned to the Project a core staff composed of senior personnel as heads of the various implementing and support units. The DA has assured their continued assignment to the Project.

134. For agroforestry implementation, the Environment Offices of the Provincial Governments leading the Reforestation Committee that have been implementing the reforestation and agroforestry component under the on-going programme, are familiar and ready to continue to implement the expanded agroforestry programme.

135. Likewise, CHARMP2 has organized and capacitated Municipal Marketing and Processing groups that will be able to serve new livelihood groups to be strengthened and organized in the new expansion *barangays*. There are also existing Financing Institutions that have been tapped as intermediaries for the livelihood assistance fund and will be ready to continue its role in the expansion *barangays*.

136. The Project structures composed of the Regional Inter-agency Steering Committee, Regional Coordination Committee and the Provincial Management Groups are still in place to absorb their extended functions under the new programme. Partner institutions such as the Local Government Units at the Provincial and Municipal levels have gained the necessary capacity to respond to the requirements of the Project with adequate and experienced staff assigned.

137. The Engineering Offices of the Provinces and the Municipalities, having experience in implementing the infrastructure projects under the on-going programme, are expected to implement the additional infrastructure projects without hitch. Further, the LGUs have also

indicated the availability of required counterpart funds for infrastructure projects that they have proposed. In this regard, a list of indicative prioritized projects initially selected based on set criteria have been endorsed for Project assistance by the proponent LGUs.

138. *Other requirements:* While the Project implementing units are ready for implementation, as may be necessary, it would hire additional staff and provide additional capability trainings and mentoring support, both for PSO and implementing partners, to serve the expansion *barangays*.

139. In the on-going programme, the Project has captured experiences, lessons learned and best practices. However, these have not been maximally utilized for better Project implementation in terms of generating the appropriate recommendations. Hence, there may also be a need to engage a consultant for Knowledge Management and Monitoring and Evaluation to develop tools to assist the PSO gather and package evidence-based reports and knowledge management products for use of the Project and its stakeholders to improve implementation and address policy issues.

## V. Project costs, financing, benefits and sustainability

### A. Project costs

140. The assumptions underlying the derivation of the project costs and financing plan. Project cost estimates are based on field data as of January 2016 and was prepared using costab version 3.01. Key assumptions employed in cost estimates are (i) a two year period implementation period starting from January 2017, (ii) physical and price contingencies were excluded in the calculations, (iii) an exchange rate of PhP 45 to one USD, (iv) taxes and duties are excluded from reimbursement by IFAD and (v) application of IFAD financing rules for reimbursement as per on-going CHARMP2. Based on current prices, the total investment cost was estimated at PhP 561.227 million (USD 12.255 million). Considering the recurrent costs of the project, the total project cost was valued at PhP 601.211 (USD 13.127) as indicated in the Tables below.

**Table 3: Components Project Cost Summary - Additional Financing CHARMP2**

IFAD_LP	(PHP '000)			(USD '000)			%	% Total
	Local	Foreign	Total	Local	Foreign	Total	Foreign Exchange	Base Costs
1. Social Mobilisation, Planning, Titling	40,426	1,752	46,179	987	39	1,026	4	8
2. Community Watershed Conservation /a	46,827	6,307	53,134	1,041	140	1,181	12	9
3. Agriculture, Agribusiness and IGAs /b	44,767	4,082	48,849	995	91	1,086	8	8
4. Rural Infrastructure	377,226	2,049	379,275	8,383	46	8,428	1	66
5. Project Management	44,164	7,284	51,448	981	162	1,143	14	9
<b>Total BASELINE COSTS</b>	<b>557,411</b>	<b>21,474</b>	<b>578,885</b>	<b>12,387</b>	<b>477</b>	<b>12,864</b>	<b>4</b>	<b>100</b>
Physical Contingencies	-	-	-	-	-	-	-	-
Price Contingencies	21,491	835	22,326	253	10	263	4	2
<b>Total PROJECT COSTS</b>	<b>578,902</b>	<b>22,309</b>	<b>601,211</b>	<b>12,640</b>	<b>487</b>	<b>13,127</b>	<b>4</b>	<b>102</b>

/a includes forest management and agroforestry

/b IGAs: Income Generating Activities

**Table 4: Expenditure Accounts by Components - Totals Including Contingencies**

IFAD\_LP (USD '000)

	Social Mobilization, Participatory Investment Planning	Community Watershed Conservation	Agriculture, Agribusiness and IGAs	Rural Infrastructure	Project Management	Total
<b>I. Investment Costs</b>						
A. Civil Works	-	-	-	8 228	-	8 228
C. Equipment, Materials	3	319	57	-	3	383
D. Training & Studies	695	413	419	104	332	1 962
E. Advisory Services	248	333	372	175	351	1 479
F. Livelihood Assistance Fund	-	-	204	-	-	204
<b>Total Investment Costs</b>	<b>946</b>	<b>1 065</b>	<b>1 052</b>	<b>8 508</b>	<b>686</b>	<b>12 255</b>
<b>II. Recurrent Costs</b>						
A. Allowances	59	117	45	-	-	221
B. Operation & Maintenance	43	23	11	93	482	651
<b>Total Recurrent Costs</b>	<b>101</b>	<b>140</b>	<b>56</b>	<b>93</b>	<b>482</b>	<b>872</b>
<b>Total PROJECT COSTS</b>	<b>1 047</b>	<b>1 204</b>	<b>1 108</b>	<b>8 600</b>	<b>1 168</b>	<b>13 127</b>
Taxes	-	-	-	-	-	-
Foreign Exchange	40	143	93	46	165	487

## B. Project financing

141. The project will be financed by IFAD for an additional SDR loan amount equivalent to USD 10.333 million representing 78.7 % of the total project cost respectively, while the GoP shall shoulder an equivalent of USD 1.972 million which accounts for 15% of the total. The LGUs and beneficiaries<sup>2</sup> shall respectively shoulder USD 0.736 million (5.6%) and USD 0.087 million (0.7%) of the total cost of the project as shown in the Tables below. The cost of civil works is estimated at USD 8.228 million which represents 62.7% of the investment cost. In terms of expenditure categories, the IFAD additional loan shall finance 71.7% of civil works; 90% of equipment and materials; 100% of LAF; 90% each for advisory services and recurrent costs; and 90% of training and studies. Further details of costs by expenditure category are indicated in Appendix 8.

<sup>2</sup> LGUs shall provide an equity of 10% of the total cost for civil works while beneficiaries of Communal Irrigation Systems (CIS) and Domestic Water Supply (DWS) shall borne 5% of their respective investment costs.

**Table 5: Expenditure Accounts by Financiers (PHP '000)**

	(PHP '000)											
	IFAD Loan	%	LGUs	%	Beneficiaries	%	GoP	%	Total	%	F.E.	(Excl. taxes)
<b>I. Investment Costs</b>												
A. Civil Works	270,286	71.7	33,687	8.9	3,987	1.1	68,783	18.3	376,743	62.7	-	376,743
C. Equipment, Materials	15,710	90.0	-	-	-	-	1,746	10.0	17,455	2.9	3,491	13,964
D. Training, Studies	80,967	90.0	-	-	-	-	8,996	10.0	89,963	15.0	7,280	82,683
E. Advisory Services	60,993	90.0	-	-	-	-	6,777	10.0	67,770	11.3	5,642	62,129
F. Livelihood Assistance Fund	9,296	100.0	-	-	-	-	-	-	9,296	1.5	-	9,296
<b>Total Investment Costs</b>	<b>437,251</b>	<b>77.9</b>	<b>33,687</b>	<b>6.0</b>	<b>3,987</b>	<b>0.7</b>	<b>86,302</b>	<b>15.4</b>	<b>561,227</b>	<b>93.3</b>	<b>16,413</b>	<b>544,814</b>
<b>II. Recurrent Costs</b>												
A. Allowances	9,127	90.0	-	-	-	-	1,014	10.0	10,141	1.7	-	10,141
B. Operation & Maintenance	26,858	90.0	-	-	-	-	2,984	10.0	29,843	5.0	5,896	23,947
<b>Total Recurrent Costs</b>	<b>35,986</b>	<b>90.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,998</b>	<b>10.0</b>	<b>39,984</b>	<b>6.7</b>	<b>5,896</b>	<b>34,088</b>
<b>Total PROJECT COSTS</b>	<b>473,237</b>	<b>78.7</b>	<b>33,687</b>	<b>5.6</b>	<b>3,987</b>	<b>0.7</b>	<b>90,300</b>	<b>15.0</b>	<b>601,211</b>	<b>100.0</b>	<b>22,309</b>	<b>578,902</b>

**Table 6: Expenditure Accounts by Financiers (USD '000)**

	(USD '000)											
	IFAD Loan	%	LGUs	%	Beneficiaries	%	GoP	%	Total	%	F.E.	(Excl. taxes)
<b>I. Investment Costs</b>												
A. Civil Works	5,903	71.7	736	8.9	87	1.1	1,502	18.3	8,228	62.7	-	8,228
C. Equipment, Materials	344	90.0	-	-	-	-	38	10.0	383	2.9	77	306
D. Training, Studies	1,766	90.0	-	-	-	-	196	10.0	1,962	14.9	159	1,803
E. Advisory Services	1,331	90.0	-	-	-	-	148	10.0	1,479	11.3	123	1,356
F. Livelihood Assistance Fund	204	100.0	-	-	-	-	-	-	204	1.6	-	204
<b>Total Investment Costs</b>	<b>9,548</b>	<b>77.9</b>	<b>736</b>	<b>6.0</b>	<b>87</b>	<b>0.7</b>	<b>1,885</b>	<b>15.4</b>	<b>12,255</b>	<b>93.4</b>	<b>358</b>	<b>11,897</b>
<b>II. Recurrent Costs</b>												
A. Allowances	199	90.0	-	-	-	-	22	10.0	221	1.7	-	221
B. Operation & Maintenance	586	90.0	-	-	-	-	65	10.0	651	5.0	129	522
<b>Total Recurrent Costs</b>	<b>785</b>	<b>90.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>87</b>	<b>10.0</b>	<b>872</b>	<b>6.6</b>	<b>129</b>	<b>743</b>
<b>Total PROJECT COSTS</b>	<b>10,333</b>	<b>78.7</b>	<b>736</b>	<b>5.6</b>	<b>87</b>	<b>0.7</b>	<b>1,972</b>	<b>15.0</b>	<b>13,127</b>	<b>100.0</b>	<b>487</b>	<b>12,640</b>

142. On average, investment of IFAD resources per household for this proposed Additional Financing remains in line with the original project's appraisal estimates.

### C. Summary benefits and economic analysis

143. **Benefits and Beneficiaries:** The project will directly benefit an incremental aggregate of 19,055 households from the various activities of the Rural Infrastructure, Agroforestry and Livelihood Assistance provision to LIGs. The subprojects on road rehabilitation shall benefit a total number of over 9,757 households (Table 5). The logframe assumes that 30% of households will overlap, thus adopts a total outreach of 14 000 households.

**Table 7: Incremental Estimated Number of Direct Beneficiaries**

Sub-Project Type	Estimated Number of Beneficiaries	
	Household	Population
A. Rural Infrastructure Development		
Road Rehabilitation	9,757	48,785
Foot Path	1,500	7,500
Foot Bridge	899	4,495
Tramline	341	1,705
CIS Rehabilitation/Construction	720	3,600
Domestic Water Supply	1,177	5,885
Community Infrastructure		
Multi-Purpose Warehouse	1,331	6,655
Solar Dryer	980	4,900
Greenhouse	460	2,300
B. Agroforestry	540	2,700
C. AAIGA (LIGs)	1,350	6,750
Total	19,055	95,275

144. **C.1. Direct Benefits:** The immediate economic benefits from the project are increased productivity-through the rehabilitation of Communal Irrigation Systems, increased vehicle operating cost savings (VOCs) due to road rehabilitation. Aside from the road rehabilitation, the community infrastructure on footpath and tramline can contribute to reduced travel time for farmers in bringing their produce to markets including access to social, cultural, religious and educational institutions, among others.

145. The benefit from CIS rehabilitation are due to the expected increase in the cropping intensity or the increase in the effective crop area (ECA) of the farmers' agricultural land and a 10% increase in yield per unit area.. The increase in size of agricultural land being cultivated shall contribute to increased production on an annual basis. The annual net incremental increase in farm income per ha in for CIS beneficiaries vegetable production is PhP 88,566. For rice production an annual incremental increase in farm income is estimated at PhP 56,350 (see Appendix 9 Table 9.3 & Table 9.4).

146. As FMRs improve, the VOC shall decline due lower gasoline consumption as well as lower costs of repairs and maintenance. The model indicates that the VOC without the project has decreased from PhP 18.31 to PhP 4.55 per ton-km when transporting agricultural products to the market. This translates to a VOCs of PhP 13.76 per ton-km. In the case of the VOCs for passenger per km, an incremental savings of PhP 2.67 has been estimated (refer to Appendix 9, Table 9.2).

147. The time that can be saved by a household in terms of fetching water on a daily basis can be devoted to economically productive activities and was monetized based on the prevailing wage rate in the area. Results show that the annual incremental man-days saved per HH is 30.42 man-days which is translated to an annual incremental benefits of PhP 7,756 per HH (see Appendix 9 Table 9.5). For foot paths, a given household can save an annual incremental equivalent of 468 man-days saved which is translated in an annual incremental benefit of PhP 5,466 per household (see Appendix 9 Table 9.6).

148. **Other benefits:** Additional benefits will come from the Project's capacity building interventions. It is expected that with the scaling up of the SMPIPs activities, an additional 189 POs/LIGs/IAs/BAWASAs shall be capacitated and are expected to administer and effectively monitor CHARMP2 sub-projects. An additional PPIP for each of the additional 18 Barangays shall be completed. About 27 LGUs are expected to issue resolutions to adopt

and integrate the originally completed PPIPs into their respective municipal and provincial plans. At the end of the project, an additional 36 POs/IAs/BAWAs/LIGs/BPMETS whose members are poor and are mostly women are expected to be formed. The implementation of the CWCFMA shall result in the completion of one (1) integrated watershed management plan (IWMP) and an additional 270 ha of agroforestry plot established. The AAIGA component is expected to organize an additional 37 marketing groups and capacitate them in preparation of their respective enterprise development plans (EDPs). An additional 90 LIG groups shall have been organized coached, mentored and provided with Livelihood Assistance Fund (LAF). For the RID component, an additional 31 units of community infrastructure including solar dryers, multi-purpose warehouse and greenhouses shall likewise be provided for this proposed project.

**149. C.2 Financial analysis and household incomes:** Financial analysis was carried out for six (6) subprojects (a subproject consists of aggregate of similar households or farm models). Results show that FIRR for FMRs and CIS subprojects at full development are estimated at 32.02% and 61.79 %, respectively. The FIRR for tramlines and foot paths are respectively estimated at 16.61% and 10.11%. For LAF provision, the FIRR is valued at 25.44% (Table 6). For rice farmer households that will avail of CIS rehabilitation, the annual average farm household incomes shall increase incrementally by PhP 37,754. For vegetable farmers, the incremental increase in annual average was estimated at PhP 59,339. For a given member-household of LAF beneficiaries, the annual incremental increases in HH incomes are correspondingly estimated at PhP 1,263 and PhP 1,371 among LIG HHs participating in Robusta coffee and Achuete Trading enterprises, correspondingly (refer to Appendix 9, Table 9.7)

**Table 8: Summary of Financial Analysis by sub-projects**

YEAR	FINANCIAL NET INCREMENTAL BENEFITS PHP (in '000)						Total Benefits
	FMR	CIS	FP/FB	DWS	TL	LAF	
2017	(124,925.00)	(29,500.00)	(39,910.00)	(13,360.00)	(4,000.00)	(9,000.00)	(220,695.00)
2018	(59,637.50)	(28,705.56)	(23,090.83)	(732.42)	(8,000.00)	1,777.83	(118,388.47)
2019	72,094.96	47,232.22	11,009.46	7,392.87	2,679.60	2,311.17	142,720.28
2020	72,117.54	47,232.22	11,020.85	7,410.48	2,679.60	2,488.96	142,949.64
2021	72,140.72	47,232.22	11,032.54	7,428.13	2,679.60	2,488.96	143,002.16
2022	72,164.51	47,232.22	11,044.53	7,445.81	2,679.60	2,488.96	143,055.62
2023	72,188.92	47,232.22	11,056.84	7,463.53	2,679.60	2,488.96	143,110.06
2024	72,213.99	47,232.22	11,069.48	7,481.28	2,679.60	2,488.96	143,165.51
2025	72,239.71	47,232.22	11,082.45	7,499.06	2,679.60	2,488.96	143,221.99
2026	72,266.12	47,232.22	11,095.76	7,516.88	2,679.60	2,488.96	143,279.53
2027	72,293.23	47,232.22	11,109.43	7,534.73	2,679.60	2,488.96	143,338.16
2028	72,321.06	47,232.22	9,616.91	3,017.47	2,679.60	2,488.96	137,356.21
2029	72,349.63	47,232.22	-	-	-	2,488.96	122,070.81
2030	72,378.96	47,232.22	-	-	-	2,488.96	122,100.14
2031	72,409.08	47,232.22	-	-	-	2,488.96	122,130.26
2032	72,440.00	47,232.22	-	-	-	2,488.96	122,161.18
2033	72,471.75	47,232.22	-	-	-	2,488.96	122,192.93
2034	72,504.36	47,232.22	-	-	-	2,488.96	122,225.53
2035	72,537.84	47,232.22	-	-	-	2,488.96	122,259.01
2036	72,572.22	47,232.22	-	-	-	2,488.96	122,293.40
2037	72,607.53	47,232.22	-	-	-	2,488.96	122,328.71
2038	78,781.30	47,232.22	-	-	-	-	126,013.52
TOTAL	1,268,530.90	886,438.87	46,137.43	56,097.81	14,795.96	39,890.22	2,311,891.18
IRR	32.02%	61.79%	10.11%	36.99%	16.61%	25.44%	34.13%
NPV							

PHP	₱188,426.98	₱176,190.23	₱292.38	₱15,263.56	₱641.41	₱5,066.44	₱375,078.07
USD	USD 4,187.27	USD 3,915.34	USD 6.50	USD 339.19	USD 14.25	USD 112.59	USD 8,335.07
BCR	1.516860342	2.515891936	0.863110906	1.674574823	1.045550748	1.647377835	
DB	₱552,987.70	₱292,418.98	₱66,270.91	₱37,890.49	₱14,722.72	₱12,892.52	
DC	₱364,560.72	₱116,228.75	₱76,781.45	₱22,626.93	₱14,081.30	₱7,826.09	

150. **C.3. Economic Analysis:** Following key assumptions used in the economic and financial analysis of the Programme- (i) the benefits have been estimated over a 20 year timeframe at constant February 2016 prices using a discount rate of 15% (the NEDA standard discount rate applied to assessing investment projects); (ii) the benefits that have been included in computing the economic and financial analysis include only those benefits which could be realistically quantified; (iii) use of a standard conversion factor (SCF) of 0.833 based on the current shadow exchange rate (SER) of 1.20 for non-traded output and input prices respectively, (iv) use of parity prices based on border prices for traded commodities such as fertilizer and rice (palay), (v) shadow wage rate of 0.60 based on the opportunity cost of labor was used, and (vi) the full benefits for FMRs, CISs, Tramlines and other community infrastructure shall be obtained right after completion of construction, (viii) for LIGs full development stage of the livelihood enterprises shall be on the third year of business operation. The project as a whole yields an Economic Internal Rate of Return of 22%, a benefit-cost ratio of 1.30, a Net Present Value of PhP 176.68 million (USD 3.926 million). See Appendix 9 for details.

**Table 9: Summary of Results of the Financial and Economic Analysis**

ITEMS	Indicators			
	NPV (PHP)	NPV (USD)	BCR	IRR
<b>Financial Analysis</b>	₱177,435.88	USD 3,943.02	1.22	20.91%
<b>Economic Analysis</b>	₱176,680.08	USD 3,926.22	1.30	22.46%

151. **Sensitivity Analysis:** A sensitivity analysis was also undertaken to assess how varying the assumptions change the economic parameters of the project. The analysis shows that the programme benefits are very robust and the investment in the programme is sound under various adverse conditions. Table below provides the summary results of the sensitivity of CHARMP2 Scale-Up on the basic economic parameters. Subjecting the project to 20% decrease in benefit can be absorbed by the project based as the EIRR, BCR and NPV shall satisfy the hurdle rate. The proposed project can likewise afford to absorb a 20% increase in cost and a 2-year delay in project implementation. Scenarios. The viable economic parameters of the project is unattainable only in the worst case scenario where a (i) 20% decrease in project benefits combines with (ii) a 20% increase in cost, and a (iii) 2-year delay in project implementation.

**Table 10. Summary results of sensitivity analysis for CHARMP 2 scale up**

ITEMS	Indicators							
	NPV (PHP in '000)	SI	NPV (USD in '000)	SI	BCR	SI	IRR	SI
Base case	₱176,680.08		USD 3,926.22		1.30		22.46%	
A. 10 percent decrease in benefit	₱99,474.08	43.70	USD 2,210.54	43.70	1.17	10.00	19.32%	13.96
B. 20 percent decrease in benefit	₱22,268.09	87.40	USD 494.85	87.40	1.04	20.00	16.00%	28.75
C. 10 percent increase in cost	₱114,098.12	35.42	USD 2,535.51	35.42	1.17	9.51	19.47%	13.32
D. 20 percent increase in cost	₱51,516.16	70.84	USD 1,144.80	70.84	1.07	17.37	16.89%	24.81
E. 2- yr project delay	₱126,622.61	28.33	USD 2,813.84	28.33	1.28	1.00	22.30%	0.70
F. Combination of A, C and E	₱22,435.78	87.30	USD 498.57	87.30	1.05	19.38	16.24%	27.69
G. Combination of B, D and E	(₱81,751.05)	146.27	(USD 1,816.69)	146.27	0.85	34.56	10.59%	52.87

#### D. Sustainability and Risks:

152. The economic project risks and sustainability of the proposed Scaling Up of CHARMP2 are classified into three risk categories; (i) institutional, (ii) Market and (iii) Climate. The table below shows the various risk description, probability occurrence, proposed mitigating measures and the impact of a scenario of occurrences in the basic economic parameters of the project.

**Table 11: Project Risks and Sustainability**

Risks	Risk description	Probability of occurrence	Mitigation measures in programme design	Comparative sensitivity analysis result (Proxy)
<b>Institutional</b>	Delay in procurement and construction due to FPIC/EEC requirements of the GoP and Inclement weather	Low to Medium	Pre-implementation activities shall be facilitated by PSO. Prior reviews by PSO and IFAD prior to awarding of contract shall be facilitated. Regular monitoring by PMG and BPMET shall be implemented.  Competent service providers recruited;	Benefits lag by 2 years: IRR= 22.30% NPV= USD 2.81 million BCR= 1.28

	Commitment of LGU to provide counterpart funds	Low to Medium	LGU counterpart funds have been reduced from 30% to 10% as a government policy. Facilitate formal agreement from SB to provide counterpart fund	Decrease in revenues by 10% due to Decline in Project scope IRR= 19.32% NPV= USD 2.21 million BCR= 1.17
<b>Market</b>	Lower market prices for agricultural outputs	medium	Provision of FMRs shall reduce transport cost and losses/spoilage due to transit can offset lower output prices  Provisions of technical training among farmers can increase farm production	Decline in benefits due to decline in output prices by 20%: IRR= 1.04% NPV= USD 0.494 million BCR= 16%
<b>Climate Risks</b>	Low rainfall, floods and soil erosion, etc	Medium	Programming of construction work and agricultural production schedules to avoid periods of low rainfall and flooding	Delay in construction by two (2) years plus 10% decrease in benefit and 10% cost increase IRR= 16.24% NPV= USD 0.498 million BCR=1.28

153. **Environmental impact:** The CHARMP interventions are participatory and aimed at environmentally sound sustainable development, therefore the project is expected to have significant positive environmental impacts. The project assists communities to develop PPIPs at the barangay level as well as at the ancestral domain level that incorporate environmental and sustainable development issues. In addition, the project is helping the communities obtain Certificate of Ancestral Domain Title (CADT), which improves land tenure security and provides incentives for sustainable land-use practices. The reforestation and agroforestry activities contribute to a reduction in soil erosion and improvement of water holding capacity of the watershed. The project also supports the establishment of community/group tree nurseries in accessible locations to facilitate tree planting by community members who are not directly involved in reforestation and agro-forestry activities. To ensure the mitigation of the localized negative environmental impacts caused by rural infrastructure development, an Environmental Compliance Certificate (ECC) is secured prior to commencement of the project activities. The implementation of activities outlined for minimizing the negative impacts as a result of construction works is monitored by the PSO, the LGUs and the communities through the BPMETs.

## E. Key Issues discussed with the Government

154. The following issues were discussed and agreed with the key officials and Staff of Special Project Concerns and Management Assistance Division (SPCMAD) and Project Development Service (PDS) of the DA Central Office and NEDA-CAR:

- (i) The loan approval process may need to go through the government approval process of projects costing less than PhP 1 billion, which may take long. Dialogues with NEDA-CAR, and PDS and SPCMAC of the DA Central Office resulted in an informal agreement on their

commitment to fast-track the approval by giving priority to this proposed project and to undertake a joint review of the proposal.

(ii) There is a need for undertaking preliminary preparation for all additional expansion areas when the Additional Financing becomes effective by May 2016. In particular, the RID component pre-implementation activities such as the preparation of Feasibility studies and addressing the clearance requirements prior to construction including the FPIC and the ECC should be done.

(iii) There is a need to address the proposed project's Budget Cover for 2017 since this has not been included in the 2017 budget provision. The immediate action suggested is to review if there are unutilized funds by the DA which can be utilized for this purpose.

## **VI. Next Steps/ Milestones**


1. Submission by NEDA-CAR of Project Evaluation Report to ICC Secretariat by
2. ICC secretariat (schedules presentation) to ICC-technical board
3. DBM availability of counterpart funds(FOA/Budget cover)
4. Submission of IFAD's President report to the IFAD Executive Board by 1 April 2016
5. Presentation to the Regional Development Council for endorsement March, 2016
6. ICC-TB Review and endorsement by 17<sup>th</sup> March 2016
7. ICC- Cabinet Committee approval by 21<sup>st</sup> of March 2016
8. NEDA Board confirmation by 8 April 2016
9. Special Presidential Authority and Signature of loan amendment



## Appendix 1: Criteria for Additional Financing & CHARMP2 Response

IFAD Criteria for Additional Financing	CHARMP2 Compliance
1. A request for financing has been received from the Borrower	<ul style="list-style-type: none"> <li>A request letter from the borrower shall be submitted as soon as the proposal is approved by the government</li> <li>An initial letter from the Department of Agriculture as Lead Project Agency was submitted to IFAD on January 18, 2016.</li> </ul>
2. The interventions to be financed by the top up loan are consistent with the on-going project objective and up-scaling of the interventions	Yes, these are consistent with CHARMP2 goals and objectives.
3. The top-up financing will be used for financing economically viable activities where incremental cost-benefit ratio is positive	Yes; livelihood interventions, agroforestry, benefits from rural infrastructure, employment generation and skills training, IGA will accrue to benefits for poor rural households.
4. Description of the activities should be supported with relevant cost tables	Proposed activities are described in Appendix 9 and detailed cost Tables provided in Appendix 9.
5. The top-up loan will be used for financing incremental outreach in line with the Appraisal and measured usually by assessing unit cost to reach the project beneficiaries	Yes; the top-up loan will be used for financing incremental outreach in line with the Appraisal of the CHARMP2 and measured by assessing unit cost to reach the project beneficiaries;  Average investment at Appraisal = USD 2,927/HH Average investment for top-up loan = USD 572/HH
6. Top-up loan will be used within the framework provided by various IFAD policies relating to targeting, gender, rural finance, environment and climate change.	Yes, see Appendix 10: Compliance with IFAD Policies for details
7. The incremental results expected from the top-up financing will be integrated with the results expected from the Appraisal in order to monitor results holistically	Yes, these are integrated in the CHARMP2 Log frame in its new format as recommended by IFAD.
8. Any potential problem in the latest portfolio review	No; Quantitatively, of all the IFAD-supported projects in the Philippines, only CHARMP2 has made some significant contributions in financial and physical terms in 2015.
9. Whether IFAD loan and grant have been fully disbursed;	As of 31 January 2016 about 88% of financing from IFAD loans has been disbursed;
10. Whether Fiduciary management is compliant with the requirements of IFAD:	Yes; see Appendix 6: Financial management and disbursement arrangements and Procurement for details.
11. Is the audit opinion for last fiscal year 2013-14 unqualified or qualified with minor observations	The Auditor's Report for the fiscal year 2013-14 is unqualified. See Appendix 3: Auditor's Report for the year 2013-14 for details
12. Absorptive and implementation capacity of the Project:	The Project has (i) full complement of staff and arrangements for implementation; (ii) partnering with LGUs for counterpart funding and implementation support envisaged; and (iii) the counter-part funding support from the Government of the Philippines is assured

## Appendix 2: The Letter of Request from the Secretary of Agriculture



Republic of the Philippines  
Department of Agriculture  
**OFFICE OF THE SECRETARY**  
Elliptical Road, Diliman  
Quezon City 1100, Philippines

1898

18 January 2016

**MS. HOONAE KIM**  
Director  
Asia and the Pacific Region  
International Fund for Agricultural Development  
Rome, Italy

Subject: Second Cordillera Highland Agricultural Resource Management Project (CHARMP2) – IFAD Loan 749-PH; IFAD Grant 1030-PH and OFID Loan 1224P – Request for 2-year extension with additional financing

**Dear Ms. Kim:**

*Warmest greetings!*

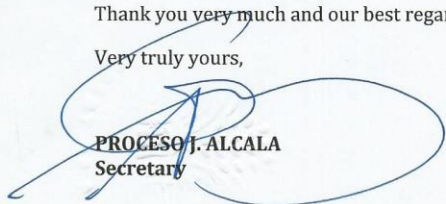
The IFAD and the Government of the Philippines approved the one year extension without additional cost of the Project as recommended by the IFAD-NEDA Supervision and Implementation Support (SIS) Mission of 26 February to 16 March 2015 as contained in the IFAD Management letter (attached) dated 30 March 2015.

In this regard, we wish to inform you of our desire to request for additional financing for a further 2-year extension from 2017-2018 of the Project. The 2-year extension is anchored on the same Mission's observations on the success manifested during the last two years of the Project's implementation; the commitment of the national and local authorities to a participatory and locally-driven development model for the Cordillera; and support to local economic growth as it was observed to be relevant for poorer households, whose participation has been active and significant.


The Department of Agriculture is in the process of finalizing the proposal following comments and recommendations from IFAD on the initial draft. This will be submitted within February 2016.

Thank you very much and our best regards.

Very truly yours,



**PROCESO J. ALCALA**  
Secretary




DEPARTMENT OF AGRICULTURE  
in replying pls cite this code  
For Signature: S-01-16-0299  
Received - 01/18/2016 08:25 AM

Cc:

**Mr. Rolando G. Tungpalan**  
Deputy Director General  
National Economic & Development Authority  
Pasig City

**Mr. Roberto Tan**  
National Treasurer  
& OIC-International Finance Group  
Department of Finance  
Intramuros, Manila



## Appendix 3: Compliance with IFAD Policies

This reviews the adherence of project design to the following IFAD policies and strategies:

- a. Gender sensitive design
- b. Targeting policy
- c. Climate change strategy
- d. Good governance
- e. Checklist on Indigenous Peoples
- f. Social Environmental and Climate Assessment Procedures (SECAP) Review Note

### A. Pre-requisites for gender sensitive design<sup>3</sup>

	Yes	No	Partial	Issues and Recommendations
<b>1. Project document contains poverty and gender analysis data.</b>	X			
<b>2. Based on the above, the project articulates a gender strategy that</b>				
i) Expand women's access to and control over fundamental assets – capital, land, knowledge and technologies;	X			<p><b>Monitoring is normally handled by men. Provision of credit had been addressed to men.</b></p> <p><i>Through CHARM2 Project, access to credit was provided to in which 60% are women. Likewise, 40% of the membership in the Barangay Participatory Monitoring and Evaluation Teams (BPMET) are women. 48% of the women members of the different organization were strengthened through the trainings conducted by the CWCFMA and AAIGA Component.</i></p>
ii) Strengthen their agency – thus their decision-making role in community affairs and representation in local institutions;	X			<p><b>Male dominated leadership.</b></p> <p><i>The decision-making roles of women have been strengthened through capacity building activities such as leadership and skills trainings and actual experience in performing leadership roles in Project implementation activities. At present, women leadership of the various organizations supported by the Project is at 45%, which is significantly higher than the target of 30% at appraisal.</i></p>

<sup>3</sup> Adapted from: "Mainstreaming a gender perspective in IFAD's operations – Plan of Action, 2003-2006"

	Yes	No	Partial	Issues and Recommendations
iii) Improve well-being and ease workloads by facilitating access to basic rural services and infrastructures.	X			<p><b>Lack of basic rural infrastructure in the communities that is more burdensome on women.</b></p> <p><i>Provision of footpaths, waterworks, irrigation, and other infrastructure projects that ease the burden of women in terms of time and effort spent in performing their daily chores.</i></p>
<b>3. The project identifies operational measures to ensure gender- equitable participation in, and benefit from, planned activities, and in particular:</b>				
Sets specific targets in terms of proportion of women participants in different project activities and components;	X			<p><b>No specific targets of women participation.</b></p> <p><i>At present, women participation is higher than the target of IFAD on gender equitable participation. This is apparent in the various organizations supported by the Project. (ex: Livelihood Interest Groups, Refo and Agroforestry Peoples Organizations, Irrigators' Associations, Barangay Waterworks &amp; Sanitation Association)</i></p>
Ensures women's participation in project-related decision-making bodies; and	X			<p><b>Traditionally, women are minimally consulted when it comes to project related decision-making.</b></p> <p><i>At present, based on the profiles of organizations assisted by the Project, women comprise around 45% of the top leadership positions. Women membership in organizations is at 53% which is also higher than the target of 40%.</i></p>
Clearly reflects actions identified in the gender strategy in the cost	X			Yes
Ensures that the Terms of Reference of project Management and coordination units include responsibilities for gender mainstreaming, especially at level of project director/manager, M&E officer, coordination officer and other senior officers;	X			Yes

	Yes	No	Partial	Issues and Recommendations
Explicitly addresses the issue of present and likely availability of field staff to ensure outreach to women, and designs activities accordingly;	X			<b>No issue.</b>  <i>Field staff appropriately schedule activities in the communities based on the availability of women and other marginalized groups. 55% of the technical field staff assigned to the project are women. 96% of Project staff belongs to the Indigenous People in the Cordillera.</i>
Establishes experience working with women and marginalized groups and willingness to work with these groups is a criterion for staff selection.	X			Yes.
<b>4. The project logframe and suggested monitoring system specify sex-disaggregated performance and impact indicators.</b>	X			Yes
<b>5. The project provides opportunities for policy dialogue on issues related to gender equality and empowerment of women.</b>	X			Yes.  <i>Meetings of the various structures of the Project is open to the discussion of issues related to gender equality and empowerment of women.</i>

## B. Compliance with IFAD targeting policy

	Key policy principals	Degree of compliance	Comments and observations
1	Focus on rural people who are living in poverty and experiencing food insecurity, and who are able to take advantage of the opportunities to be offered (sometimes referred to as “the productive poor” or “active poor”);	Yes	This is incorporated in the Project selection criteria.
2	Expand outreach to proactively include those who have fewer assets and opportunities, in particular extremely poor people as referred to in SDG 1;	Yes	The programme will identify very poor women and men through participatory methods and pro-actively target them for programme activities;
3	Include marginalized groups, such as minorities and indigenous peoples, and address their specific needs;	Yes	Beneficiaries are mostly IPs.
4	Address gender differences and have a special focus on women within all identified target groups – for reasons of equity, effectiveness and impact – with particular attention to women heads of household, who are often especially disadvantaged;	Yes	There is special focus on very poor women especially women headed households. Women comprise around 45% of the top leadership positions. Women membership in organizations is at 53% which is also higher than the target of 40%.
5	Recognize that relative wealth or poverty can change rapidly due to external shocks and that this vulnerability needs to be addressed;	Yes	Farmer Business School, School-on-Air, Agroforestry, Livelihood Assistance Fund, Environmentally Safe Farming, Farm to market access, Climate-smart and climate resilient programs address sustainability and poverty in the upland productivity systems and reduce the vulnerability of women to external shocks.

	Key policy principals	Degree of compliance	Comments and observations
6	Clearly identify at the programme or project design stage who the intended target groups are and why, and consistently apply these categories, during implementation, in monitoring and evaluation (internal and external) of targeting performance. There will be cases when better-off people may need to be included – because of economic and market interdependencies, to avoid conflict, or to engage them as leaders and innovators. In such cases, the rationale and justification should be provided, and risks of excessive benefit capture carefully monitored;	Yes	The target beneficiaries are those poorer members of the rural highland communities. Well-off groups with existing businesses are included to act as models and innovators. Farmers with small farms that need to be enhanced are the target beneficiaries of the agroforestry component to act as demonstration farm for improved technologies to be disseminated in the community.
7	Identify and work with like-minded partners at local, country, regional and international levels to develop a shared understanding of both the dynamics of rural poverty in different contexts and successful targeted approaches;	Yes	Normally projects are implemented in isolation. It may be good to invite successful projects to serve as resource persons during project implementation. Such as: LAF- successful LIG's Agro- Apayao
8	Pilot and share learning on successful approaches to targeting hard-to-reach groups; and	Yes	Inaccessible project barangays and barangays with uncooperative leaders. The project's successful experience in dealing with partners will be replicated.
9	Build innovative and complementary partnerships with actors that can reach target groups that IFAD cannot reach with the instruments at its disposal.	Partly	Private sector partnerships particularly with the Livelihood Assistance Fund marketing linkages shall be developed to benefit the highland communities and improve value retention for their produce.

### C. Compliance with IFAD climate change strategy

Goal: To maximize IFAD's impact on rural poverty in a changing climate	
Statements of purpose:	CHARM2 Project response
1. To support innovative approaches to helping upland farmers to build their resilience to climate change.	Reforestation and agroforestry in slope areas, selection of livelihood projects are climate-resilient such as heirloom rice, coffee and native livestock raising.
2. To help upland farmers take advantage of available mitigation incentives and funding.	Such facilities such as free planting materials and capability building trainings are provided in the project design
3. To conduct advocacy on climate change, rural development, highland agriculture and food security.	The project design shall implement the School on the Air on Natural Resource Management while highland agriculture and food security will be addressed by the design of the other components of CHARM2 Project additional financing.

### D. Good Governance Framework

This Good Governance Framework is based on the following key principals:

1. **Transparency** is the foundation for accountability and participation. Information in the public domain and an open & visible decision-making processes signals that there is nothing to hide.
2. **Accountability** implies probity in how resources are mobilized and used, and for what ends.
3. **Participation (or inclusion)** represents the “demand side” of good governance, and implies that people should have a voice in the decisions that may affect them. The involvement of affected

communities in all stages of projects can simultaneously improve development outcomes and reduce the scope for fraud and corruption.

Project processes	Actions to be taken	Accountability and transparency	Participation and inclusion	Guidelines/ regulations to be followed
<b>Targeting</b>	<ul style="list-style-type: none"> <li>Ensure inclusion of disadvantaged groups in project activities. This requires targeting policies and monitoring of composition of beneficiary project groups etc.</li> </ul>	<ul style="list-style-type: none"> <li>Progress reports</li> <li>Outcome surveys</li> <li>IFAD supervision reports</li> </ul>	<ul style="list-style-type: none"> <li>Consultation at the Community were undertaken in selecting beneficiaries for LAF, AF and infrastructure projects</li> <li>Consultation at the LGU level were undertaken to confirm counterpart contribution</li> <li>Report back to project</li> </ul>	<ul style="list-style-type: none"> <li>IFAD appraisal report</li> <li>Project Logical Framework</li> <li>Project Implementation Manual</li> </ul>
<b>Planning (project level)</b>	<ul style="list-style-type: none"> <li>Annual plans for project activities need to conform to GoP processes and IFAD appraisal, and be approved by RISC and IFAD</li> </ul>	<ul style="list-style-type: none"> <li>PSO report to RISC</li> <li>IFAD &amp; GoP approval of AWPB</li> <li>Progress reports on implementation of AWPB</li> </ul>	<ul style="list-style-type: none"> <li>Consultation meetings with partner LGUs at design stage.</li> <li>Disclosure of AWPB to PMG</li> <li>Consultation with Civil Society Organizations</li> </ul>	<ul style="list-style-type: none"> <li>GoP procedure for annual budget</li> <li>IFAD AWPB guidelines</li> <li>GoP guidelines on Annual budget preparations</li> </ul>
<b>Planning (local level)</b>	<ul style="list-style-type: none"> <li>Participation in plans at local level by LGUs, Peoples Organizations/Indigenous Peoples Organization, BPMETs and Provincial Coordination Offices</li> </ul>	<ul style="list-style-type: none"> <li>PMG Quarterly reports</li> <li>PCO reports to PSO</li> </ul>	<ul style="list-style-type: none"> <li>Progress reports feedback to LGUs and DA-RFO-CAR</li> <li>Consultation with Civil Society Organizations (CSOs)</li> </ul>	<ul style="list-style-type: none"> <li>Participatory planning guidelines</li> <li>GoP guidelines on Annual budget preparations</li> </ul>
<b>Procurement</b>	<ul style="list-style-type: none"> <li>Transparent and efficient procurement process to ensure best quality/price.</li> <li>To train staff and POs on updated Government and IFAD procurement procedures</li> <li>IFAD prior reviews</li> </ul>	<ul style="list-style-type: none"> <li>External audits cover procurement processes</li> <li>IFAD supervision missions spot check procurements</li> <li>IFAD technical audits if needed to check value for money and leakages.</li> </ul>	<ul style="list-style-type: none"> <li>PSO and IFAD receive audit report</li> <li>IFAD supervision reports and any technical audits by IFAD &amp; GoP.</li> <li><input type="checkbox"/> LGU involved in checking procurement and community level procurement</li> </ul>	<ul style="list-style-type: none"> <li>GoP Procurement Rules and Regulations (RA9184)</li> <li>IFAD procurement guidelines</li> <li>Annual procurement plan</li> <li>Harmonized Philippine Procurement procedure</li> </ul>

Project processes	Actions to be taken	Accountability and transparency	Participation and inclusion	Guidelines/ regulations to be followed
<b>Physical activities and outputs</b>	<ul style="list-style-type: none"> <li>Need to monitor progress in terms of quantity and quality.</li> </ul>	<ul style="list-style-type: none"> <li>Regular monitoring reports</li> <li>Part of outcome surveys at year 2 to check on outputs delivered to beneficiary households</li> <li>Progress reports of implementation partners (BPMETs, POs, etc.)</li> <li>Project website</li> <li>IFAD supervision and</li> </ul>	<ul style="list-style-type: none"> <li>Project Review workshops with Project partners</li> <li>Project progress reports to DA, IFAD &amp; RISC</li> </ul>	<ul style="list-style-type: none"> <li>Project AWPB</li> <li>IFAD appraisal report</li> <li>Project Logframe</li> </ul>
<b>Financial management</b>	<ul style="list-style-type: none"> <li>Minimise cash transactions</li> <li>Financial Management Training for POs, LIGs and Project staff</li> <li>IFAD implementation support will train staff in project accounting and financial processes.</li> </ul>	<ul style="list-style-type: none"> <li>Financial reports of POs, LIGs and CFIs</li> <li>Regular Accounting reports</li> <li>External audit</li> <li>IFAD supervision mission reports will check financial statements &amp; accounting system</li> </ul>	<ul style="list-style-type: none"> <li>Financial reports of POs, LIGs and CFIs presented and accepted by all members.</li> <li>Rotation of group leaders and regular elections.</li> <li>Audit report to PSO &amp; IFAD</li> <li>Consolidated financial statements to IFAD</li> </ul>	<ul style="list-style-type: none"> <li>IFAD financial reporting guidelines</li> <li>Government accounting systems</li> <li>CoA guidelines</li> </ul>
<b>Results and impact</b>	<ul style="list-style-type: none"> <li>Reporting of outcomes and results</li> <li>Knowledge management to utilise information generated</li> </ul>	<ul style="list-style-type: none"> <li>IFAD supervision reports</li> <li>IFAD RIMS indicator reporting</li> <li>CHARMP2 website (<i>geotagging using google earth</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Project website with results of M&amp;E</li> <li>Experience sharing publications and workshops.</li> </ul>	<ul style="list-style-type: none"> <li>Project M&amp;E guidelines</li> <li>IFAD RIMS guidelines</li> <li>Project KM strategy</li> </ul>
<b>Complaints remedies</b>	<ul style="list-style-type: none"> <li>Enforce and continue to apply government complaints guidelines</li> <li>Ethical code for staff to avoid conflicts of interest and including sanctions for fraudulent and corrupt practices</li> <li>IFAD implementation support will train staff in project accounting and financial processes.</li> </ul>	<ul style="list-style-type: none"> <li>Project Management and implementation partners</li> <li>Project management External audit</li> <li>IFAD supervision mission reports will check financial statements &amp; accounting system</li> </ul>	<ul style="list-style-type: none"> <li>Formal and informal communications to Project staff and implementation partners</li> <li>regular elections.</li> <li>Audit report to PSC &amp; IFAD</li> <li>Consolidated financial statements to IFAD</li> <li>IFAD supervision reports to IFAD &amp; GoTN.</li> </ul>	<ul style="list-style-type: none"> <li>Gov't complaints guidelines</li> <li>Staff ethical code systems</li> <li>ToR for internal and external audit</li> </ul>

Project processes	Actions to be taken	Accountability and transparency	Participation and inclusion	Guidelines/ regulations to be followed
Results and impact	<ul style="list-style-type: none"> <li>Reporting of outcomes and results</li> <li>Knowledge management to utilise information generated</li> </ul>	<ul style="list-style-type: none"> <li>IFAD supervision reports</li> <li>IFAD RIMS indicator reporting</li> </ul>	<ul style="list-style-type: none"> <li>Project website with results of M&amp;E</li> <li>Experience sharing publications and workshops.</li> </ul>	<ul style="list-style-type: none"> <li>Project M&amp;E guidelines</li> <li>IFAD RIMS guidelines</li> <li>Project KM strategy</li> </ul>
Complaints remedies	<ul style="list-style-type: none"> <li>Complaints procedure</li> <li>Ethical code for staff to avoid conflicts of interest and including sanctions for fraudulent and corrupt practices</li> </ul>	<ul style="list-style-type: none"> <li>Investigative processes</li> </ul>	<ul style="list-style-type: none"> <li>Reports to RDPR &amp; IFAD</li> <li>Feedback to PLF, FMS, federations if needed</li> </ul>	<ul style="list-style-type: none"> <li>Gov't complaints guidelines</li> <li>Staff ethical code</li> </ul>

### E. Piloting the checklist on Indigenous Peoples in QE

While it is difficult to capture in a checklist the holistic approach to be used in designing projects with indigenous peoples, this checklist should be used during project design to capture at least the minimum standard a project should respond to in order to be in compliance with IFAD Policy on Engagement with Indigenous Peoples. It is essential that design and implementation teams **actively listen** to indigenous people on the ground when designing projects, to ensure that projects respond to their perspectives and needs. This will help designing sustainable projects and increase IFAD's effectiveness with indigenous peoples' communities.

Abstract from IFAD Policy on IPs: Across countries and continents, many terms and definitions are used to refer to indigenous peoples.<sup>4</sup> The 2007 United Nations Declaration on the Rights of Indigenous Peoples<sup>5</sup> has not adopted a universal definition. While the prevailing view today is that no formal universal definition is necessary for the recognition of indigenous peoples' rights, there is in practice a large degree of convergence among international agencies. Consistent with international practice and for the purposes of this policy, IFAD will use a working definition of indigenous peoples based on the following criteria: (i) *Priority in time, with respect to occupation and use of a specific territory;* (ii) *The voluntary perpetuation of cultural distinctiveness, which may include the aspects of language, social organization, religion and spiritual values, modes of production, laws and institutions;* (iii) *Self-identification, as well as recognition by other groups, or by state authorities, as a distinct collectivity;* and (iv) *An experience of subjugation, marginalization, dispossession, exclusion or discrimination.*

<sup>4</sup> Natives, First Nations, tribes, ethnic minorities, indigenous nationalities, aboriginals, indigenous communities, *pueblos originarios* (Bolivia), *adat* communities (Indonesia), scheduled tribes (India), hill peoples, highland peoples (Cambodia), etc.

<sup>5</sup> United Nations Declaration on the Rights of Indigenous Peoples: <http://www.un.org/esa/socdev/unpfi/en/declaration.html>.

DETAILS	SCORE (1-6)	Issues
1. The project design report is in line with IFAD Policy on Engagement with Indigenous Peoples and takes into account the socio economic and cultural specificities of the indigenous peoples' communities living in the project area. It provides baseline information on their demographic, social, cultural, and political characteristics; the land and territories that they have traditionally owned or customarily used or occupied; and the natural resources they manage or depend upon.	6	No Issues
2. The project design report includes disaggregated data by indigenous group and geographical location	6	No Issues
3. The project design report identifies, interventions which respond to the needs and priorities as expressed by the targeted indigenous peoples' communities and which build on their knowledge, cultural systems, and institutions.	6	No Issues
4. The design document describes – and the project/programme implements – <b>operational measures</b> to ensure IPs equitable participation in, and benefit from, project activities. These will generally include:	6	No Issues
4.1. Ensuring that representatives of the indigenous peoples' communities, partners of the project, are present at all stages of the project cycle and that a consultation plan leading to their Free, Prior and Informed Consent is embedded in the project design and the consultation and participation process is documented	6	No Issues
4.2. Ensuring that project/programme activities are co-created and co-managed by the indigenous peoples communities	6	No Issues
4.3 Ensuring the service-providers and extension workers used by the project (public or private) have the capacity and are trained to reach out to indigenous peoples.	6	No Issues
4.4 Ensuring that the project design report includes measures to strengthen a) the social, legal and technical capacity of the government institutions to address IPs issues in the project area; b) IPs' institutions and organizations in the project area	6	No Issues
4.5 Ensuring that information disclosure on the project is in accordance with prevailing IPs' customs and traditions and printed material is written in the IPs language	6	No Issues

DETAILS	SCORE (1-6)	Issues
5. <i>M&amp;E mechanisms are participatory and adapted to capture indigenous peoples' perceptions and perspectives. M&amp;E systems include specific indicators to measure the well-being, poverty and sustainability in a way that is relevant to indigenous peoples.</i>	6	No Issues
<b>AVERAGE SCORE</b>	6	

## F: Social Environmental and Climate Assessment Procedures (SECAP) Review Note

### 1. Major landscape characteristics and Issues

The Cordillera Administrative Region (CAR) is characterized by sharp ridges, deep gullies and ravines. The topography ranges from gentle slopes along the main tributaries to severely steep slopes. The land cover consists of wooded grassland, shrubs wooded land, grassland, broadleaved, coniferous and open and closed forest, annual cultivated crop land and built up areas. Some Community Based Forest Management Agreements have been established. The main soil types are loam to loamy sand, mountain soils (undifferentiated), rough mountain land and the Langa silty clay loam.

#### 1.1 Socio-cultural context.

More than 50% of the population in upland CAR lives below the poverty line. Most of the rural population in the lowland and highland alike, formed in majority by indigenous peoples, crucially depend on agriculture or agriculture-related activities for their livelihoods and water plays an important role. Hence, degradation of the watersheds has far-reaching effects on the life of the rural population. Addressing the multi-dimensional poverty of the rural areas requires a multi-pronged approach including improving farm family income, food security and land tenure security.

#### 1.2 Natural resources and NRM.

At the time of the design of the CHARMP2, the Cordillera's forest land accounted for approximately 85% of the region. The actual forest cover, however, was estimated at about 37% of the total area. Deforestation in the region was already identified as a persistent problem which potentially caused soil erosion as well as deterioration of watersheds. The soil erosion has been accelerated by human interventions such as road construction and forest fires on very steep slopes. Strong flash floods were also viewed as a result of deforestation and a rise in the level of riverbeds due to siltation. Furthermore, the water discharge level of the watershed as well as the water yield during dry season had become irregular. As a consequence of the huge amount of silt in the rivers, dams and major irrigation facilities, a dam in Benguet province had ceased operation.

#### 1.3 Climate.

An analysis of 43 years data (1948 to 1990) on the frequency of tropical cyclones shows that there were only 3 tropical storms, 7 tropical depressions and 23 tropical typhoons that passed over Ifugao province (one of the six provinces in the CAR). Recent evidence suggests a tendency for wetter conditions during the dry season, as the frequency of heavy storms during this period have increased. This dynamic is most notable during La Nina periods. The number of rainy days has increased since 1990s, as has the inter-annual variability of onset of rainfall. Mean temperatures across the South Pacific have increased by approximately 1°C since 1970, at an average rate of 0.3°C per decade. Temperatures appear to be increasing more rapidly in the southern reach of the archipelago. Sea surface temperatures in the Pacific have increased between 0.6 to 1.0°C since 1910, with the most significant warming occurring after the 1970s.

Future projections point to an average temperature increase of between 1.7 and 3.0°C by 2050, with the highest increases projected to occur in the primary agriculture growing regions. Rainfall patterns are projected to vary, with some regions seeing up to 16% increases, while others experiencing a drying effect. Sea levels are projected to rise by the end of the century (2090-2099) by 0.35 m, although the spatial manifestation of this rise will not be uniform due to circulation changes and ocean density. Sea level rise is projected to result in a land loss of over 129,000 hectares (National Framework Strategy on Climate Change, 2010-2022).

#### 1.4 Key Issues.

The reasons for forest/watershed degradation vary from place to place and the processes are usually complex. In the highland of Benguet and Mountain provinces, cultivation of vegetables contributes to the expansion of agricultural frontiers at the expense of forest areas. While Kaingin (slash and burn farming) is commonly practiced in the region, the interval between activities has been shortened due to the population growth and the constant interventions at the same plots have reduced regeneration of secondary forests in the abandoned Kaingin plots. Forest fires caused by Kaingin practices and/or careless fires are also a major threat for watershed conservation. In addition, mal-practices in road constructions like cutting through fragile rugged terrains have sometimes triggered small-scale landslides.

Biodiversity loss poses another concern for the region. Some of the region's biological resources are now considered threatened according to the International Union for the Conservation of Nature Red Data Book. Department of Environment and Natural Resources (DENR)-CAR also reports that the more common wild animals have been observed to be decreasing.

Over 20 typhoons affect the country annually, with eight or nine making landfall. Other commonly occurring hazards include floods, droughts, landslides and mudslides, earthquakes and volcanoes. Recent decades have witnessed an increase in damaging extreme events, such as heavy rainfall and tropical cyclone activity, and this trend is likely to continue under a future climate. The future of typhoons is still a subject of much debate in the area of the Pacific where the Philippines is located, but some studies suggest that these are likely to intensify with rising sea surface temperatures, which would imply higher windspeeds and/or more intense rainfall, and greater consequent damage.

Flooding often results from heavy or prolonged rainfall associated with typhoons and tropical depressions. Prolonged heavy rainfall can destabilize soils along mountain-slopes, resulting in landslides and mudslides that cause severe damage to nearby villages. Heavy rainfall associated with typhoons and other weather systems may increase in both intensity and frequency under a changing climate. This could exacerbate flooding in existing flood-prone areas and increase landslide and mudslide risk, as well as introduce flood risk to new areas.

Major droughts are associated with El Niño years. Droughts in 1997-98 caused widespread crop failures, water shortages and forest fires in various parts of Philippines. Climate change projections suggest that an intensification of ENSO may occur, which has profound implications for agricultural production and thus food security and pricing. The country is already witnessing longer drought episodes, with attendant crop damage and often sharp declines in GDP.

Over 90 % of the CHARMP target group are indigenous people consisting of many tribes who live in the mountainous area. Free Prior and Informed Consent (FPIC) is a requirement by the Indigenous Peoples Rights Act of 1997 and its revised guidelines further described under National Commission on Indigenous Peoples (NCIP) Administrative Order No. 3, series of 2012.

## 2. Potential project's social, environmental, and climate change impacts and risks

### 2.1 Key potential impacts.

The CHARMP2 assists communities to develop Participatory Investment Plans (PIPs) at the Barangay level as well as at the ancestral domain level that incorporate environmental and

sustainable development issues. The project also helps communities to obtain Certificate of Ancestral Domain Title (CADT) and/or Certificate of Ancestral Land Title (CALT), which improve land tenure security and provides incentives for sustainable land-use practices. The progress on titling has been slower than expected and sub-projects on Land Titling are not included in the additional financing. It is worth examining whether the slow progress has any adverse impacts on sustainable land use.

Under the Additional Financing, the issuance of the required Certificate Precondition (CP) by NCIP, which attests to the granting of FPIC by the concerned indigenous cultural communities or indigenous peoples, will follow the process already established in CHARMP2. The process involves validation of the sub-project activities identified in the PPIPs. The barangays issue and forward a Resolution of Consent as a result of the validations to NCIP, as a basis for the CP. Validation is done as the sub-projects are identified by the communities themselves and included in their community plans. Importantly, the NCIP is a fundamental partner in the implementation of the Land Titling sub-component and a member of the Municipal Management Group (MMG) and the Provincial Management Group (PMG), under CHARMP2. Implementation under the Additional Financing will continue nurturing this already successful partnership.

The reforestation and agroforestry activities, which will be continued under the additional financing, contribute to a reduction in soil erosion and improvement of water holding capacity of the watershed. The establishment of community/group tree nurseries in accessible locations facilitate tree planting by community members who are not directly involved in reforestation and agro-forestry activities. Species selection for reforestation and agroforestry is based on demand from communities. The project promotes indigenous species for reforestation where ever possible.

The agriculture, agribusiness and income generating activities that promote ecologically sound practice through value-chain development and provision of agricultural support services to farmers willing to shift to environmentally sustainable agriculture, will also continue with the Additional financing. Furthermore, these activities provide technical support and micro-credit for individuals and small scale agribusiness to link environmentally sound products to niche markets that concern the conservation of environment on which indigenous people depend for their livelihoods. The promotion of income generation activities encourages community members to review and refine traditional methods of processing products and market them as ecologically sound products.

The rural infrastructure development will also continue under the additional financing. Rehabilitation of farm-to-market access (e.g. roads, footbridges, tramlines, footpaths) and irrigation and water facilities (e.g. communal irrigation, domestic water supply system) have localised negative impacts on the surrounding environment. Repair works undertaken on vehicle bridges and construction of retention walls to prevent slope failure of roads improve the control of water from leaking small-scale irrigation dams as well as channels and re-direct water-flow of surface-run-off of roads through preparing drainage systems.

## 2.2. Climate change and adaptation.

The Philippines ranked fifth with respect to the long-term Climate Risk Index for the period of 1994 to 2014, in the Global Climate Risk Index. Climate change and natural hazards will progressively impact sectors that are strategically important for the growth of the economy including agriculture, fisheries, and water resource management. Recognizing the vulnerability of the country to the impacts of climate change, the State prioritizes adaptation and adopts it as the anchor strategy<sup>6</sup>. Enhancement of climate and disaster-resilience of strategic sectors are key priority measures. The national priorities for adaptation to climate change in the agriculture sector include: changes to agricultural management practices; better water management; cropping pattern adjustment to take advantage of growing seasons in relation to rain patterns; advanced weather prediction information that is passed down to local farmers; improved access to agricultural data on diversified farming irrigation strategies; and improved post-harvest handling practices.

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<sup>6</sup> Intended Nationally Determined Contribution (2015).

Climate change is an issue in the CAR as outlined in section 1.4 above (also in PDR Section V D). The livelihood dependence on agriculture and natural resources by the local communities necessitate the building of resilience to climate change. However, the resilience building should take cognizance of the indigenous knowledge of the local communities and their capacity to manage climate risks that has been developed over time.

CHARMP2 already includes several measures that address some of the climate related risks faced in the CAR. However, additional measures based on the above outlined priorities can be incorporated. Already included measures such as soil erosion control, soil and water conservation, integrated pest management, forest fire prevention, forest conservation, watershed protection and sloping agricultural land technology contribute to building the resilience of communities to climate change.

### 3. Environmental and social category

The environmental and social category for the CHARMP2 is "A" as activities are implemented in an environmentally fragile area (prone to hazards and also reported levels of increasing deforestation) and involve indigenous communities. The additional financing extends to 18 more barangays in the six CAR provinces. The "A" categorization is maintained for the Additional Financing, which entails environmental and social risk assessments are undertaken and FPIC be obtained. An FPIC Implementation Plan has been prepared for the Additional Financing articulating the steps to be followed and the timeline. The environmental fragility was given particular consideration during the design of the project and Community Watershed Conservation, Forest Management & Agroforestry Component will specifically continue to addresses the challenges faced (PDR, Section III A.2).

### 4. Climate risk classification

The climate risk classification is high as the CAR is prone to climate related hazards, which based on projections are likely to increase. The CAR has already experienced extreme events that have negatively impacted the livelihoods of the communities. Consequently a climate vulnerability assessment is required to inform the design. Vulnerability assessments have been undertaken in several watersheds in Ifugao and Mountain Provinces in 2014. The assessments form important input to the formulation of watershed management and development plans.

### 5. Recommended features<sup>7</sup> of project design and implementation

#### 5.1. Mitigation measures.

The infrastructure development under the CHARMP2 complies with the environmental assessment standards of the Environmental Management Bureau (EMB) of DENR. The Project Support Office secures an Environmental Compliance Certificate (ECC) prior to commencement of the project activities. Construction and major earthworks are avoided during the rainy season and during detailed design stage, the potential for landslides and erosion are examined so that appropriate mitigation measures can be undertaken. The project works closely with community members in identifying potentially negative environmental impacts as well as designing of potential mitigation measures. A key consideration under the additional financing is whether Environmental and Social Management Plans are developed as part of the impact assessment and adhered to during the rural infrastructure development works.

The additional financing includes the development of an integrated watershed management plan, which shall apply indigenous knowledge to sustainable farming. The agro-forestry interventions will build on indigenous knowledge systems and sustainable environmental approaches. The approval and adoption of the plans will provide an entry point for policy level engagement and the mainstreaming of a landscape approach in development planning by the LGU. It will be beneficial to

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<sup>7</sup> Guidelines as to what constitutes ENRM Core Principles and Best-Practice Statement can be found in IFAD 'Environment and Natural Resource Management Policy' (2011)

document the processes followed and derive lessons for the mainstreaming agenda. This would also apply to the conflict resolution mechanisms that have been noted under CHARMP2.

The reforestation and agro-forestry activities for upland communities improve forest cover of the target area. Measures such as soil erosion mitigation and soil nutrient recovery, training farmers in organic agriculture, soil and water conservation, integrated pest management, forest fire prevention, forest conservation, watershed protection and sloping agricultural land technology are also beneficial to natural resources management. A key addition would be the monitoring of the benefits from the implementation of these measures and incorporating these in the generating evidence and knowledge capture for scaling-up. The agroforestry activities can in addition establish windbreaks in areas where these are required.

Community mobilization and participatory planning processes, which a core part of the approach that will be continued under the Additional financing, enhance community members' awareness of environmental issues and mitigation measures. The approach also facilitates awareness of the wealth of traditional knowledge that the indigenous peoples' communities have to sustain their environment and to adapt to climate change.

The community infrastructure such irrigation, warehouses and solar dryers provide a means of enhancing the adaptive capacity of the beneficiary communities. Under the additional financing, the siting, design specifications and construction materials should take into account climate risks to ensure the infrastructure is robust.

The vulnerability assessments undertaken in 2014 in various watersheds in the CAR focused on hazard identification and critical factor analyses with GIS. The analyses provide useful hazard maps in a more landscape approach that can be utilized by the project for more targeted interventions. The maps can be applied in identification of vulnerable agricultural areas in the barangays that will be targeted under the additional financing. The additional financing would beneficially include the use of GIS as a tool for the watershed management planning to cover the project intervention areas. Furthermore, a flood and drought monitoring system would also inform the appropriate response to hazard events in the project area. Indigenous resilient crop species can also be considered for the value chain development under Component 3.

Annual audits (at the project level) are also recommended to inform improvements to the overarching CHARMP2 Environmental and Social management system. The audit should address interalia effectiveness and compliance with ESMPs, FPIC, existing grievance mechanisms, institutional systems/processes etc.

## 5.2. Multi-benefit approaches.

The measures targeted at environmental management such as reforestation and agroforestry, soil and water conservation, forest fire prevention, forest conservation and watershed protection provide additional benefits for both climate change adaptation and reduction of the green-house gases through the avoided deforestation and also improving the carbon sink capacity of the forests. The CHARMP can be considered to already have a multi-benefit approach, which can be better captured for lessons to be learnt.

## 5.3. Incentives for good practices.

The rural infrastructure development results in improved access to lands, which in turn improves productivity and value attached to these areas by communities. Community and individual land ownership also provides incentives to improve land resources. The benefits from the infrastructure provide incentives for the maintenance of the infrastructure by communities, which can be supported with resources from LGUs when required (PDR Section II D).

Another incentive is the covenant approach that recognizes the role of indigenous communities as the protector and manager of watersheds in their ancestral domains and aims to bind partners and all

stakeholders into committing and fulfilling this commitment in the promotion of a harmonious working relationship. This represents a commitment by the community driven by indigenous systems and laws that have a deeper binding effect than a legal contract. The covenant binds the community to the task of taking care of their natural resources in perpetuity, including protection from forest fires. The covenant also formalizes the agreement with the LGUs as stakeholders in the program (PDR Appendix 4, Lessons learnt).

The benefits being reported from CHARMP interventions such as reduced forest fires and increased water availability for agriculture production and domestic use provide incentives for sustaining the practices being promoted by the project. These reported benefits, particularly if quantified can provide a basis for evidence based planning and strengthen the policy engagement as a result on the project. The mutual benefits are also an incentive for commitment from various parties (PDR Appendix 4, Lesson learnt).

#### 5.4. Participatory processes.

The project assists communities to develop PIPs including watershed management and rehabilitation of rural infrastructure development and small scale facilities necessary in developing agri-business through participatory community development processes. Through this process, a sense of ownership is created and understanding of impacts on environment deepened; this ultimately ensures sustainability of project activities. The participatory approach is also central to the Community Watershed and Forestry Management. The CHARMP has established indigenous forest management systems with a well-documented consultation process.

#### 6. Analysis of alternatives.

A potential alternative for the additional financing would be to consolidate the achievements from the ongoing CHAMRP2 rather than scale-out to more barangays. However the needs in the additional areas provide a justification for the approach (PDR Section I B). The lessons learnt have influenced the approaches to be taken in Components 2, 3 and 4 (PDR Section III A).

#### 7. Institutional analysis.

##### 7.1. Institutional framework.

DENR provides oversight in the environmental management as a member of the Regional Inter-agency Steering Committee (RISC) the highest policy making body of the Project that approves the AWPB; and the Project Management Group, the policy and implementation body at the provincial level. The ECC is also issued by the DENR following set procedures.

Philippines also has a governance framework for mitigating and adapting to the impacts of climate change. A Climate Change Commission is responsible for coordinating climate actions and policy through the Office of the President.

##### 7.2. Capacity building.

During the initial implementation phase, a workshop was organized on the Philippine Environmental Impact Statement (EIS) System for officers at the provincial and municipal levels responsible for preparing infrastructure development plans prior to preparing plans associated with agri-business and rural infrastructure development. This enables government staff involved in infrastructure development planning to be familiar with EIS system as well as mitigation measures.

At the community level the project engages the community in monitoring and also provides training in this regard. These activities will continue under the Additional financing to ensure the capacity of the community is sufficient.

### 7.3. Additional funding.

The Additional Financing for the CHARMP2 fills a financing gap as outlined in PDR Section I B. No additional funds are envisaged.

### 8. Monitoring and Evaluation.

Communities are involved in monitoring subprojects implemented in their areas through the Barangay Project Monitoring & Evaluation Teams (BPMETs). These teams are organized on a voluntary basis and help the Project and LGU monitoring bodies conduct their functions. These teams are provided appropriate trainings and some provisions such as flashlights, raincoats, boots, etc for their use in their monitoring work. A key element for strengthening further using the Additional financing is the collection of the evidence base of the benefits resulting from the project interventions such as stabilization of the slopes, reduction in erosion, improved water retention capacity among others.

### 9. Further information required to complete screening, if any

No further information is required.

### 10 Budgetary resources and schedule.

No resources are needed for further analyses.

### 11. Record of consultations with beneficiaries, civil society, general public etc.

Detailed consultation held with beneficiaries during the inception and formulation phases of the project showed that local communities are very much conscious of environmental issues. Community mobilization was undertaken from the start of project implementation in order to enhance their active participation. Target communities identify the project activities to be implemented in their selected locations through the PIPs and therefore, consultations with stakeholders including council of elders/leaders is built in the processes.

As with the ongoing program, compliance to FPIC requirements will cover validation for the new barangays, which will involve community consultations, specifically through interviews of elders/leaders and other community members conducted by the NCIP. In recognition of their mandates and roles, the NCIP will also be invited as facilitators during community assemblies for the orientation on the Additional Financing and preparation of the PIPs. While the additional financing will not cover sub-projects on Land Titling, the NCIP will still be part of the MMG and PMG for the new barangays.

### **Guiding Questions for Climate Risk Screening**

Question	Yes	No	Additional Explanation of 'Yes' response
Is the target group of the project dependent on climate-sensitive natural resources (such as drought-prone crops, rain-fed agricultural plots, migratory fishstocks)?	√		The target beneficiaries depend on rain-fed agriculture
Has the project area been subject to extreme weather events in the past, such as flooding, drought, tropical storms, or heat waves?	√		Floods, droughts and typhoons have been reported.
Could changes in temperature, rainfall, or extreme weather affect the project impact, sustainability or cost over its lifetime?	√		Changes in rainfall and extreme weather events will have adverse impacts
Will climate variability likely affect agricultural productivity within the project (crops/livestock/fisheries) or incidence of pests and diseases?	√		Both agricultural productivity and incidence of pests and diseases will be affected.

Would weather-related risks or climatic extremes adversely impact upon key stages of identified value chains in the project (from production to markets)?	√		Impacts at the production and on key infrastructure have already been reported.
Does the project have potential to integrate climate resilience measures without extensive additional costs (such as applying improved building codes; expanding capacity building programmes; or including climate risk issues in policy processes)	√		Building on the hazard mapping done, a flood and drought monitoring system could add value.
Would the project benefit from a more detailed climate risk and vulnerability analysis to identify the most vulnerable rural population, improve targeting and identify additional complementary investment actions to manage climate risks?	√		Vulnerability analyses of watersheds have been undertaken in 2014

## Appendix 4: Knowledge Management and lessons learned

**Lessons from Social mobilization and Participatory Investment Planning and Land Titling.** The general overarching lesson that affects quality of subproject implementation is the success of participatory approach through PPIPs, consultation meetings, piloting of BPMETs, etc. applied overtime to all project stages from monitoring, project implementation, and monitoring and evaluation which has reinforced empowerment among beneficiaries, partners and project implementers. Project beneficiaries and LGUs (including chief executives) consider the participatory investment planning approach a distinctive feature of CHARMP2 which should be replicated in all types of projects. The project's successful social mobilization and participatory investment planning approach which has been highly valued by target communities, requires further support from integrating and mainstreaming local development planning (LGUs and other DA, DENR projects). It is recommended that the preparation of Participatory Investment Plans can feed into future programming approaches throughout the Cordillera, and also generate lessons from the national government's Bottom-up Planning initiative. Other lessons from this component include (i) the direct hiring of the community mobilization officers and their provincial supervisors (versus contracting Non-Government Organizations) improves communication between the beneficiaries, the Project and the local government administrations, and has reduced transaction cost and increased efficiency of sub-project implementation.

**Lessons from Community conservation, Forest Management and Agroforestry.** The Project approach of forging multi-partite covenants or the 'covenant approach' for reforestation is a promising work in progress. POs are seen as a viable representation aligned with Indigenous people's tribal governance. There are signs of interest from regional government officials to know more about the processes involved. The covenant approach was an innovation from the comprehensive site development (CSD) contract in CHARM1. It was an initiative of CHARMP2 that recognizes the role of indigenous communities as the protector and manager of watersheds in their ancestral domains. It aims to bind partners and all stakeholders into committing and fulfilling this commitment in the promotion of a harmonious working relationship for the restoration of the communal watershed/ancestral lands within the barangay through the establishment of a number of hectares for reforestation. A covenant is some sort of an oath, a commitment by the community driven by indigenous systems and laws that have a deeper binding effect than a legal contract. The Project engages communities in the planting of trees and protection of the watershed. The covenant binds the community to the task of taking care of their natural resources in perpetuity, including protection from forest fires. The covenant also formalizes the agreement with the LGUs as stakeholders in the program.

Other lessons include (i) the promotion of sustainable agroforestry within existing farming systems that require mere enhancement of the tree component promotes additional livelihood and at the time contributing to environmental conservation; (ii) integrating Indigenous Knowledge Systems and Practices in project implementation can lead to a more community-friendly approach toward sustainable reforestation subprojects; (iii) the inventory of completed and on-going research on indigenous practices will support policy dialogue and an eventual need to pilot and/or scale up of best practices, and (iv) integration of the Reforestation and Agroforestry sustainability plans to the LGU sustainability plans particularly Local Governance Plan, just in the case of Abra, has contributed to the expansion and sustainability of projects through allocation of funds and provision of technical assistance as needed.

**Lessons from Agriculture, Agribusiness and Income Generating Activities.** The following are the lessons learned from Component 3:

***Simplicity of design.*** A project with wide geographic coverage working on a range of various livelihood subprojects should have a simple, readily understood and readily implementable design. After the original credit design of the Project which is a subsidiary loan agreement to a wholesale micro-finance institution for on-lending and to contract NGOs and public sector agencies to provide skills training, gets no demand from beneficiaries and was concluded by the credit study as an inappropriate approach, the credit design has to be revised to Livelihood Assistance fund (LAF)

design. The original credit design follows interest rates that are based on market rates and farmers do not have access on formal credit system, thus, it would be difficult for most project beneficiaries to access the fund. The LAF design was then conceptualized to fit into the needs of the target beneficiaries wherein the fund will be handled by the Community Financial Institutions (CFIs), an easy access for the beneficiaries and the fund is owned by the POs/LIGs. The approach is on-going success with 644 LIGs benefitted by the LAF program.

Aside from redesign of Credit to LAF, the Component structure was also redesigned. Initially, the component has 4 subcomponents: ((1) Promoting Agribusiness and Marketing; (2) Provision of Agricultural Support Services; (3) Micro-finance and Income Generating Activities; and (4) Small Rural Small Enterprise Development. At midterm, the subcomponents were reduced to three. These are: (1) Value Chain/Enterprise Analysis and Investment Planning VCAIP/EAIP; (2) Value chain/enterprise development (VCD/ED- with four categories of interventions: a) *Production/productivity enhancement*; b) *Value adding/Product differentiation and small rural enterprise development*; c) *market access/linkage development*; and d); *rural finance*; and (3) Monitoring and Evaluation. Despite the redesign, there were still confusion in implementation. This is because the presentation is like a shopping list of activities that the implementers should pick-up from. The design is like a jigsaw puzzle with pieces strewn all-over where one has to sift through, to find the right piece. This is challenging requiring a lot of creativity and common sense.

Hence, with such experience, the design in the up scaling proposal was simplified with a chronological arrangement of activities for ease in implementation (Refer to discussion on up scaling activities)

***Flexibility of implementation guidelines.*** With the wide range of activities that the component has to undertake, a lot of innovations have to be done, which necessitates flexibility of guidelines. With LAF for instance, being implemented with 644 LIGs across 170 barangays covering a range of income generating subprojects at various stages of maturity, a one-size-fits-all prescription would not apply. Hence, the LAF implementation guideline is updated regularly to allow for innovations and to capture unforeseen business opportunities

***Partnerships.*** Commitment is key to fruitful partnerships. Commitment is surfaced when the partnership has foreseen mutual benefits. The partnership with CIP-FoodSTART, an IFAD grant project focused on staff trainings, particularly: enterprise planning, Farmer Business School facilitation, preparation of business plans and outcome stories. These trainings are relevant to project staff and LGUs, hence are appreciated.

Also, partnerships with local institutions such as Community Financial Institutions (CFIs) in LAF implementation have somehow encouraged repayment by the LIGs.

***Focusing and channelling of interventions through groups and not to individuals.*** While group formation and working with groups is challenging at first, this approach proved effective with the LIGs owning and sustaining their livelihood subprojects.

The formation and engagement of the Livelihood Interest Groups (LIGs) as partner beneficiaries of the Project wherein component interventions such as trainings, start-up capital, equipment and marketing support were focused for specific LIG livelihood subprojects is showing indications of sustainability (LAF repayment, capital build-up, groups being formally registered with government registering bodies).

***Lessons from Rural Infrastructure Development.*** Among the lessons learned include (i) National Government: Local Government Unit cost sharing arrangements for financing rural infrastructure proposals post great delay in the implementation of infrastructure projects from 2011-2013 and must therefore be reconsidered for policy change to meet the LGU's capacity to provide counterparts for the infrastructure projects in future special projects since there is too limited revenues in poor communities which cannot meet cost-sharing requirements; (ii) conduct of pre-construction conference prior to the construction activities provides an avenue for all stakeholders especially community beneficiaries to level off their understanding and underscore issues (e.g. road right of way)

on the proposed project which facilitates better implementation of subprojects; (iii) conduct of turn-over projects after completion of subproject implementation as observed by the province of Benguet in all their RID subprojects is contributing to ensured operational maintenance and sustainability of completed subprojects by LGU and community beneficiaries, and (iv) involvement of BPMETs composed of community official and members in project monitoring of infrastructure is instrumental in the satisfactory completion of subprojects within their jurisdiction; (v) mode of implementation either by straight contract or by administration should be strictly complied especially on the contract duration for every sub-project; (vi) provisions of 5% equity contribution from direct beneficiaries of infrastructure sub-project particularly irrigation and domestic water systems be maintained and enforced to manifest that end-users contributed and involved themselves during the project implementation; (vii) involvement of beneficiaries in the implementation of infrastructure sub-projects especially for irrigation and domestic systems through “bayanihan” “binnadang” “ub-ubfo” reflects ownership of the sub-project. (viii) local and administrative clearances, resolutions and permits needed prior to the implementation of sub-projects must be secured to avoid delays in the implementation as well as processing of payments.

**Lessons from Project Management and Coordination.** (i) The IFAD Supervision mission in 2012 has recommended decentralization of project implementation arrangement to avoid the bottlenecks at the Project Support Office (PSO) and delays in project implementation. The PSO has to decentralize implementation of the components to the provincial level and to provide the technical oversight required rather than implementing the activities themselves. The remote project locations, long and difficult communications make centralized component implementation impractical. (ii) Process direct payments from the PSO to contractors under rural infrastructure development to avoid funds remaining idle at the LGUs; (iii) Direct procurement of planting materials from accredited suppliers instead of seedling propagation by farmers has ensured quality of planting materials and has reduced time requirement ensuring planting materials are ready in time for the planting season within the two year duration of the agroforestry project.

**Lessons from Extension Services.** Conduct of extension services in support to various subprojects like the Farmers Business School (FBS) for Project-assisted LIGs, Agroforestry Farmers Field School (Agro-FFS) for agroforestry subprojects and the School-on-air for livelihood groups and natural resource management course as advocacy is instrumental in complementing development initiatives in the Cordillera.

Rural development in Cordillera has been restrained with challenges brought by difficult landscape and accessibility to productive technology. In its effort to help overcome this geographical limitation and to complement its ground activities, the CHARM2 Project established a School-on-Air (SoA) in its covered provinces where functional radio stations are available for contract broadcast. The SoA program aims to reach out communities, mobilize project stakeholders to actively participate in the project and offer agricultural courses to complement the Agriculture and Agribusiness Development, and Income Generating Activities (AAIGA) component of the project. Moreover, the School-on-Air based from the SoA case study showed that even non-CHARMP2 covered areas is being benefitted from the programme and has even draw more demand from the public.

Resources are not maximized by most farmer beneficiaries as some idle lands are ignored which can actually be developed through agroforestry. The agroforestry project through Agro-FFS aims to equip farmers on agroforestry technology as a basic foundation in the conduct of agroforestry activities.

## **Appendix 5: Description of Project Components for Additional Financing**

### **5.1. Component 1. Social Mobilization & Participatory Investment Planning**

#### **INTRODUCTION**

The component on social mobilization and participatory investment planning provides the foundation for all the components. It ensures that all members of the community, including the poor and women, participate in planning, execution and monitoring. As such, peoples organizations, livelihood interest groups, irrigators associations, and BAWASAs will be organized as partners in implementing the various sub-project activities under the different operating components.

#### **SELECTION CRITERIA**

The proposed project will cover additional 18 new barangays in Project covered municipalities of the six provinces of the Region. An average of seven new peoples organizations and groups per barangay will be organized and strengthened as partners in Project implementation. Membership to these POs/groups will be determined during community assemblies from among the poorest families, and with particular consideration for interest groups such as women, elderly, youth and the landless. Beneficiaries will be chosen by the community members themselves, considering the criteria under each operational component. A Barangay Participatory Monitoring and Evaluation Team will also be formed in each of the new barangay. Its membership will be chosen from among volunteers during the first community assemblies.

Peoples organizations and livelihood interest groups currently implementing Project activities in nine old barangays in the provinces of Apayao, Ifugao and Kalinga, especially those evaluated to be in need of further capacitation, will also be assisted during the scaling phase. Also, the BPMETs in these barangays will be further supported.

#### **APPROACH**

The institutional framework for the additional financing will be similar with the current Project. This component represents the backbone of other Project components. It ensures that all members of the community, including the poor and women, participate in planning, execution and monitoring.

Community based organizations in the 18 new barangays will be identified and organized to work with the Project in implementing the different subprojects. They will include for every barangay one PO for the agroforestry, at least five LIGs for the LAF, one IA and BAWASA for the irrigation system or the domestic water system and one BPMET for the monitoring and evaluation. In addition, the LGUs will be supported to include in their formal structures the BPMETs especially in the nine old barangays supported under the original project (for consolidation); these will be assisted to undertake the monitoring and evaluation of subproject implementation.

Implementation of all activities will occur in close consultation with the concerned communities and other stakeholders. As an integral part of the participatory approach of the Project and in order to satisfy requirements of the NCIP, the FPIC of the target communities will be done prior to activities' commencement in the new barangays. Facilitation and preparation of the PPIPs will be done directly by Project staff.

Because IPs compose around 96% of the beneficiaries in the Project communities, IKSPs are the norm in allocating land use and access by which the Project abides. Strictly with regards to FCIP process, this is a requirement by the Indigenous Peoples Rights Act of 1997 and its revised guidelines further described under NCIP Administrative Order No. 3, series of 2012. The issuance of the required Certificate Precondition (CP) for the Additional Financing will follow the process done for the original 170 barangays of the CHARMP2, which involved validation of the sub-project activities identified in the PPIPs. The CP is the document issued by NCIP, which attests to grant FPIC agreement by the concerned indigenous cultural communities or indigenous peoples. All the CHARMP2 barangays issued and forwarded to NCIP a Resolution of Consent as a result of the validations, and these

became the basis for the CP issued to the CHARMP2. Validation was done as the sub-projects were identified by the communities themselves and included in their community plans. Importantly, the NCIP is a fundamental partner in the implementation of the Land Titling sub-component and a member of the Municipal Management Group and the Provincial Management Group, under CHARMP2. Implementation under the Additional Financing will continue nurturing this already successful partnership.

As with the on-going program, compliance to FPIC requirements will cover validation for the new barangays which will involve community consultations, specifically through interviews of elders/leaders and other community members conducted by the NCIP. In recognition of their mandates and roles, the NCIP will also be invited as facilitators during community assemblies for the orientation on the Additional Financing and preparation of the PPIPs. While the additional financing will not cover sub-projects on Land Titling, the NCIP will still be part of the MMG and PMG for the new barangays.

The PPIPs prepared in the 18 barangays will be adopted by the barangay and integrated in the Barangay Development Plan (BDP), which is the formally recognized plan of the barangay. Following normal local government process, the BDP goes up to the municipal level and is integrated in the municipal development plan, which in turn gets integrated into the provincial development plan.

As part of the vertical scale-up, mainstreaming of participatory approaches and the PPIPs in the current CHARMP2 areas will be assessed through meetings and consultations with key persons from the barangay, municipal and provincial local government units. Review of the implementation of activities identified in the PPIPs, especially the sustainability plans prepared by the barangays, will be included in the activity designs of related municipal or province-wide activities. From these evaluations, old barangays, particularly from the provinces of Apayao, Ifugao and Kalinga, will be identified for further continued and focused support under the Component.

## **DESCRIPTION OF ACTIVITIES**

The component shall aim to deliver three outputs: namely: (i) PPIPs established for 18 new barangays and updated for 9 existing barangays; (ii) mobilize/establish COs and Groups (REFO, Agro, LIGs, IAs, BWASA, BPMET) in 18 new barangays; (iii) Groups and LGU staff trained and coached on implementation and monitoring. Implementation of these activities will be undertaken in coordination with the other components, the PMEU, the Provincial Coordination Offices and the barangays development councils of each barangay.

The Implementation schedules of these activities and their sub-activities are detailed in the work plan. During the first quarter of the first year, the PPIPs of the nine old barangays will be reviewed and updated. Simultaneously, the facilitation and preparation of the PPIPs for the 18 new barangays will also be done. After preparation and validation, the PPIPs should be adopted through resolutions by the barangays and endorsed to the next LGU level for inclusion and mainstreaming. This step allows the PIP prepared by the communities to be used by other agencies.

To review the mainstreaming of PPIPs and the use participatory planning approach in the current barangays of the CHARMP2, meetings and consultations will be conducted with key persons from the barangay, municipal and provincial local government units. Reviews regarding the implementation of activities identified in the PPIPs, especially the sustainability plans prepared by the barangays, will also be included in the activity designs of municipal or province wide activities.

Reviews and updating of the PPIPs in the current Project areas reveal that there were sub-projects identified by the communities in the investment plans that were funded by other agencies. The pilot outcomes monitoring of the BPMET in Kapangan, Benguet also identified the utilization of the PPIP by other agencies as an outcome of this particular activity under Component 1.

Community based organizations in the 18 new barangays will be identified and organized to work with the Project in implementing the different subprojects. They will include for every barangay one PO for the agroforestry, at least five LIGs for the LAF, one IA and BAWASA for the irrigation system or the

domestic water system and one BPMET for the monitoring and evaluation. Organizational development and management trainings shall be implemented for them and for the existing peoples organizations in the nine old Project barangays in the provinces of Apayao, Kalinga and Ifugao for both years 1 and 2 of the project.

One of the best practices in the CHARM 2 Project is the facilitation of a regular get-together of members of peoples organizations working with the Project where they share experiences and ideas and assess their progress and come-up with plans on how to sustain their organizations and better the implementation of their sub-projects. One result of these forums is the provincial federation of peoples organizations in Abra and Benguet. Working on this accomplishment and on the same objectives, an annual forum of the peoples organizations and other groups under the expanded Project will be conducted in each province. At the end of the second year, most of these partner organizations are expected to be able to satisfactorily function on their own under the continued assistance of the relevant offices in the LGUs and the Project can effectively phase-out from the communities. Linkaging the peoples organizations, LIGs, IAs and BAWASAs with LGUs and other national agencies and networking with other organizations are part of the phase-out strategy.

The BPMETs in the 18 new barangay and in the nine old barangays will be capacitated towards the effective monitoring and evaluation not only of the implementation of the sub-projects but also in the management of the POs of their organizations towards the successful attainment of outcomes. The teams will also be provided with necessary tools to effectively and efficiently perform their functions. Annual provincial forums, ideally with the BPMETs of the original CHARM2 barangays, will also conduct for additional learning experience.

Capability building of Project staff and partner LGUs will be focused on gender mainstreaming, participatory approaches and documentation of best practices. As these skills are necessary in the implementation of the sub-projects, the trainings are scheduled during the second quarter of Year 1. The schedule for the second year will be more flexible.

The implementation of the component on social mobilization and participatory investment plan, as with the implementation of the whole Project, will be participatory and gender-mainstreamed. The conduct of all activities will be consulted with the concerned communities and other stakeholders. BPMETs formed will be endorsed for adoption and mainstreaming in the LGUs for their formal recognition.

To assist in the implementation of the above activities, community development facilitators will be retained for each new barangay. An additional facilitator will also be hired per province to assist the nine old barangays considered for scale-up. One senior community development officer (CDO), six community development officers and one administrative assistant based at the Project Support Office will also be hired.

## **5.2. Component 2. Community Watershed Conservation, Forest Management & Agroforestry**

### **INTRODUCTION**

The Community Watershed Conservation, Forest Management, and Agro-forestry (CWC/FMA) is one of the major components of the CHARM Project. It aims to promote the rehabilitation of watersheds in target areas to enhance conservation of watershed cradles of the Cordilleras and provide indigenous communities with opportunities to improve their socio-economic well-being. Furthermore, the CWC/FMA Component of the project shall support Local Government Unit (LGU)-based extension workers under its Promotion of Agro-forestry on Slope Areas (PASA) Sub-component to promote agro-forestry and encourage participants to establish agro-forestry plots either at communal watershed lands or individual lands through the season-long Agroforestry Farmer Field school (FFS) approach. The two year extension of the CHARM Projects under the new financing includes the implementation of Agroforestry component.

The watershed sustainability planning process included assisting communities in a communal tribal watershed covering areas in the Project municipalities of Tubo, Abra and Sagada and Besao in Mt. Province. The area is the source of water of a completed irrigation/domestic water supply subproject. In the course of implementing the subproject, there were conflicts on who owned the water source. The Project assisted in settling the conflict and convinced the concerned communities to consider the area as a common resource base. Initially, the works done included identifying the barangays within the watershed and forging an informal agreement among the communities and municipal local government units to come up with an integrated watershed management plan that ensures the area as a sustainable source of irrigation and domestic water. The succeeding planning activities were not conducted because of lack of funds under the on-going project.

### **SELECTION CRITERIA**

The agroforestry projects will be implemented in 18 barangays of the selected CHARMP2 municipalities in the 6 provinces in the Cordillera Administrative Region (CAR). The criteria in the selection of the project site of the agroforestry projects include the following:

- A new barangay within CHARMP2 covered municipalities with a potential for the implementation of the 3 components such as: rural infrastructure project, Livelihood Assistance fund and agroforestry establishment.
- Presence of idle lands of at least 15 hectares with potential for agroforestry establishment.
- For the Agroforestry project basic requirements:
  - i. Available land for the agroforestry establishment
  - ii. With MLGU trained AFFS facilitators
  - iii. Presence of organized PO's or PO's willing to be organized with at least 30 to 35 households
  - iv. A household willing to participate in the projects, who idle lands of at least 1,000 to 5,000 square meters soothed for agroforestry establishment and development.

### **APPROACH**

The approach in the implementation of this component under the new financing will follow the original implementation arrangement. However, there will be slight changes due to limited time allotted project implementation.

In the on-going agroforestry project, the AGFFS training activities were conducted for twenty two (22) sessions (5 months). The training activity development which aims to equip the farmer beneficiaries to be capable to establish, manage and sustain the agroforestry projects is conducted before the comprehensive site development is undertaken. Comprehensive site development refers to the actual field operations, which include seedling production, plantation establishment and care and maintenance of the trees planted in the field.

A slight modification in the implementation of the agroforestry projects under the new financing, the AFFS training activities will be simultaneously conducted with the comprehensive site development. For the first month (out of the 22 sessions), the activities to be done will focus on organizing the farmer beneficiaries. The PO's will likewise be required to secure necessary documents needed in the implementation of the projects, such as, bank account and formal registration of the PO's , either Securities and Exchange Commission (SEC), Department of Labor and Employment (DOLE) and Cooperative Development Authority (CDA).

The remaining AFFS sessions (18 sessions) will be focused on the hands-on demonstration on the comprehensive site development and sustainability planning. The addition of the sustainability planning session in AFFS training is an addition from the original conduct of the said training. Sustainability planning includes identification of activities to be undertaken by PO's in the established agroforestry plots after the phase out of the CHARMP2.

The AGFFS session will be handled by the MLGU Trained AFFS facilitator by the CHARMP2 project. While the Community Development Facilitator (CDF) and assisting Professionals (AP's) hired by the project will assist the MLGU Trained AFFS facilitator in the implement the agroforestry projects.

## **DESCRIPTION OF ACTIVITIES**

### **A. Planning workshop for the Agroforestry Implementers**

A planning workshop will be conducted in support of the implementation of the agroforestry components. The workshops aims to equip the staff (MLGU trained AGFFS facilitators, Community Development Facilitators, Assisting Professional) and other stakeholders involved in the implementation of the agroforestry projects. The output of the workshop are the revised AGFFS field guide, AFFS proposal and roles of staff (MLGU trained AFFS facilitators, Community Development Facilitators, Assisting Professional) and others stakeholders.

### **B. Season-long-Agroforestry Farmers School (AFFS) approach**

The AFFS for Vegetable-based Agro-forestry Production System (AGF-FFS) brings farmers together to carry out an intensive training on AGF methods and issues over the life cycle of agroforestry crops included agroforestry system established. The AFFS trains farmers to become Agroforestry experts in their own fields.

The principles that guide the AGF-FFS learning process are:

- The field is the primary learning resource. All learning activities take place in the agro-forestry field and are based on what is happening in the field.
- Experience forms the basis for learning. The activities that take place in the agro-forestry field and their farms form the basis for discussions and analyses by farmers who arrive at concepts which they test and improve through further field activities.
- Decision-making guides the learning process. Training focuses on the analysis of the agro-forestry ecosystem of the crop. The combination of analytical methods, ecological principles, and basic AGF methods helps farmers gain insights into the ecological interactions in the field and provide them with greater confidence in making crop management decisions.
- The training curriculum is based on local conditions of the AGF-FFS. The AGF-FFS curriculum and materials are based on their appropriateness, the local conditions, and the problems and needs of the farmers in the AGF-FFS.
- Training last the entire cropping season. Farmers acquire a firm understanding of the relevant AGF concepts for each growth stage of the agro-forestry crop as well as the factors that influence crop management decision-making at all stages of the plant's growth.

The FFS will follow the prescribe FFS schedule/Activity Guide. The FFS is scheduled to be conducted for twenty two weeks (22), weekly session at five (5) hours a week. The details of the topics to be discuss and hands-on activities during the AGFFs session listed in the AGFFS Field Guide.

### **C. Sustainability Planning Workshop.**

A planning workshop will be conducted for the farmer beneficiary just after the AGFFS graduation. The planning workshops aims to guide the farmers to developed a plan to sustain the established agroforestry plantation.

### **D. Integrated Watershed Management Plan**

In addition, follow up planning will be continued in one tribal communal watershed that cannot be completed under the on-going project. This will be in consultation with the LGUs and communities. The activities to be done will include data collection and watershed characterization and planning exercises with the full participation of stakeholders. This shall entail engaging the services of external experts through procurement of services to assist in developing the plan.

### 5.3. Component 3. Agriculture Agribusiness and Income Generating Activities

#### SELECTION CRITERIA

This component aims to assist productive poor households willing to undertake group livelihood activities. The group approach is necessary for addressing transport, communication and other market-related constraints in remote areas covered by CHARMP2.

To focus interventions, commodity prioritization will be undertaken in the new barangays during the participatory planning sessions to be coordinated under Component 1. Considering climate change resiliency and sustainability needs, preferences will be given to the following:

- a. With production expansion and food sufficiency potential - the commodities are existing with room for production growth (locally available raw materials and expansion areas);
- b. With low barrier for entry of the poor (low risk in terms of natural calamities, pests and diseases, price fluctuations, low capital requirement and available appropriate technology);
- c. With income and job generation potential- potential for work opportunities, increase food availability, increase household income and improve health and nutrition of the targeted sectors;
- d. Market potential -high value crops that generate high returns even at low volume;
- e. Socio-cultural acceptability and sustainability

With the limited time frame of two years, the Project will seek to partner with existing groups in the communities. In case there are no existing groups to be engaged as LIGs, the Community Mobilization officers tasked to organize LIGs shall organize LIG members according to their current engagement in the commodity chains (e.g. coffee producers as organized as coffee groups). LIG formation may be guided by the following criteria in selecting LIG members.

Basic requirement of LIG members:

- Must be residing in the same barangay
- Willing to engage in income generating activities or willing to expand their existing business operation
- Have existing livelihood activity that can be leveraged and expanded through incremental financing
- Agree to the rules and regulations of the group (*i.e.*, meetings, seminars and trainings, payment of fines, etc.)
- No other members of his/her family is receiving the same assistance from the program
- Character – credit worthy, capacity to pay, good reputation in the community

Likewise, in the identification of livelihood subprojects of the LIGs, the following criteria will be used:

- beneficiaries are willing to contribute in cash/kind, depending on the requirements of their income generating subprojects;
- not destructive to the environment and supports sustainable use of natural resources;
- lessens burden of women and assist in their empowerment;
- builds on traditional or already existing livelihood pattern(available raw materials, market, technology);
- Supports the involvement of the youth in farming economically feasible, socially acceptable, and replicable.

## **APPROACH**

For the 18 expansion barangays, the component will organize 5 LIGs for each barangay with a minimum of 15 members per LIG to reach 1,350 additional beneficiaries representing the same number of households.

The component shall continue commercialization of agriculture by assisting Livelihood Interest Groups (LIGs) pursue market-oriented livelihood subprojects. It shall adapt a holistic approach to assisting target households by supporting processing and value-adding group enterprises. Livelihood development plans shall serve as basis in determining and delivering AAIGA interventions. There is now a need to update the original enterprise development plans to reflect on-going experience. This will be followed by group formation and group strengthening activities in the newly added barangays. Monitoring will be done during field visits in tandem with field coaching activities. Monitoring workshops and best practice write shops shall also be conducted along with staff capability building activities. To capture experiences, a thematic study shall be conducted by year two.

Depending on the nature of the livelihood activities to be undertaken, Interventions such as production, skills trainings, learning visits/market assessment and packaging and product labels shall be integrated in the Farmer Business Schools. Start-up capital shall be provided through the Livelihood Assistance Fund (LAF).

The Livelihood assistance will be provided to new LIGs to be formed in the new barangays.

The Livelihood Assistance Fund (LAF) will still be channelled through community financial institutions (CFIs) selected and endorsed by the LGUs. The existing CFIs engaged by the project who are capable and willing to continue as CFIs for the up scaling may still be engaged. However, new CFIs may be tapped in case the initial CFIs do not have an active presence in the new barangays.

## **DESCRIPTION OF ACTIVITIES**

The component design will be simplified with the following subcomponents with interlinked activities in a chronological order, outlined as follows:

### **1. Commodity-driven planning**

- 1.1. Commodity prioritization with Component 1 during the PPIP preparation
- 1.2. Updating of 6 provincial Livelihood Development plans based on the priority commodities
- 1.3 AAIGA provincial committee meetings to be conducted quarterly per province to tackle implementation issues. The AAIGA provincial committee is a sub-committee of the Provincial Management Group. This committee is tasked to spearhead implementation of AAIGA activities in tandem with the Provincial Coordination Office. The AAIGA committee is responsible in the preparation/updating of the livelihood development plans, review of business plans of LIGs for LAF funding, assessment of LIGs prior to LAF transfer and LIG monitoring.

### **2. Livelihood Development**

- 2.1 LIG formation-this will be conducted in the new barangays in coordination with Component 1.
- 2.2 Farmer Business schools- One FBS will be conducted per barangay to be facilitated by the LGUs, project staff and farmer leaders using the FBS facilitator's manual earlier developed with CIP-FoodSTART.
- 2.3 Business Plan preparation and review- 90 Business plans will be prepared as basis for the LAF grant to the LIGs for their livelihood activities. The business shall be prepared by the first quarter of year 1 (2017).
- 2.4 Engagement of CFIs- CFIs will still be engaged as partners in LAF implementation. New CFIs may be engaged in case the original CFIs have limited access to the new barangays.

2.5 CFI forums will be conducted to level-off issues with CFIs and LIGs on LAF implementation, monitor LAF implementation and to foster experience sharing among CFIs and LIGs.

2.6 Provision of LAF- LAF implementation shall be guided by the LAF manual of operations.

2.7 Bookkeeping training and establishment/updating of LIG books of accounts. The LIGs shall be trained in recording their financial transactions for transparency and in using these records in making business decisions.

2.8 Entrepreneurship coaching for LIGs in old and new barangays. LIG monitoring visits shall include entrepreneurship coaching and shall be a continuous activity throughout the Project duration and shall be conducted for old and new LIGs.

2.9 Product development (packaging and labeling) -Product development by processing groups shall be supported through trainings, provision of product packages and labels.

2.10 Market Facilitation Workshops for new and old LIGs. This workshop includes buyers-sellers meetings wherein prospect buyers are invited to meet with the LIGs for possible marketing tie-ups. It also includes the preparation and updating of LIG profiles, product profiles and buyer profiles.

2.11 Business Launching - This will be done to promote LIG products and as a means of training the LIGs to interact with potential buyers and build customer relations, and get consumer feedback.

2.12 LIG Assessment (LAF transfer/reflow). This shall be conducted by the assessment team composed of a representative from the CFI, LGU and CHARMP 2. It shall be conducted when the LIGs have used their LAF for the IGSP in a one-year cycle.

2.13 Improved Business plan preparation/review and approval. Prior to transfer of LAF by the CFI to LIGs, improved business plans shall be prepared and reviewed indicating use of LAF by the beneficiary LIGs. As designed, after one year cycle of using the LAF, the LIGs shall payback the LAF to the CFIs and the CFIs shall transfer the LAF to the LIGs( being the owners of the fund) to pursue their livelihood subprojects. The LGUs will still continue to monitor and provide technical assistance to the LIGs to carry out activities in their improved business plan. The improved business plan is part of the sustainability documents to be turned-over by the Project to the LGUs.

2.14 LAF turn-over - This is the final stage of the LAF where the fund will be transferred by the CFIs to the LIGs for them to pursue their livelihood subprojects. It is the end of the formal relationship of the CFIs and LIGs. LAF turn-over also signals LGU interphase wherein, the LGUs shall now take over the monitoring and coaching of the LIGs for sustainability. LAF turn-over signals the weaning away of the LIGs from CHARMP 2.

### **3. Monitoring**

3.1. Monitoring workshops. Monitoring workshops shall be conducted to track implementation targets.

3.2. Staff trainings and learning visits. Staff trainings shall be conducted to level-up staff capabilities

3.3. Best Practices writeshops, thematic studies and publications. These will be done to capture experiences and lessons learned for sharing

### **5.4. Component 4. Rural Infrastructure Development**

#### **INTRODUCTION**

The component aims to improve rural infrastructure essential for the promotion of agricultural production and rural-based livelihood through mobilization of beneficiaries. The following are the subprojects implemented: (i) Farm to Market Access (Farm to Market Road, Footpath, Footbridge and Tramline) – to improve access to agricultural areas, markets and services; (ii) Communal Irrigation System – to reduce crop production losses and improve quality of crops/increase production in beneficiary areas; (iii) Domestic Water Supplies – to improve access to reliable and clean potable water; and (iv) Community Infrastructures (Warehouses, Solar Dryer and Greenhouse) – as complementary to the implemented Communal Irrigation System.

## **SELECTION CRITERIA**

### **A. FARM-TO-MARKET ROAD**

The specific criteria for the inclusion of a road section for financing under the program are:

1. The proposed farm-to-market road serves one or more target barangays of the program;
2. The beneficiaries were actively involved in preparing, and concurred with, the feasibility study;
3. The feasibility study has demonstrated that the economic internal rate of return should not be less than 15 percent;
4. Any negative environmental impacts can be mitigated;
5. Unit cost shall not exceed PHP2.75 Million per kilometer;
6. The feasibility level design for the road is based on the following technical criteria:
  - a) The road works are limited to rehabilitation of an existing road and do not include new road construction;
  - b) The road connects to a national road or an all-weather, maintained provincial road, and should not be more than 25 kilometers away from such roads;
  - c) Except for short sections that will be provided with concrete tire tracks, the road gradient does not exceed 12 percent; and provision of full width Portland Cement Concrete Pavement (PCCP) on road curves (blind/Sharp);
  - d) Provision of passing bay/shoulder for one-way road section;
  - e) The road works do not include major excavation in order to improve road width or gradient;
  - f) Possibility of constructing major structural bridge should be minimized thus emphasizing the utilization of low-cost, effective, appropriate structures such as spillways & low level causeway river crossings;
  - g) The feasibility level design, based on field investigation, identifies suitable foundation conditions for bridge and causeway construction;
  - h) The feasibility level design provides adequate provision for side drains, cross drainage and slope protection.

### **B. FOOTBRIDGE**

The defined criteria for the inclusion of a footbridge for financing under the program are:

1. The proposed footbridge serves one or more target barangays of the program;
2. The footbridge provides linkage between a program agricultural development area and an all-weather maintained road;
3. The beneficiaries were actively involved in preparing, and concurred/agree with, the feasibility studies and the location of the proposed bridge; and
4. The feasibility design investigation has identified suitable foundation conditions for the bridge towers and anchors at the selected location.

### **C. FOOTPATH**

The defined criteria for the inclusion of a footpath for financing under the program are:

1. The proposed footpath serves one or more target barangays of the program;
2. The footbridge provides linkage between a program agricultural development area and an all-weather maintained road;
3. Minimum area to be served by the proposed system is 8 hectares;
4. All land is presently cultivated on a permanent basis (there will be no new conversion of farm land in the Program area);
5. The beneficiaries were actively involved in preparing, and concurred/agree with, the feasibility studies and the location of the proposed footpath.

### **D. TRAMLINES**

The defined criteria for the inclusion of tramlines for financing under the program are:

1. The proposed tramlines serves one or more target barangays of the program;

2. The tramlines provides linkage between a program agricultural development area and an all-weather maintained road;
3. Minimum area to be served by the proposed system is 8 hectares;
4. All land is presently cultivated on a permanent basis (there will be no new conversion of farm land in the Program area);
5. The beneficiaries were actively involved in preparing, and concurred/agree with, the feasibility studies and the location of the proposed tramline;
6. The feasibility design investigation has identified suitable foundation conditions for the tramline towers and anchors at the selected location.

#### E. COMMUNAL IRRIGATION SYSTEM

During the feasibility study of each scheme, the following criteria will be applied for selection purposes:

1. The proposed scheme is situated within the target barangays of the program;
2. There is no quarrying within one kilometer upstream from the diversion site and the should be economically area is free from salinity and mine tailing problems;
3. The threshold for irrigation schemes will be at least 8 has or more with a minimum of 15 beneficiary households per scheme considering that majority of irrigation scheme in the Project area have less than 10 has with an average land holding size of less than 0.50 ha;
4. The expected cropping intensity should be at least 150 percent for rice and at least 180 percent for vegetables;
5. All land is presently cultivated on a permanent basis (there will be no new conversion of farm land in the Program area);
6. Proposed areas for vegetable production have adequate infrastructure outlets;
7. There is an 80 percent probability (derived from not less than three years dry season discharge measurements) that adequate water will be available for the planned command area;
8. Diversion of water to meet the needs of the scheme will not adversely affect the needs of the service areas systems situated downstream including the Upper Chico River Irrigation System(UCRIS) ;
9. The unit cost per hectare is PhP100,000.00 for CIS rehabilitation and PhP150,000.00 for CIP construction for both rice and vegetable areas;
10. The feasibility level design meets the geometric standards, technical specifications and standard canal cross-section and minor structure design details set by DA-CAR. (attached in the Annex 5);
11. Farmer-beneficiaries were actively involved in program preparation and have concurred with the feasibility study;
12. The feasibility study has demonstrated that: The economic internal rate of return is not less than 15 percent;
13. Any negative environmental impact can be mitigated.

#### F. DOMESTIC WATER SUPPLY

Water supply scheme which meet the following criteria may qualify for inclusion under the program:

1. The proposed scheme is situated within a target barangay of the program;
2. The scheme will serve a minimum of 15 households;
3. EIRR at least 15%- the higher the EIRR the higher the priority.
4. The feasibility study has demonstrated that the withdrawal of water will not adversely affect existing water users;
5. The beneficiaries were actively involved in preparing, and have concurred with the feasibility study;
6. The total length of distribution system does not exceed 10 kilometers;
7. The unit cost per household served will not exceed Ph P 20,000;
8. The scheme should be consistent with the provincial Water and Sanitation (WATSAN); and
9. The scheme should not be included in an existing government program, or included in an NGO assistance program.

## G. COMMUNITY INFRASTRUCTURES

The design of the community Infrastructures, shall if needed, incorporate facilities to enhance the marketability of the crops of the beneficiaries.

### 1. Solar Dryers

1. Solar dryers should be located away from shady trees;
2. The sub-project shall be located within the production area to be served, in a location most convenient to reach by all beneficiaries and where there will be the least number of trees to be cut;
3. Production area shall be at least 8 has a and above for crops but not more than 30% of the benefited area shall be owned by only one family;
4. The right of way (ROW) acquisition shall be the responsibility of the Local Government Units and no funds from CHARM2 shall be used for the acquisition.
5. The sub-project shall be located where there is an organized farmer's organization or prospective beneficiaries interested to formally organized.
6. It comprises an area of 420 square meters, 4" thick concrete pavement, class B mixture and with 10mm reinforcement bar space @ 0.60meter O.C. both ways.

### 2. Warehouses

1. The design of the warehouse shall if needed, incorporate facilities to enhance the marketability of the crops of the beneficiaries. The design shall also be made in such a way that the warehouse may at certain serve as a multi- purpose hall for the community meetings or social events;
2. The warehouse shall be provided with a separate office & comfort rooms for both males and females ;
3. The sub-project shall be located where there is an organized farmer's organization or prospective beneficiaries interested to be formally organized.

### 3. Green Houses

1. The proponent should be a group of farmers numbering not less than 10.
2. The sub-project shall be located within the covered Barangay near the production area to be served.

## APPROACH

The key activities under this component include a) rehabilitation/improvement of farm-to-market-access b) construction/rehabilitation of communal irrigation projects/systems c) rehabilitation/ construction of domestic water supply systems and construction of community infrastructure.

List of sub-projects will be submitted by the LGUs to PSO for evaluation and validation. Approval of these submitted sub-projects would be based on RID criteria set by the project. After which they will be providing administrative clearances/certificates and other technical document requirements. Each respective LGUs will prepare the Feasibility Study (FS) and Detailed Engineering Design of each sub-project for approval by the PSO. The respective LGUs (Provincial and Municipal) will be responsible on the sub-project's procurement process, and the implementation. Community-based laborers shall be given preference in the physical implementation as part of the manpower of the winning contractor.

IA's and BAWASA's should be activated/organized and registered as part of the requirement. The activation and organization of IA's and BAWASA's shall be handled by the SMPPI Component. Prior to project implementation, LGU's and other technical personnel should also undertake trainings and workshops to increase their technical knowledge on project implementation.

For any given project, monitoring and evaluation plan shall be undertaken by the direct implementers (LGU) thru PEO's and MEO's including the PSO. The range of activities include: a) Procurement activities, b) contract implementation and compliance of MOA, c) progress billing and release of payments, and d) acceptance of projects. The objective of sub-project monitoring at the PSO level is to ensure that implementation of activities are consistent with approved construction plans, technical standards, procurement rules and bid documents.

Community exchange visits will be organized for the duration of the project, to enable communities/LGU's to learn from experiences in other areas on development, operation and maintenance of community infrastructures.

## **DESCRIPTION OF ACTIVITIES**

**Project Identification.** Concerned LGUs of the 18 new barangays will submit the prioritized list of CHARMP2 eligible sub-project according to criteria for validation and evaluation. Local priority and social acceptability are also important criteria for financing. It is important at this stage, for the proponent to submit additional clearances including the required 10% equity.

**Feasibility Study Preparation.** From the submitted prioritized list, the concerned LGUs shall prepare a Feasibility Study included the detailed engineering design (DED) for evaluation by the PSO.

The CHARMP2 Project Support Office will give the proponents technical assistance and training activities (if necessary) to ensure that the proponents capability to prepare a feasibility study.

**Appraisal and Approval.** If the FS of the proposed sub-projects are favorably appraised, the PSO shall endorse the project to RCC for approval. Detailed engineering design, program of works and cost estimates shall be carried out only after feasibility study and other pre-engineering studies have been undertaken, or when the technical viability of the sub-project has already been established. This shall be done by the proponents themselves.

**Locational and Administrative Clearances.** After RCC approval, the proponents to secure the necessary clearances from the LGUs, DENR, NCIP, NWRB, etc. as maybe required by applicable loans and regulations. These are:

- Environmental Compliance Certificate (ECC) or Certificate of Non-Coverage (CNC) from DENR-EMB.
- Free and Prior Informed Consent (FPIC) from NCIP
- Deed of Donation for right-of-way for road sub-projects
- Sangunian Bayan Resolution endorsing the LGU sub-projects and authorizing the Local Chief Executive to enter into a Memorandum of Agreement with CHARMP2 Project to obtain financial and technical assistance for implementation of the sub-project.
- Board Resolution signifying commitment to provide local counterpart funding.

**MOA Signing and Opening of Trust Account.** Upon finalization and signing of Memorandum of Agreement, the proponent shall open two (2) trust accounts (TA) under the name of LGU dedicated specifically for the project.

**Procurement.** The approval of the detailed engineering design signals the procurement of qualified contractors who will undertake sub-project implementation. Procurement shall comply with the relevant provisions of R.A. 9184 on Government Procurement and IFAD procurement guidelines.

### **Project Implementation and Monitoring.**

- Construction Phase - While the CHARMP2 Scale-Up PSO is changed with oversight management functions, the project proponents shall implement the sub-projects and undertakes contract administration, progress monitoring and reporting.
- Construction Supervision - In the execution of the necessary civil works of the approved sub-projects, the LGU shall undertake the sub-project implementation. Day to day supervision of sub-projects undertaken by contract shall be the main responsibility of the respective LGUs. The LGUs thru the PEOs/MEOs shall see to it that construction works is in accordance with approved plans and specification, and adhere to acceptable engineering standards.
- Quality Control - The proponent shall be responsible for ensuring the quality of all construction activities. As such they shall undertake the quality control measures: (i) Testing of Materials Samples and (ii) Inspection Report.

### Completion, Turn-over and Acceptance

- Final Inspection and Turn-over - Once the sub-project has been certified as finally completed by the CHARMP2 Scale-Up PSO, the sub-project shall be turned-over to the LGU proponent for operation and maintenance.
- Operation and Maintenance Guidelines - Operation and maintenance (O&M) of the completed sub-project shall be the responsibility of the LGUs/proponent. It should commence upon the turn-over of the facility to the proponent. At the proposal stage, the CHARMP2 Scale-Up PSO should require a submission of a statement of commitment from the LGUs that it shall provide funds for operation and maintenance. In the case of LGUs, this shall be in the form of SP/SB Resolutions and must indicate the actual budget for the Operation and Maintenance of the sub-project. Moreover, all approved and completed sub-projects shall be required to submit a detailed Annual Operation and Maintenance Plan and Budget.

**Table 5.1. Sub-projects by year**

SUB-PROJECT	UNIT	2017		2018		TOTAL	
		QTY	AMOUNT	QTY	AMOUNT	QTY	AMOUNT
FMR	Km	62.99	124,925,000	23	53,500,000	85.99	178,425,000
FP	Lm	31,100	24,950,000	9,350	20,000,000	40,450	44,950,000
FB	Lm	463	14,960,000	162	3,300,000	625	18,260,000
TRAMLIN	Unit	2	4,000,000	4	8,000,000	6	12,000,000
DWS	Unit/hh	7/943	13,360,000	5/209	5,170,000	12/1177	18,530,000
CIS	Ha	271	29,500,000	211	28,705,560	500	58,205,560
Community Infra (e.g warehouse, solar dryer, and greenhouse)	Unit	19	23,500,000	12	9,000,000	31	32,500,000
TOTAL PROJECT COST			235,195,000.00		127,675,560.00		<b>362,870,560</b>
CHARMP2			211,675,500.00		114,908,000.00		<b>326,583,500</b>

**Table 5.2. Beneficiaries of infrastructure projects**

Province	Municipality	Target Household Beneficiaries
Abra	Luba	118
	Malibcong	36
	Licuan-Baay	113
Apayao	Calanasan	90
	Conner	187
	Kabugao	65
Benguet	Kapangan	191
	Sablan	300
	Bakun	165
Ifugao	Hingyon	99
	Hungduan	155
	Tinoc	205
Kalinga	Pasil	88
	Tanudan	95

	Tinglayan	156
Mountain Province	Tadian	727
	Bauko	652
	Sagada	400
TOTAL		Approximately 3,842 HH

**Table 5.3. General Description of the RID Sub-Projects by number, size, and beneficiary population and households.**

Sub-Project Type	Unit	No. of Sub-projects	Qty	Households	Population
Road Rehabilitation	Km.	32	85.99	5,000	25,000
Foot Path	Lm..	19	40,450	1,832	9,160
Foot Bridge	Lm..	12	625	1,727	8,635
Tramline	Unit	6	6	341	1,705
CIS Rehabilitation/Construction	Hectare	27	482	1,216	6,080
Domestic Water Supply	Unit/HH	12	12/1177	1,177	5,885
Community Infrastructure	Unit				
Warehouse*	Unit	13	13	1,827	9,135
Solar Dryer	Unit	12	12	1,476	7,380
Greenhouse	Unit	6	6	460	2,300
<b>TOTAL</b>		<b>139</b>		<b>15,056</b>	<b>75,280</b>

## 5.5. Component 5. Project Management Coordination

### APPROACH

The existing Project Support Office shall continue to manage and coordinate all Project activities from the Regional office to the PCOs. The core staff assigned by DA shall remain as senior staff and unit heads of the various units and offices of the Project. The specific assignments/designations of these staff shall remain the same to ensure continuity and seamless transition from the on-going to the new programme. Additional required Project staff shall be retained from the on-going programme. The offices, facilities and vehicles at the Regional and PCOs shall remain to be used for the new programme.

#### A.5.1. Provincial Coordination Office

Coordination at the Provincial level shall be maintained through the PCOs with the same office buildings and facilities. Similarly, required staff shall be retained from the on-going programme. The PCOs shall continue to oversee Project implementation at the field level in each of the six provinces in coordination with the project partners, the LGUs, POs and communities.

#### A.5.2. Planning, Monitoring and Evaluation

As in CHARM2, the project will support community members in participatory monitoring and evaluation of the implementation of their subprojects as indicated in their own PIPs. Project support includes capacity building in the 18 new barangays and nine carry over barangays. This will be through trainings and the actual carrying out of monitoring, evaluations and plan adjustments in relation to the implementation of the activities and subprojects under components 2, 3 and 4. Planning

exercises will be facilitated through Component 1 involving the community at large and their respective Barangay Development Councils. Participatory evaluation workshops in the community, with the BPMETs as main participants, will be guided to further build capacities in the community for them to assess by themselves the results emanating from such subprojects and other similar interventions. It is envisaged that building capacities of the target communities will influence the social and economic environment and changes in the community's priority-setting.

To enhance its monitoring and evaluation of subprojects and activities, the Project will adopt available geo-tagging and mapping technology in tracking project implementation in the field. BPMETs as well as other Project implementers will be trained in this respect. However, it will be the BPMETs in the 18 new barangays and nine carry over barangays which will be trained and provided with the capacity to gather field data digitally and send the same electronically to the PSO, particularly to the PMEU, which will in turn encode and consolidate these data into a free spatial processing software such as Google Earth for consumption of project implementers and oversights.

#### A.5.3. Information and Knowledge Management

The IKM Unit will be responsible for Knowledge Management activities of the Project which will be composed of three (3) IKM Officers to be headed by an IKM coordinator. These broadly include conducting press conferences/media encounters and knowledge learning market in the regional level, publication of news bulletin, brochures, books, and documentaries among others by engaging the services of professionals in the field, and documenting successful modles/practices/stories and uploading them on web. Documentations will be packaged as press releases and/or project documentaries.

*School-on-Air/Video Learning School.* The IKM Unit will head the implementation of the SoA and video learning school on natural resource management in partnership with the CWCFMA component. Previously developed module will be developed especially on the expansion of agroforestry and climate change topics and will serve as the module material for the program. A special audio-visual learning material for natural resource management will be developed by engaging professional in the field. The SoA program will be offered in the three (3) provinces (Abra, Benguet, Kalinga) where initial successes on recently conducted SoA survey study was noted while the three (3) other provinces (Apayao, Ifugao and Mountain Province) will be offered with video learning school where there are no appropriate radio stations to be tapped. Target beneficiaries will be members of the agroforestry peoples' organizations with priority to the 18 new barangays. Implementation of the program will require active participation and involvement of the LGUs in the barangay, municipal and provincial levels.

## **Appendix 6: Financial Management and Disbursement Arrangements and Procurement**

### **A. Financial Management and Disbursement Arrangements**

#### **Assessment of existing Programme Implementation Agency**

A risk assessment was conducted in line with IFAD's guidelines<sup>8</sup> to ensure that: (i) adequate financial management (FM) arrangements are in place to ensure programme funds will be used for purposes intended with due consideration to efficiency and economy; (ii) the programme's financial reports will be prepared in an accurate, reliable and timely manner; and (iii) the programme's assets will be safeguarded.

The Second Cordillera Highland Agricultural Resource Management Project is being implemented by the Department of Agriculture- Regional Field Office- Cordillera Administrative Region (DA- RFO- CAR) through a Project Support Office (PSO) in Baguio City with a Provincial Coordinating Office (PCO) in each of the six (6) provinces covered. The financial management risk of the additional financing, analysed during supervision in line with IFAD's guidelines, was deemed to be medium. The risk will be mitigated by (i) increasing finance staff capacity at field level; (ii) strengthened measures for monitoring advances to implementing entities; and (iii) optimised use of electronic systems (e-NGAS, currently under pilot testing and soon to be rolled out, and e-Budget) to improve financial reporting and monitoring.

3. The project was rated satisfactory for financial management by the 2015 supervision mission. Key internal controls are in place, with appropriate segregation of duties, expenditure authorization processes and bank reconciliation procedures. Finance staff capacity is adequate. Financial management functions are handled by the PSO Accounting and Budget Unit. The Accounting Unit is composed of the Project Accountant (part-time), an Assistant Project Accountant (part-time), two Project Bookkeepers (part-time), four full time Finance Analysts and one full time Finance Assistant. The Budget Unit is composed of the Project Budget Officer (part-time), Assistant Project Budget Officer (part-time) and two full-time Finance Analysts. Also in support of the project's financial management are seven full-time Roving Bookkeepers based in the five Cordillera provinces. The Project has been maintaining an accounts system based on excel spreadsheet, ledgers and books of accounts in line with the New Government Account System manual version. However the rollout of the e-NEW Government Accounting System is ongoing and expected to be fully implemented in 2016.

In PSO, the six part-time personnel who currently occupy core positions in the Accounting and Budget Units are regular government employees from the DA- RFO- CAR. The remaining seven finance staffs are employed on a contract basis renewed every six months. Employee turn-over is low with only one finance staff resigning during the year 2015. PSO employs qualified finance staff and continues their capacity development through various trainings.

The last supervision mission in March 2015 rated the disbursement performance of Loan 749-PH as moderately unsatisfactory (3) due to a disbursement performance of 55%. However, as of March 2016, disbursement stands at 83% and the project looks set to utilize the full loan allocation by closure date, currently foreseen for 31 December 2016. The project has fully disbursed \$10 million (100%) of the OFID Loan 1224P-PH as of June 30, 2015.

The Government of the Philippines is providing resources to implement the programme activities, including its counterpart funding. The total GoP contribution is equivalent to approximately \$14 million, a little over the amount originally envisaged. This amount includes the LGU contribution of \$6 million. The provision of counterpart Government funds was rated as highly satisfactory (6) given by the 2015 SIS Mission.

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<sup>8</sup> Guidance note on undertaking financial management assessment at design, November 2012

Procurement is undertaken in accordance with the provisions of Republic Act (RA) 9184 and its rules and regulations, consistent with IFAD's Procurement Guidelines. The PSO undertakes a compliance assessment of all rural infrastructure works undertaken by the LGU, maintaining detailed files on all rural infrastructure works.

The Project submitted the 2014 Audit Report on time, with required opinions on the financial statements, special account, SOEs, along with the management letter. The Commission on Audit (COA) audit report for FY 2014 was given an "unqualified" opinion. The assessment of the overall financial reporting is Satisfactory (5) by the 2015 SIS Mission as the set of financial reporting is complete and sufficiently discloses the financial position of the entity. CHARMP2 has complied with most of the FY 2013 and 2014 auditor's recommendations.

### Implementation Arrangements

**Additional financing.** The additional financing to the programme will be USD 10,333 million. In addition, total counterpart funds amount to USD 2,708 million. The programme will mobilise additional resources from the national government through the Department of Agriculture, local government units, and beneficiary contributions. The national government of the Philippines through the Department of Agriculture will be contributing a counterpart funding of USD 1,972 million from its own resources with the Local Government Units (LGU) and beneficiaries contributing an additional USD 0.736 million and USD 0.087 million respectively.

The DA will include National Government counterpart contributions and loan proceeds in its annual budget proposal to ensure their inclusion in the General Appropriations Act of corresponding years. The LGU contributions will be financed from their Internal Revenue Allotment (IRA) or other sources except those provided in-kind. Beneficiaries' contributions consist largely of labour and local materials for infrastructure construction, in particular for communal irrigation system and domestic water supply sub-projects.

The project will submit separate withdrawal applications for the additional financing. Allocations of resources by expenditure category for the additional financing are shown below:

**Table 6.2. Proposed Loan Categories for Additional Financing**

Philippines

USD ('000)

CHARMP2-Additional Financing Disbursement Accounts by Financiers	GOP-DA		LGU		IFAD Loan		Beneficiaries		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Civil Works	1,502	18.3	736	8.9	5,903	71.7	87	1.1	8,228	62.7
2. Equipment & Materials	38	10.0	-	-	344	90.0	-	-	383	2.9
3. Training & Studies	196	10.0	-	-	1,766	90.0	-	-	1,962	14.9
4. Advisory Services	148	10.0	-	-	1,331	90.0	-	-	1,479	11.3
5. Livelihood Assistance Fund	-	-	-	-	204	100.0	-	-	204	1.6
6. Allowances	23	10.0	-	-	206	90.0	-	-	229	1.7
7. Operation & Maintenance	64	10.0	-	-	578	90.0	-	-	643	4.9
<b>Total PROJECT COSTS</b>	<b>1,972</b>	<b>15.0</b>	<b>736</b>	<b>5.6</b>	<b>10,333</b>	<b>78.7</b>	<b>87</b>	<b>0.7</b>	<b>13,127</b>	<b>100.0</b>

The Annual Work Plan and Budget and the Procurement Plan will follow the standard templates. This will include the consolidated AWPB and the Procurement Plan.

**Designated Account** IFAD additional financing to the Programme will be routed

through the existing Designated Account denominated in United States Dollars maintained at the Land Bank of the Philippines. The existing initial deposit will be recovered as per the policy indicated in the Loan Disbursement Handbook. The methods of disbursement and the formats for submission of the withdrawal applications will be similar to the existing loan. The Project's LTB will be revised to integrate the additional financing.

**Auditing arrangements** The Commission on Audit (COA), as supreme audit institution, is responsible for carrying out the annual audits of CHARMP2 accounts. The FY 2014 audit was received timely and was unqualified. Management Letter observations are monitored and have been, or are in the process of being, resolved. The project's unaudited Financial Statements for 2015 will be submitted for audit at the end of March and the audit mission is expected to take place in April 2016, to ensure submission to IFAD by 30 June 2016 in accordance with covenants. CHARMP2 is also subject to internal audit by the COA resident auditor in the Department of Agriculture Regional Field Office for the Cordillera Autonomous Region.

Status of risks envisaged and the proposed mitigation measures by the 2015 SIS Mission are provided below:

**Table 6.3. FM risk and Proposed Mitigation Measures**

**Summary of FM risks and mitigating actions.**

	<b>Initial Assessment</b>	<b>Proposed Mitigation</b>	<b>Final Risk Assessment</b>
<b>Inherent Risk</b>			
1. TI Index	<b>38</b>	-	<b>M</b>
2. RSP Score	<b>4</b>	-	<b>M</b>
<b>Control Risks</b>			
1. Organization and Staffing	<b>M</b>	<ul style="list-style-type: none"> <li>Increased finance staff capacity at field level</li> </ul>	<b>L</b>
2. Budgeting	<b>M</b>	<ul style="list-style-type: none"> <li>Timely preparation and submission of AWPB and Procurement Plans to IFAD</li> <li>Implementation of e-Budget</li> </ul>	<b>M</b>
3. Funds flow and Disbursement	<b>M</b>	<ul style="list-style-type: none"> <li>Close monitoring of advances to IEs</li> <li>Improved financial reporting (e-NGAS)</li> </ul>	<b>M</b>
4. Internal Controls	<b>M</b>	<ul style="list-style-type: none"> <li>Adherence to current internal control framework</li> <li>Strengthened monitoring of IEs</li> </ul>	<b>M</b>
5. Accounting Systems, Policies & Procedures	<b>H</b>	<ul style="list-style-type: none"> <li>Manual processes to be replaced by automated accounting</li> </ul>	<b>M</b>
6. Reporting and Monitoring	<b>M</b>	<ul style="list-style-type: none"> <li>Enhanced reporting capacity (e-NGAS/ e-Budget)</li> </ul>	<b>M</b>
7. Internal Audit	<b>M</b>	<ul style="list-style-type: none"> <li>Internal audit function will continue to be provided by COA resident auditor within IA</li> </ul>	<b>M</b>
8. External Audit	<b>M</b>	<ul style="list-style-type: none"> <li>Monitoring of audit recommendations by supervisions, IA, EA</li> </ul>	<b>M</b>
<b>Programme Fiduciary Risk at Design</b>	<b>M</b>		<b>M</b>

## **B. Procurement**

### **Procurement Assessment of Programme Unit**

As per 2015 SIS Mission dated February 26-March 16, 2015, procurement rating is maintained as *satisfactory (5)*. Procurement is undertaken in accordance with the provisions of Republic Act (RA) 9184, its implementing rules and regulations consistent with IFAD's Procurement Guidelines. The PSO undertakes a compliance assessment of all rural infrastructure works undertaken by the LGU, maintaining detailed files on all rural infrastructure works.

A review of the rural infrastructure contracts reflect frequent cases of time extensions and suspensions due to weather conditions resulting in delays in implementation of infrastructure contracts. The PSO has reviewed all on going contracts and prepared a list of performance bonds to identify their expiry dates based on the existing or revised contract expiry dates and insured the issuance of revised performance bonds where needed to align the validity periods with any contract revisions.

### **Procurement Arrangements under Additional Financing**

Procurement of goods, works and services financed by IFAD will continue to be undertaken in accordance with IFAD Procurement Guidelines and Philippine Government Procurement Reform Act. Bidding procedures to be adopted by all sub-project implementing agencies and units in carrying out procurement under the Project are in accordance with the Philippine Bidding Documents compatible with the IFAD Guidelines.

### **Procurement Methods and Thresholds**

All procurement using proceeds of the IFAD loan will respect IFAD Guidelines and adhere to IFAD's letter to the borrower. Contracts will be bulked as much as feasible and existing thresholds will continue to be applied in determining procurement methods as well as IFAD prior review. Applicable methods include:

- (a) ICB
- (b) NCB
- (c) Direct contracting
- (d) Local shopping
- (e) Direct purchase

The Project Manager will have the authority to approve contracts up to a value of PHP 5 million or USD 100 000. Contracts exceeding this amount will be approved by the Regional Director of DA.

### **Procurement Planning**

The PSO shall continue to prepare a draft annual work plan and budget (AWPB) for the loan and the grant for each project year. The draft AWPB together with the procurement plan will be submitted to the Regional Inter-Agency Steering Committee for approval. When approved, the PSO shall submit each proposed AWPB and Procurement Plan to the Fund for comments, no later than 60 days before the beginning of the relevant project year. If the Fund does not comment on the proposed AWPB within 30 days of receipt thereof, the AWPB shall be deemed accepted by the Fund.

If needed, the PSO may propose adjustments in the AWPB during the relevant Project year, which shall become effective following the same procedures described in the preceding paragraphs.

### **Condition for Procurement**

Bidding is conducted through open competitive bidding procedures as specified in the Implementing Rules and Regulations (IRR) of the Republic Act 9184 or otherwise known as "An act providing for the modernization, standardization and regulation of the procurement activities of the government and for other purposes". Similarly, the Act is consistent with the provisions of the IFAD Procurement Guideline which is also used as a basis for the procurement of goods and services under CHARMP2.

Under this condition, IFAD has provided classification of subprojects in terms of volume and amount. Big subprojects like farm to market roads, communal irrigation systems and domestic water supply

projects are encouraged to bid under a single contract category. On the other hand, small subprojects like foot paths and footbridges can be bundled into a single bid package with just one single ABC to practically encourage prospective bidders to participate.

With this classification, eligibility criteria for prospective bidders are presented as follows:

For a subproject requiring a single contract, a prospective contractor must have completed within the last ten (10) years from the submission of bid a single contract that is similar to the CHARMP2 subproject to be bid an amount equivalent to at least seventy-five percent (75%) of the ABC.

For small subprojects requiring a bundled contract, a prospective contractor must have completed within the last ten (10) years from the submission of bid similar projects with the CHARMP2 subproject to be bid. The amount of which must be at least seventy-five percent (75%) of the subproject with the biggest amount in the bundle.

Small A and Small B contractors without similar experience of the contract to be bid even if the cost of such contract is not more than fifty (50%) percent of the Allowable Range of Contract Cost of his registration will not be allowed under CHARMP2. This is to ensure that contractors engaged by the Project are knowledgeable of the type of subprojects to be constructed or rehabilitated especially since the project areas have difficult terrain and a fragile environment, highly sensitive to soil disturbance and erosion.

#### **Procurement for LGU Sub-projects**

Procurement and bidding procedures for the LGUs are the responsibility of the Provincial/Municipal Bids and Awards Committee (PBAC, MBAC).

Generally the following procurement processes are as follows:

(a). LGU BAC prepares the bid documents (i.e. D.E. plans and P.O.W. cost estimates, specifications and duly accomplished bidding document forms) and submits to PSOCHARM2 /DA-RFU for concurrence. (b). PSO-CHARM2/DA-RFU review documents carefully to resolve observed discrepancies with the LGU-BAC and ensure completeness of pre and post-procurement documents prior to their submission to IFAD; (c). PSO-CHARM2/DA-RFU forwards letter to LGU with the advice to proceed with the conduct of bidding upon approval of first "No Objection Letter"(NOL) ; (d). Send letter of invitation to at least three (3) contractors for simplified procurement procedures and issues bid documents; (e). LGU BAC conducts pre-bid conference prior to the scheduled bid opening; (f). Prospective bidders conduct site visits, prepare, accomplish and submit bid documents to LGU BAC; (g). LGU BAC conducts opening of bids in public at the designated place and time as contained in the advertisement; (h). LGU BAC prepares evaluation of Bids, conducts post qualification, makes resolution to award and submits bid evaluation reports to PSO-CHARM2/DA-RFU ; (i). IFAD reviews documents and concurs as appropriate to PSO-CHARM2/DA-RFU for the release of second "No Objection Letter"(NOL) . LGU BAC sends letter of award to winning bidder as well as informs losing bidders and prepares contract documents; (j). LGU approves and signs contract with the winning bidder and issues notice to commence work; and requests contractor to submit performance bank guarantee; (k). The LGU shall furnish PSO-CHARM2 with all approved procurement and bidding documents for records and monitoring purposes.

#### **Procurement with Community Participation**

The IFAD Procurement Guidelines made provision for procurement involving community participation and provided some general guidance on various approaches which can be adopted. In projects with community participation, the project management or other project parties will continue to review, supervise and guide the procurement, disbursement and physical implementation of the relevant activities carried out by the community, thereby ensuring that principles and standards as stated in the IFAD Procurement Guidelines are maintained.

### **Procedures and Documentation**

The PSO ensured that simple yet reliable arrangements are placed within the Project to follow the various stages of the procurement procedures, such as transparent bid advertising, open competition (even within the community), public bid opening, award of contract to the lowest bidder, etc., so as to preserve the integrity of the process to the extent possible. Bidding documents, contracts, etc. are being simplified and/or standardized to enable easy understanding and use by community participants.

### **Review of Procurement Decisions by IFAD**

The award of any contract for goods and works above estimated to cost US\$100,000 equivalent or more shall be subject to prior review by the Fund. The aforementioned threshold may be modified from time to time as notified by the Fund to the Borrower.

All bidding documents and contracts for the procurement of goods, works and services financed by the Loan and Grant shall include a provision requiring bidders, suppliers, contractors, sub-contractors and consultants to permit the Fund to inspect their accounts, records and other documents relating to the bid commission and contract performance and to have them audited by Fund-appointed auditors and investigators. This provision will require bidders, suppliers, contractors, sub-contractors and consultants to: (i) maintain all documents and records related to the Fund-financed Project for three years after completion of the work contemplated in the relevant contract, and (ii) require the delivery of any document necessary for the investigation of allegations of fraud or corruption and the availability of employees or agents of the bidders, suppliers, contractors, sub-contractors or consultants with knowledge of the Fund-financed Project to respond to questions from Fund personnel or any properly designated auditor, investigator, agent or consultant relating to review or audit of the document. If the bidder, supplier, contractor, sub-contractor or consultant fails to comply with Fund's request, or otherwise obstructs Fund's review of the matter, the Fund, in its sole discretion, may take appropriate action against the bidder, supplier, sub-contractor or consultant, including the imposition of sanctions in accordance with the administrative procedures of the Fund.

## Appendix 7: Compliance with Financing Agreement: Status of implementation

Section	Covenant	Target Action Due Date	Compliance Status Date	Remarks
<b>Article II</b>				
Sections 2.01-2.05	<i>Project Financing, Opening and Operation of the Loan and Grant Special Accounts</i>		Complied	
Sections 2.06-2.07	<i>Service Charge and Repayments of Principal</i>		Not yet applicable	
<b>Article III</b>				
Section 3.02 (a)	The Borrower, through the Lead Project Agency, shall ensure that the PSO prepare a draft annual work plan and budget (AWPB) for the Loan and the Grant for each Project Year. Each draft AWPB shall include, among other things, a detailed description of planned Project activities during the coming Project Year, a procurement plan for at least eighteen (18) months and updated annually thereafter, to cover every eighteen month period of Project implementation, and the sources and uses of funds therefore, based on the respective work plans and budgets prepared by each of the Project Parties.		In compliance	The revised 2015 AWPB (to include 2016 time extension) was submitted including the procurement plan on 22 July 2015 and approved by IFAD on 06 October 2015.
Section 3.02 (b)	The Borrower, through the Lead Project Agency, shall ensure that the PSO submit the draft consolidated AWPB and Procurement Plan to the RISC for its approval. When so approved, the PSO shall submit each draft AWPB and Procurement Plan to the Fund for its comments, no later than 60 days before the beginning of the relevant Project Year. If the Fund does not comment on the draft AWPB within 30 days of receipt thereof, the AWPB shall be deemed non-objected to by the Fund.		In compliance	The revised 2015 AWPB (to include 2016 time extension) was approved and endorsed by the RISC on 17 December 2015.
Section 3.02 (c)	The Borrower, through the Lead Project Agency, shall ensure that the PSO adopt the AWPB and Procurement Plan substantially in the form non-objected to by the Fund, and the PSO shall provide copies thereof to the Fund prior to the commencement of the relevant Project Year.		In compliance	
Section 3.02 (d)	If required, the Borrower, through the Lead Project Agency, shall ensure that the PSO may propose adjustments in the AWPB during the relevant Project Year, which shall become		Complied	The 2015 AWPB was adjusted to include the 2016 time extension.

Section	Covenant	Target Action Due Date	Compliance Status Date	Remarks
	effective following the procedures described in paragraphs (b) and (c) above.			
Section 3.03	The Lead Project Agency shall open and thereafter maintain in a Government bank and/or other bank authorised to accept Government deposits, proposed by the Borrower and accepted by the Fund, a current account denominated in PHP to receive Loan and Grant funding for activities supported by the Project, with the exception of those relating to the Credit Facility of the Agriculture and Agribusiness Development and Income Generating Activities Component referred to in paragraph 5, letter C of Schedule 1, (the "PSO Project Account"). The Project Manager and the Financial Management Officer of the PSO shall be required joint signatories on all transactions relating to the PSO Project Account.	During Project Implementation	Complied	
Section 3.04	<i>Availability of Loan and Grant Proceeds.</i> The Borrower shall make the proceeds of (i) the Financing and (ii), if extended, the ADB and OFID financings available to the Lead Project Agency and each other Project Party in accordance with the AWPBs, the Government Financial Institution Subsidiary Loan Agreement and its customary national procedures to carry out the Project.		Complied. No subsidiary loan agreement signed with ADB	
Sections 3.05 - 3.07	Availability of Additional Resources, Channelling of Project Resources, Procurement.	During Project Implementation	In compliance	
Article IV				
Sections 4.01, 4.02	Monitoring, Progress Reports.	During Project Implementation	In compliance	
Section 4.03 (a)	The Lead Project Agency, the Fund and other stakeholders as appropriate shall jointly carry out a review of Project implementation no later than forty eight (48) months after the Effective Date (the "Mid-Term Review") based on terms of reference prepared by the PSO in consultation with the Lead Project Agency and approved by the Fund. Among other things, the Mid-Term Review shall consider the achievement of Project objectives and the constraints thereon, and recommend such reorientation as may be required to achieve such objectives and remove such	14 November 2012	Complied on 16 <sup>th</sup> January to 6 <sup>th</sup> February 2012	

Section	Covenant	Target Action Due Date	Compliance Status Date	Remarks
	constraints.			
Section 4.03 (b)	The Lead Project Agency shall ensure that the recommendations resulting from the Mid-Term Review are implemented within the specified time therefore and to the satisfaction of the Fund. It is agreed and understood that such recommendations may result in modifications to the Loan Documents or cancellation of the Loan and the Grant.		Complied.	The Project Financing Agreement was amended on 12 September 2013 based on the recommendations of the Mid-term Review.
Section 4.04	The PSO, through the Lead Project Agency shall submit to the Fund the completion report on the Project required by Section 8.04 (Completion Report) of the General Conditions no later than six months after the Project Completion Date. In addition to those matters specified in said Section 8.04, the completion report shall evaluate and detail the Project's impact on the Target Group.		Not yet applicable	
Section 4.05	The Borrower and each Project Party shall facilitate all evaluations and reviews of the Project that the Fund may carry out during the Project Implementation Period and for ten years thereafter, as required by Section 10.05 (Evaluations of the Project) of the General Conditions.		In compliance	
Article V				
Section 5.01 (a)	The Lead Project Agency shall maintain separate accounts and records and thereafter prepare the financial statements of the operations, resources and expenditures related to the Project required by Section 9.02 (Financial Statements) of the General Conditions in respect of each Fiscal Year (the "LPA Financial Statements").		In compliance	
Section 5.01 (b)	The Borrower shall ensure that the participating CFI's, LGU's, PO's and NCIP maintain separate accounts and records related to the Project. The Borrower shall ensure that the above mentioned Project Parties submit to the Lead Project Agency monthly financial reports of their respective expenditures related to the Project as prescribed by the Borrowers state accounting and auditing rules and regulations (Financial Reports)		In compliance	
Section 5.01 (c)	Thereafter, the Lead Project Agency shall consolidate on an annual basis, the LPA Financial Statements and the		In compliance	

Section	Covenant	Target Action Due Date	Compliance Status Date	Remarks
	Financial Reports mention in Section 5.01 (b) (collectively “Consolidated Financial Statements”) and forward such Consolidated Financial Statements to the Fund within nine months after the end of each Fiscal Year.			
Section 5.02 (a)	Within 90 days after the Effective Date, the Borrower shall appoint, with the prior approval of the Fund, independent auditors selected by the Borrower in accordance with the procedures and criteria set forth in the Fund’s “Guidelines on Project Audits (Borrowers’ Use)” to audit the Consolidated Financial Statements relating to the Project for the first Fiscal Year. Thereafter, as soon as practicable but in no event later than 90 days after the beginning of each succeeding Fiscal Year, the Borrower, with the prior approval of the Fund, shall confirm such auditors’ appointment or so appoint new independent auditors for such Fiscal Year in accordance with this Subsection 5.02(a).		Complied	
Section 5.02 (b)	The Borrower shall ensure that the consolidated Financial Statements relating to the Project are audited in accordance with International Standards on Auditing, as may be amended from time to time, and Section 9.03 of the General Conditions each Fiscal Year until the Loan Closing Date, by auditors selected pursuant to Section 5.02(a). In addition to the audit report on the Consolidated Financial Statements, the auditors shall provide: (i) an opinion on the certified statements of expenditure and the operation of the Special Account and the Grant Bank Account; and (ii) a separate management letter, addressing the adequacy of the accounting and internal control systems. The PSO, through the Lead Project Agency, shall deliver the above-mentioned items to the Fund within six months of the end of each such Fiscal Year. The PSO, within one month of receiving the management letter from the auditors, shall submit to the Fund, through the Lead Project Agency, a copy of the response that the PSO sent to the auditors.		In compliance	

Section	Covenant	Target Action Due Date	Compliance Status Date	Remarks
Article VI				
Sections 6.01 - 6.04	Suspension, Cancellation, Acceleration of Maturity, Other remedies		Not applicable	
Article VII				
Sections 7.01 - 7.03	Conditions Precedent to Effectiveness, Legal Opinion, Deadline for Effectiveness		Complied	
Schedule 3				
Schedule 3 A, 1-7	Project Implementation, Organisation and Management		Complied	
Schedule 3 B, 8.1	Implementation of Project Components		Complied	
Schedule 3 B, 8.2	<i>LAF under the Agriculture and Agribusiness Development and Income Generating Activities Component.</i> The Project shall provide the necessary funding from the LAF in the form of grants to CFIs who shall on lend such proceeds to LIGs with the aim of supporting the implementation of Subcomponent (b) of the Agriculture and Agribusiness Development and Income Generating Activities as defined by Subsection 5C of Schedule 1. CFIs manage and disburse the proceeds from the LAF grant to LIGs financed by LAF grants, LIGs shall revolve the loan proceeds in accordance with the terms and conditions set forth in the respective Memoranda of Understanding between the Project and each of the participating CFIs, as defined in Subsection 8.1 of Schedule 3 and in the agreements between respective CFIs and LIGs.		In compliance	
Schedule 3 B, 8.2.1	<i>Responsibilities of the Participating CFIs.</i> CFIs shall be responsible for channelling the LAF proceeds to the LIGs with viable business plans; releasing, collecting and monitoring loans on lent from CFIs to the LIGs; preparing and submitting financial/disbursement reports; and coaching/mentoring LIGs on financial management. The CFIs shall collect repayments of loans from the LIGs and hand over the same to the respective LIGs as revolving funds when fully capable of managing said funds.		In compliance	
Schedule 3 B, 9	<i>Revolving Fund.</i> CFIs shall manage the disbursement of loans to LIGs, financed by LAF grants proceeds, and the loan repayments from LIGs on the terms and conditions outlined in Subsection 8.2 above. The LIGs shall utilize the		In compliance	

Section	Covenant	Target Action Due Date	Compliance Status Date	Remarks
	loans from the LAF grant to finance the approved income-generating subprojects, and repay the loans to the CFIs. The principal less the reasonable operating and miscellaneous cost incurred by the CFIs shall accrue to the respective LIGs to be used as revolving funds to sustain their income generating subprojects after the end of the Project.			
Schedule 3 B, 10.1	Social mobilisation is intended to strengthen existing, or the formation of new, POs in response to Project initiatives, through the deployment of Community Mobilisation Officers to be recruited and trained by NGOs contracted by the PSO. Members of such POs shall be invited to provide a list of priority interventions to be financed by the Project, under the responsibility of the participating Municipal LGU. Participatory Project Investment Plans, drafted by the POs, shall be integrated in the Municipal plans for approval by the competent authorities. Funds required for PIP implementation shall be disbursed by the PSO to the relevant implementing agencies subject to the authorisation of the Mayor of the concerned Participating Municipality.		Complied	
Schedule 3 B, 11.1	The PSO shall prepare a draft Project Implementation Manual (the "PIM") as soon as practical, but in no event later than 180 days after the Effective Date. The draft PIM shall include, among other things, details of the procedures, processes, criteria and responsibilities for implementation of all activities under the Project. The PIM shall also provide information on financial management procedures, processes, criteria and Implementing Agencies' responsibilities, as well as details on flow of funds arrangements to the respective implementing agencies from the Project Accounts.		Complied.	Final draft submitted in October 23, 2013
Schedule 3 B, 11.1.2	The PSO shall submit the draft PIM to the RISC for approval. When so approved, the PSO shall forward the draft PIM to the Fund for its comments and approval.		Complied	RISC approved PIM; PIM submitted to IFAD in October 2013
Schedule 3 B, 11.1.3	The PSO shall adopt the PIM substantially in the form approved by the Fund, and shall promptly provide copies thereof to the Fund.		Complied	

<b>Section</b>	<b>Covenant</b>	<b>Target Action Due Date</b>	<b>Compliance Status Date</b>	<b>Remarks</b>
Schedule 3 Additional Covenants 1 – 10	Gender, Indigenous Peoples' (IPs) Concerns, Monitoring, Pest Management Practices, Resource Protection, Insurance, Key Project staff, Authorisations, Use of Project Vehicles and Other Equipment, Fraud and Corruption.		In compliance	
Schedule 4				
Parts A, B, C, D and E, paragraphs 1-11	General, Procurement of Goods and Works, Procurement of Consulting Services, Preference Requirements, Review of Procurement Decisions		In compliance	

## Appendix 8: Project Costs and Financing

This Appendix describes the assumptions underlying the derivation of the project costs and financing plan. Project cost estimates are based on field data as of January 2016 and was prepared using costab version 3.01. Key assumptions employed in cost estimates are (i) a two year period implementation period starting from January 2017, (ii) an exchange rate of PhP 45 to one USD, (iii) taxes and duties are excluded from reimbursement by IFAD and (iv) application of IFAD financing rules for reimbursement as per ongoing CHARMP2. Based on current prices, the total project cost was estimated at PhP 619.563 million (USD 13.505 million) as summarized below.

**Table 8.1 Second Cordillera Highland Agricultural Resource Management Project**

Components Project Cost Summary

IFAD_LP	(PHP '000)			(USD '000)			%	% Total
	Local	Foreign	Total	Local	Foreign	Total	Foreign Exchange	Base Costs
1. Social Mobilisation, Planning, Titling	50,983	2,481	53,463	1,140	56	1,196	5	9
2. Community Watershed Conservation /a	46,827	6,307	53,134	1,041	140	1,181	12	9
3. Agriculture, Agribusiness and IGAs /b	44,767	4,082	48,849	995	91	1,086	8	8
4. Rural Infrastructure	379,251	2,274	381,525	8,428	51	8,478	1	64
5. Project Management	49,930	7,925	57,854	1,116	177	1,293	14	10
<b>Total BASELINE COSTS</b>	<b>571,757</b>	<b>23,068</b>	<b>594,826</b>	<b>12,719</b>	<b>514</b>	<b>13,234</b>	<b>4</b>	<b>100</b>
Physical Contingencies	-	-	-	-	-	-	-	-
Price Contingencies	23,661	1,076	24,737	261	11	271	4	2
<b>Total PROJECT COSTS</b>	<b>595,419</b>	<b>24,144</b>	<b>619,563</b>	<b>12,980</b>	<b>525</b>	<b>13,505</b>	<b>4</b>	<b>102</b>

\a includes forest management and agroforestry

\b IGAs: Income Generating Activities

**Table 8.2 Expenditure Accounts by Components - Totals Including Contingencies**

IFAD\_LP (USD '000)

	Social Mobilization, Participatory Investment Planning	Community Watershed Conservation	Agriculture, Agribusiness and IGAs	Rural Infrastructure	Project Management	Total
<b>I. Investment Costs</b>						
A. Civil Works	-	-	-	8 228	-	8 228
C. Equipment, Materials	3	319	57	-	3	383
D. Training & Studies	869	413	419	155	484	2 340
E. Advisory Services	248	333	372	175	351	1 479
F. Livelihood Assistance Fund	-	-	204	-	-	204
<b>Total Investment Costs</b>	<b>1 120</b>	<b>1 065</b>	<b>1 052</b>	<b>8 558</b>	<b>838</b>	<b>12 633</b>
<b>II. Recurrent Costs</b>						
A. Allowances	59	117	45	-	-	221
B. Operation & Maintenance	43	23	11	93	482	651
<b>Total Recurrent Costs</b>	<b>101</b>	<b>140</b>	<b>56</b>	<b>93</b>	<b>482</b>	<b>872</b>
<b>Total PROJECT COSTS</b>	<b>1 221</b>	<b>1 204</b>	<b>1 108</b>	<b>8 651</b>	<b>1 320</b>	<b>13 505</b>
Taxes	-	-	-	-	-	-
Foreign Exchange	57	143	93	52	181	525

**Table 8.3 Second Cordillera Highland Agricultural Resource Management Project**

**Expenditure Accounts by Financiers**

	(PHP '000)													
	IFAD Loan	%	IFAD Grant	%	LGUs	%	Beneficiaries	%	GoP	%	Total	%	F.E.	(Excl. taxes)
<b>I. Investment Costs</b>	270,286	71.7	-	-	33,687	8.9	3,987	1.1	68,783	18.3	376,743	60.8	-	376,743
A. Civil Works	6	71.7	-	-	7	9	3,987	1	3	3	3	60.8	-	376,743
C. Equipment, Materials	15,710	90.0	-	-	-	-	-	-	1,746	0	17,455	2.8	3,491	13,964
D. Training, Studies	80,967	74.8	18,352	16.9	-	-	-	-	8,996	8.3	108,315	17.5	9,116	99,199
E. Advisory Services	60,993	90.0	-	-	-	-	-	-	6,777	0	67,770	10.9	5,642	62,129
F. Livelihood Assistance Fund	9,296	100.0	-	-	-	-	-	-	-	-	9,296	1.5	-	9,296
<b>Total Investment Costs</b>	437,251	75.4	18,352	3.2	33,687	5.8	3,987	0.7	86,302	14.9	579,579	93.5	18,248	561,331
<b>II. Recurrent Costs</b>														
A. Allowances	9,127	90.0	-	-	-	-	-	-	1,014	0	10,141	1.6	-	10,141
B. Operation & Maintenance	26,858	90.0	-	-	-	-	-	-	2,984	0	29,843	4.8	5,896	23,947
<b>Total Recurrent Costs</b>	35,986	90.0	-	-	-	-	-	-	3,998	0	39,984	6.5	5,896	34,088
<b>Total PROJECT COSTS</b>	473,237	76.4	18,352	3.0	33,687	5.4	3,987	0.6	90,300	14.6	619,563	100.0	24,144	595,419

**Table 8.4 Second Cordillera Highland Agricultural Resource Management Project**

**Expenditure Accounts by Financiers**

	(USD '000)													
	IFAD Loan	%	IFAD Grant	%	LGUs	%	Beneficiaries	%	GoP	%	Total	%	F.E.	(Excl. taxes)
<b>I. Investment Costs</b>	5,903	71.7	-	-	736	8.9	87	1.1	1,502	18.3	8,228	60.9	-	8,228
A. Civil Works	5,903	71.7	-	-	736	8.9	87	1.1	1,502	18.3	8,228	60.9	-	8,228
C. Equipment, Materials	344	90.0	-	-	-	-	-	-	38	10.0	383	2.8	77	306
D. Training, Studies	1,766	75.5	378	16.1	-	-	-	-	196	8.4	2,340	17.3	197	2,143
E. Advisory Services	1,331	90.0	-	-	-	-	-	-	148	10.0	1,479	11.0	123	1,356
F. Livelihood Assistance Fund	204	100.0	-	-	-	-	-	-	-	-	204	1.5	-	204
<b>Total Investment Costs</b>	9,548	75.6	378	3.0	736	5.8	87	0.7	1,885	14.9	12,633	93.5	396	12,237
<b>II. Recurrent Costs</b>														
A. Allowances	199	90.0	-	-	-	-	-	-	22	10.0	221	1.6	-	221
B. Operation & Maintenance	586	90.0	-	-	-	-	-	-	65	10.0	651	4.8	129	522
<b>Total Recurrent Costs</b>	785	90.0	-	-	-	-	-	-	87	10.0	872	6.5	129	743
<b>Total PROJECT COSTS</b>	10,333	76.5	378	2.8	736	5.4	87	0.6	1,972	14.6	13,505	100.0	525	12,980

**DETAILED PROJECT COSTS**

The following note provides a general description of the specific cost items within each cost account category;

1. Civil works include Farm to Market Roads, Communal Irrigation Systems, Domestic Water Supply Systems, Foot Paths, Tramlines and community infrastructure including Solar Driers, Multi-Purpose Warehouses and Greenhouses;
2. Livelihood Assistance Fund (LAF) is the start-up capital for Livelihood Assistance Groups (LIGs);
3. Equipment and Materials include planting materials, equipment for LIG groups and other office equipment such as Xerox machine;

4. Trainings shall include capability building trainings for BPMETs, (IAs), (POs), BAWASAs, LIGs, partner LGU Staff, and studies shall include Enterprise Development Plans (EDPs), Integrated Watershed Management Plan (IWMP) and ASDPPs;
5. Advisory Services shall include consultancies and salaries of staff; and
6. Recurrent Costs shall include office supplies, travelling expenses and other O&M costs such as water and electricity, and vehicle repairs for PSO and PCO offices.

## Appendix 9: Economic and Financial Analysis

### A. Financial Analysis

#### Key Assumptions

The project shall rehabilitate an additional 482 hectares (has) of Communal Irrigation systems (CIS) which shall benefit a total of 720 farm households; rehabilitate a total of 85.99 kilometers (kms) of FMRs with an expected road users of 9,757 farm households; construct an aggregate total of foot paths with an aggregate length of 4,0450 linear meters (lms) to benefit a total of 1,500 farm households; construct 625 lms foot bridges which will benefit a total of 899 households; construct a total of 12 units of Domestic Water Supply Systems that will cater to a total of 1,177 farm households. The project shall also provide a total of PhP 9 million as start-up capital for 90 LIG groups which will benefit a total of 1,350 farm households. In addition, the project shall construct other community infrastructure including solar driers, greenhouses and multi-purpose warehouses to complement further enhance the benefits that will accrue to the farmer beneficiaries.

#### Other assumptions used in the Financial Analysis are:

- Benefits from major rural infrastructure that include FMRs, CIS, DWS, Foot Paths, and Tramlines shall be generated after the physical completion of the facilities.
- Full development stage of enterprises or livelihood from provision of LAF, shall be achieved on the 3<sup>rd</sup> year of business operation.
- For LIGs, it was assumed that the Return on Investment (ROI) on the first year of operation is only 10%. On the second year, it was assumed to increase to 30% and on third year and onwards, a 40% ROI was assumed. Full development for LIGs is expected on the 3<sup>rd</sup> year of operation.
- For CIS sub-projects, full development shall occur after completion. No gradual adoption since the project shall only rehabilitate the irrigation facilities and users are already familiar with its operation.
- Each LIG group to be formed shall have 15 members
- Time saved due to foot paths, foot bridges and tramlines shall be utilized in economically productive work;
- Beneficiary LGUs can immediately provide the counterpart funds for RID subprojects;
- Average market price of Palay is PhP 19 per kilogram and PhP 15 per kilogram for vegetables.
- Annual maintenance and operating costs for completed FMRs and CISs is 20% of construction costs while maintenance and operating costs for other j
- All cost items are 100% net of taxes.

#### Subproject Model

Following have been developed and used for the analysis. Table below provides a list of these models.

Table 9.1. List of Models used in the Economic and Financial Analysis

FMR Model (VOCs per kg- kilometer)	CIS (Crop) Model (1 Ha)	Time Savings Model (per HH)	LIG (Enterprise) Model
VOCs for Freight	Paddy Rice	Foot Path	Robusta Coffee Trading
VOCs for Passenger	Vegetable	DWS	Achuete Trading

**A.1.1. FMR VOCs Models:** The rehabilitation of FMRs in this proposed project is expected to generate Vehicle Operating Costs Savings (VOCs) due to road improvement. As FMRs improve, the VOC shall decline due lower gasoline consumption as well as lower costs of repairs and maintenance. The model indicates that the VOC decreased from PhP 18.31 to PhP 4.55 per ton-km due to project's improvements when transporting agricultural products to the market. This translates to VOCs savings of PhP 13.76 per ton-km. In the case of the VOCs for passenger per km, an incremental savings of PhP 2.67 has been estimated (Table 9.2).

**Table 9.2. Derivation of the Vehicle Operating Costs Savings (VOCs) of FMR Subprojects for Agricultural Freight (in kg-km) and Passenger (in passenger-km)**

ITEM	WITHOUT THE PROJECT		WITH THE PROJECT		VOC SAVINGS
	Percent	VOC/Ton/km	Percent	VOC/Ton/km	
<b>(i) Freight</b>					
Jeepney	0.6	22.51	0.3	6.753	
Truck	0.4	12	0.7	3.6	
VOC (Weighted Average)		18.31		4.55	13.76 (per ton-km)
<b>(ii) Passenger</b>					
Tricycle	0.3	5.62	0.1	1.69	
Jeepney	0.6	2.7	0.6	0.81	
Truck	0.1	1.44	0.3	0.43	
VOC (Weighted Average)		3.45		0.78	2.67 (per passenger km)

**A.1.2. Crop Models for CIS:** Five crop models were developed for each province (except in Apayao where CIS rehab is not being proposed) in estimating the financial benefits from CIS rehabilitation. The crop model shows that the benefit from CIS rehabilitation are due to the expected increase in the cropping intensity or the increase in the effective crop area (ECA) of the farmers' agricultural land and a 10% increase in yield per unit area. The increase in size of agricultural land being cultivated shall contribute to increased production on an annual basis. The annual net incremental increase in farm income per ha for CIS beneficiaries vegetable production is PhP 88,566 (Table 9.3). For rice production an annual incremental increase in farm income is estimated at PhP 56,350 (Table 9.4). The model indicates a lower cost in land preparation particularly the number of days spent in plowing the field due to the softer condition of the soil as a result of the CIS rehabilitation. Double of costs and benefits is because of double season due to availability of irrigation water during dry season.

**Table 9.3 Derivation of Incremental Financial Benefits for Vegetables per Hectare per Cropping and per Year, CHARMP 2 Scale Up**

ITEM	WITHOUT THE PROJECT		WITH THE PROJECT		INCREMENT	
	Value (₱)		Value (₱)		Value (₱)	
	Per Cropping	Per Year <sup>a</sup>	Per Cropping	Per Year <sup>a</sup>	Per Cropping	Per Year <sup>a</sup>
	$C1= A1xB1$	$D1=1CxCPI_1$	$C2= A2xB2$	$D2=C2xCPI_2$	$C2-C1$	$D2-D1$
<b>A. Production Cost</b>						
1. Labor Cost						
Sub-total	48,500.00	48,500.00	47,000.00	62,980.00	(1,500)	14,480
2. Materials						
Sub-total	10,600.00	10,600.00	10,600.00	14,204.00		3,604
<b>Total Production Cost</b>	59,100.00	59,100.00	57,600.00	77,184.00	(1,500)	18,084

<b>B. Gross Income</b>						
Gross Value	225,000.00	225,000.00	247,500.00	331,650.00	22,500	106,650
<b>C. Net Income</b>		<b>165,900.00</b>		<b>254,466.00</b>		<b>₱88,566.00</b>
<b>Incremental Income Per Farm Household<sup>b</sup></b>						<b>₱59,339.22</b>
aCropping intensity of 1 and 1.34 for without and with the project respectively. (331,650 = 225,000*1.34)						
bFarm household owns 0.67 ha of land.						

**Table 9.4 Derivation of Incremental Financial Benefits for Rice per Hectare per Cropping and per Year, CHARMP 2 Scale Up**

ITEM	WITHOUT THE PROJECT		WITH THE PROJECT		INCREMENT	
	Value (₱)		Value (₱)		Value (₱)	
	Per Cropping	Per Year <sup>a</sup>	Per Cropping	Per Year <sup>a</sup>	Per Cropping	Per Year
<b>A. Production Cost</b>						
1. Labor Cost						
Sub-total	28,250.00	28,250.00	28,250.00	56,500.00	0	28,250
2. Material Inputs						
Sub-total	6,600.00	6,600.00	6,600.00	13,200.00	0	6,600
<b>Total Production Cost</b>	<b>34,850.00</b>	<b>34,850.00</b>	<b>34,850.00</b>	<b>69,700.00</b>	<b>0</b>	<b>34,850</b>
<b>B. Gross Income</b>						
Gross Value	76,000.00	76,000.00	83,600.00	167,200.00	7,600	91,200
<b>C. Net Income</b>		<b>41,150.00</b>		<b>97,500.00</b>		<b>₱56,350.00</b>
<b>Incremental Income Per Farm Household<sup>b</sup></b>						<b>₱37,754.50</b>

aCropping intensity of 1 and 1.34 for without and with the project respectively.

bFarm household owns 0.67 ha of land.

**A.1.3. DWS Time Savings model.** This proposed project adopted the time savings approach in determining the impact of Domestic Water Supply systems. In particular, the time saved by a given farm household can be realized due to the provision of DWS in the area. The time that can be saved by a household in terms of fetching water on a daily basis can be devoted to economically productive activities and was monetized based on the prevailing wage rate in the area. Results of this model shows that the total incremental man-days saved per HH is 30.42 man-days which is translated to an annual incremental benefits of PhP 7,756 per HH (Table 9.5).

**Table 9.5. Estimating the Benefits from Domestic Water Supply Projects  
CHARMP 2 Scale Up**

ITEMS	Derivations/ Assumptions	without the project	with the project	Difference (C1=A1-B1)
		(A1)	(B1)	(C1)
<b>A. Benefits from Cost Saving Time in Fetching Water</b>				
(i) Average Frequency of fetching water per day per HH	Survey	2	2.00	
(ii) Average Hours Spent for fetching water/HH	Survey	0.75	0.42	
(iii) Total number of Hours spent for fetching/day/HH	(i) x (ii)	1.5	0.833333333	
(iv) Total number of Hours spent for fetching/year/HH	(iii) x 365 days	547.5	304.1666667	
(v) Equivalent number of working days Saved/year/HH	(iv)/8 hours	68.44	38.02	30.42
(vi) Wage rate per day	survey	255	255	
<b>(vii) Total Cost Saving Time for all Households per year</b>	<b>(vii) x (viii) x (ix)</b>	<b>17,451.56</b>	<b>9,695.31</b>	<b>7756.3</b>
<b>TOTAL INCREMENTAL DWS BENEFITS PER HOUSEHOLD PER YEAR</b>				<b>7,756.25</b>

**A.1.4. Foot Path Time Savings Model:** The approach in estimating the benefits in Foot Path time savings model is similar to DWS except that the time saved by the household is shall come from the time saved by household members when accessing a given destination including health, educational, religious and other institutions where they are expected to reduce the number of minutes to reach such destinations. Results of the model indicate that a given household can save an incremental annual equivalent of 468 man/days saved which can be translated in an annual incremental benefits of PhP 5,466 per household (Table 9.6).

**Table 9.6. Derivation of Financial Incremental Benefit per Household for Footpath and Footbridge Projects, CHARMP 2 Scale Up**

ITEMS		Difference	Without the project	With the project
		(A-B)	A	B
<b>A. Benefits from Walking</b>				
(i) Average Frequency of walking per day per HH	survey		2	2
(ii) Average Hours Spent in walking /HH	survey		0.416666667	0.208333333
(iii) Total no. of Hrs spent for walking/day/HH	(i)x(ii)		0.833333333	0.416666667
(iv) Total no. of Hrs spent for walking /year/HH	(iii)x365		304.1666667	152.0833333
(v) Equivalent number of Working days of walking/year/HH	item (iv)/8 hrs		38.02083333	19.01041667
(viii) Wage rate per day	Given		255	255
<b>INCREMENTAL WALKING BENEFITS PER HOUSEHOLD PER YEAR</b>	<b>(vii)x(viii)x(ix)</b>	<b>4,848</b>	<b>9,695.31</b>	<b>4,847.66</b>
<b>ITEMS</b>		<b>Difference</b>		
<b>B. Benefits from Manual Hauling</b>				
(i) Total Agricultural Production per year in kg	survey			
(ii) Equivalent volume to be hauled per year	(i) x percent marketed		179,520.00	179,520.00

(iii) Equivalent no. of 50kg to be hauled	(ii)/50		19.41	19.41
(iv) Total no. of min. spent for hauling a 50kg freight	Given		120.00	60.00
(v) Equivalent number of Working man-hours saved due to project per 50kg	(iv)/60		2.00	1.00
(vi) Equivalent man-days saved to haul 50kg	(v)/8		0.25	0.13
(vii) Wage rate per day	Given		255.00	255.00
(viii) Value of time saved in pesos to haul 50kg	(vi)x(vii)		63.75	31.88
(ix) Incremental benefits to haul annual volume of agricultural production/yr	(viii) x (iii)		1,237.39	618.69
<b>INCREMENTAL BENEFITS PER YEAR for Manual Hauling</b>	<b>(ix)x(x)</b>	<b>619</b>	<b>1,237.39</b>	<b>618.69</b>
<b>TOTAL INCREMENTAL BENEFITS PER HOUSEHOLD PER YEAR</b>		<b>5,466</b>	<b>10,932.70</b>	<b>5,466.35</b>

**A.1.5. Robusta Coffee and Achuete Trading Models for LIGs:** The provision of LAF among the 90 LIGs has allowed them to increase the volume of transaction due to the start-up capital provided by the project. The increased volume of traded coffee and achuete products is expected to contribute in augmenting the net profit of the enterprises being supported by the project. Aside from the start-up capital, the capability-building training assistance and the market linkages shall complement the operation of the enterprises. Tables 9.7 and 9.8 indicate annual incremental increases in profit of the LIGs by PhP18,941, and PhP 20,567 for Coffee and Achuete trading, correspondingly during the first year of operation. This is however, expected to quadruple at full development expected on their year of business operation.

**Table 9.7. Derivation of Financial Incremental Benefits for Livelihood Assistance Fund used in Crop Trading, CHARMP 2 Scale Up, Coffee Robusta Trading**

ITEM	WITHOUT THE PROJECT	WITH THE PROJECT	INCREMENT
	Value (P)	Value (P)	Value (P)
<b>A. Trading Cost</b>			
1. Cost of Purchase			
Coffee Robusta	217,200.00	1,255,040.00	
2. Cost of Marketing			
Transportation Cost	5,430.00	31,376.00	
3. Labor Cost			
Wages (part-time)	8,800.00	8,800.00	
Hauling Cost	1,357.50	7,844.00	
De-hauling Cost	543.00	3,137.60	
<b>Total Production Cost</b>	<b>233,330.50</b>	<b>1,306,197.60</b>	<b>1,072,867.10</b>
<b>B. Gross Income</b>			
Gross Value	<b>244,350.00</b>	<b>1,411,920.00</b>	<b>1,167,570.00</b>
<b>C. Net Income</b>	<b>11,019.50</b>	<b>105,722.40</b>	<b>94,702.90</b>
<b>INCREMENTAL INCOME PER LIG</b>			<b>₱18,940.58</b>
<b>INCREMENTAL INCOME PER HOUSEHOLD</b>			<b>₱1,262.71</b>

\*Investment Benefits per Php 500,000.00 Livelihood Assistance Fund (LAF) whereas 1 Livelihood Interest Group = 15 Households

**Table 9.8. Derivation of Financial Incremental Benefits for Livelihood Assistance Fund used in Crop Trading, CHARMP 2 Scale Up, Achuete Trading**

ITEM	WITHOUT THE PROJECT	WITH THE PROJECT	INCREMENT
	Value (₱)	Value (₱)	Value (₱)
<b>A. Trading Cost</b>			
1. Cost of Purchase Achuete	341,000.00	660,000.00	
2. Cost of Marketing Transportation Cost	12,400.00		
3. Labor Cost			
Hauling Cost	3,100.00	6,000.00	
De-hauling Cost	6,200.00	12,000.00	
<b>Total Production Cost</b>	<b>362,700.00</b>	<b>678,000.00</b>	315,300.00
<b>B. Gross Income</b>			
Gross Value	403,000.00	<b>780,000.00</b>	377,000.00
<b>C. Net Income</b>	<b>40,300.00</b>	<b>102,000.00</b>	<b>61,700.00</b>
<b>INCREMENTAL INCOME PER LIG</b>			<b>₱20,566.67</b>
<b>INCREMENTAL INCOME PER HOUSEHOLD</b>			<b>₱1,371.11</b>

\*Investment Benefits per Php 300,000.00 Livelihood Assistance Fund (LAF) whereas 1 Livelihood Interest Group = 15 Households

**\*\*With the project, buyers pick up Atsuete produced due to volume increased by transaction and market linkage established provided by AAIGA**

#### A.1.2. Farm / Household Models

Using indicative crop and activity production models, the models broadly illustrate the project's expected impact on the incomes and employment.

**(i) Paddy (Rice) Crop Farm Model:** the model is based on an area of 0.67 ha per household that cultivates paddy rice. With a current cropping intensity of 1.0 or an effective cropping area (ECA) of only 0.67 ha per year, the rehabilitation of the CIS shall result in increasing ECA to 1.34 ha annually. In addition, a 10% increase in yield shall be achieved

**(ii) Vegetable Crop Farm Model:** The model is likewise was based on an area of 0.67 ha per household. The ECA will also be doubled to reach 1.34 ha with 10% increase in yield per ha.

**(iii) Enterprises (LAF) models:** For the purposes of evaluation, two typical enterprises are included under this group: Coffee Robusta and Achuete Trading. The provision of LAF to LIGs, increase in the volume of the coffee and achuete traded, increased profits shall be generated by the LIGs. The enterprise on coffee trading shall be based on a start-up capital of PhP 500,000 while Achuete trading shall be based on PhP start-up capital of PhP 300,000

#### B. Economic Analysis

Following key assumptions were used in the economic and financial analysis of the Programme:

- The benefits have been estimated over a 20 year timeframe using a discount rate of 15%;
- The benefits that have been included in computing the economic and financial analysis include only those benefits which could be realistically quantified;
- Use of a SCF of 0.833 based on the current SER of 1.20 for non-traded output and input prices respectively;
- Use of parity prices based on border prices for traded commodities such as fertilizer and rice was use;
- Average wage rate of 200/person- day;
- Shadow wage rate of 0.60 based on the opportunity cost of labor was used;

- The full benefits for FMRs, CISs, Tramlines and other community infrastructure shall be obtained right after completion of construction;
- For LIGs full development stage of the livelihood enterprises shall be on the third year of operation.

The project as a whole yields an Economic Internal Rate of Return of 22%, a benefit-cost ratio of 1.30, a Net Present Value of PhP 176.68 million (USD 3.926 million). Details on the derivation of the base economic parameters are shown in Tables 9.9. - Tables 9.11. as summarized in the Table below (See Tables 9.12. – 9.13. for details)

These estimates are based on a standard discount rate of 15% used by the NEDA, the Government's planning agency, to consider all investment/loan proposals. IFAD's own internal guidelines recommended that an average of "passive rates of interest" in the national economy is used: i.e. long-term deposit rate; saving account rates; public bonds rates; etc. as this average is a good proxy of the alternative profitability of the investments for the public sector in the country. The fact that financial prices have been converted into economic prices (valuing them at their opportunity cost), is the way to re-establish relative price relations if distortions were not present. The application of a corresponding discount rate of 7% would increase the NPV to PHP 641 327 400 or USD 14 251 720, with B/C ratios of 1.76 and EIRR of 22.46%. showing that the proposed investment has a higher economic value for the whole society than estimated using the standard NEDA discount rate.

Items	Conversion Factor Used	Conversion Value
<b>Labor</b>		
Skilled	Shadow Wage Rate (SWR)	1.0
Unskilled	Shadow Wage Rate (SWR)	0.6
<b>Paddy Rice</b>	Parity Prices	10.91
<b>Fertilizer (TSP)</b>	Parity Prices	43.38
<b>All Other Inputs and Outputs</b>	Standard Conversion Factor (SCF) Or 1/ Shadow Exchange Rate (SER)	0.833

\*SCF = 1/SER where SER= 1.20.

\*\* Parameters are based from ICC Project Evaluation Guideline

**Table 9.10. Import Parity Price for Paddy Rice**

Item	Unit	2016
Export Price, 5% broken, FOB Bangkok <sup>a/</sup>	\$/mt	370
Less Quality Differential (20%)	\$/mt	74
Plus Freight and Insurance to Philippine Port <sup>b/</sup>	\$/mt	33.3
CIF Price in US Dollars <sup>c/</sup>	\$/mt	329
CIF Price in Philippine Peso <sup>d/</sup>	P/mt <sup>c/</sup>	14819
Plus Port Handling Charges <sup>e/</sup>	P/mt	296.37
Importer's Margin <sup>f/</sup>	P/mt	1111
Ex-Warehouse Price	P/mt	16226
Plus Average Transport Cost to Selling Center	P/mt	1000
Trader's Margin <sup>g/</sup>	P/mt	1325
Wholesale Price	P/mt	18551
Less Transport from mill to Wholesaler	P/mt	500
Ex-Mill Price	P/mt	18051
Less Milling Cost	P/mt	1000
Plus Value of by-product	P/mt	500
Pre-Mill Value	P/mt	17551
Paddy Equivalent Price (65% milling recovery)	P/mt	11408
Less Transport from farm to mill	P/mt	500
Parity Price at Farm-Gate (P/mt)	P/mt	<b>10908</b>
Parity Price at Farm-Gate (P/kg)	P/kg	<b>10.91</b>

CIF= Cost, Insurance and freight included in the price.

Import prices are based on the World Bank Commodities Price Forecast (nominal US dollars) at 2016 constant prices

<sup>a/</sup> Forecast as of January 26, 2016

<sup>b/</sup> The Philippine Port used is Poro Pt, La Union @ 9% of FOB

<sup>c/</sup> FOB less quality differential and cost of freight and insurance

<sup>d/</sup> Based on the Peso-Dollar exchange rate of 45.00.

<sup>e/</sup> 2% of the CIF.

<sup>f/</sup> 7.5% of the CIF.

<sup>g/</sup> 2% of ex-warehouse price plus transport cost to selling center.

**Table 9.11. Import Parity Price for TSP.**

Item	Unit	2016
Export Price, Bulk, FOB Eastern Europe <sup>a/</sup>	\$/mt	380
Plus Freight and Insurance to Philippine Port <sup>b/</sup>	\$/mt	34.2
CIF Price in US Dollars <sup>c/</sup>	\$/mt	414
CIF Price in Philippine Peso <sup>d/</sup>	P/mt	18639
Plus Port Handling Charges <sup>e/</sup>	P/mt	373
Importer's Margin <sup>f/</sup>	P/mt	1398
Ex-Warehouse Price	P/mt	20410
Average cost of transport to the distribution center	P/mt	1000
Dealer's Margin <sup>g/</sup>	P/mt	1408
Average cost of transport from distribution center to farm	P/mt	50
Parity Price at Farm-Gate (per mt)	P/mt	<b>43278</b>
Parity Price at Farm-Gate (per kg)		<b>43.28</b>

CIF= Cost, Insurance and freight included in the price.

<sup>a/</sup>Export prices are based on the World Bank Commodities Price Forecast (nominal US dollars) at 2016 constant prices

<sup>b/</sup>The Philippine Port used is Poro Pt, La Union @ 9% of FOB

<sup>c/</sup>FOB less cost of freight and insurance

<sup>d/</sup>Based on the Peso-Dollar exchange rate of 45.00.

<sup>e/</sup>2% of the CIF.

<sup>f/</sup>7.5% of the CIF.

<sup>g/</sup>2% of ex-warehouse price plus transport cost to selling center.

**Table 9.12.1.1. COMPUTATION FOR FINANCIAL INTERNAL RATE OF RETURN FOR ALL PROJECTS, CHARMP 2 SCALE UP**

YEAR	FINANCIAL INCREMENTAL BENEFITS PHP in '000						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-	-	-	-	-	-	-
2018	-	-	1,037.17	5,037.58	-	1,777.83	7,852.58
2019	116,701.21	61,783.61	17,330.46	9,173.87	3,879.60	2,311.17	211,179.92
2020	116,723.79	61,783.61	17,341.85	9,191.48	3,879.60	2,488.96	211,409.28
2021	116,746.97	61,783.61	17,353.54	9,209.13	3,879.60	2,488.96	211,461.79
2022	116,770.76	61,783.61	17,365.53	9,226.81	3,879.60	2,488.96	211,515.26
2023	116,795.17	61,783.61	17,377.84	9,244.53	3,879.60	2,488.96	211,569.70
2024	116,820.24	61,783.61	17,390.48	9,262.28	3,879.60	2,488.96	211,625.15
2025	116,845.96	61,783.61	17,403.45	9,280.06	3,879.60	2,488.96	211,681.63
2026	116,872.37	61,783.61	17,416.76	9,297.88	3,879.60	2,488.96	211,739.17
2027	116,899.48	61,783.61	17,430.43	9,315.73	3,879.60	2,488.96	211,797.80
2028	116,927.31	61,783.61	15,109.91	4,198.47	3,879.60	2,488.96	204,387.85
2029	116,955.88	61,783.61	-	-	-	2,488.96	181,228.45
2030	116,985.21	61,783.61	-	-	-	2,488.96	181,257.78
2031	117,015.33	61,783.61	-	-	-	2,488.96	181,287.89
2032	117,046.25	61,783.61	-	-	-	2,488.96	181,318.82
2033	117,078.00	61,783.61	-	-	-	2,488.96	181,350.57
2034	117,110.61	61,783.61	-	-	-	2,488.96	181,383.17
2035	117,144.09	61,783.61	-	-	-	2,488.96	181,416.65
2036	117,178.47	61,783.61	-	-	-	2,488.96	181,451.04
2037	117,213.78	61,783.61	-	-	-	2,488.96	181,486.35
2038	117,250.05	61,783.61	-	-	-	-	179,033.66
TOTAL	2,339,080.90	1,235,672.20	172,557.43	92,437.81	38,795.96	48,890.22	3,927,434.52

**Table 9.12.1.2. COMPUTATION FOR FINANCIAL INTERNAL RATE OF RETURN FOR ALL PROJECTS, CHARMP 2 SCALE UP**

YEAR	FINANCIAL INCREMENTAL COSTS PHP in '000						
	CIVIL WORKS						
	FMR	CIS	FP/FB	DWS	TL	CI	TOTAL CW
2017	124,925.00	29,500.00	39,910.00	13,360.00	4,000.00	23,500.00	235,195.00
2018	59,637.50	28,705.56	24,128.00	5,770.00	8,000.00	9,000.00	135,241.06
2019	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2020	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2021	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2022	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2023	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2024	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2025	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2026	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2027	44,606.25	14,551.39	6,321.00	1,781.00	1,200.00	-	68,459.64
2028	44,606.25	14,551.39	5,493.00	1,181.00	1,200.00	-	67,031.64
2029	44,606.25	14,551.39	-	-	-	-	59,157.64
2030	44,606.25	14,551.39	-	-	-	-	59,157.64
2031	44,606.25	14,551.39	-	-	-	-	59,157.64
2032	44,606.25	14,551.39	-	-	-	-	59,157.64
2033	44,606.25	14,551.39	-	-	-	-	59,157.64
2034	44,606.25	14,551.39	-	-	-	-	59,157.64
2035	44,606.25	14,551.39	-	-	-	-	59,157.64
2036	44,606.25	14,551.39	-	-	-	-	59,157.64
2037	44,606.25	14,551.39	-	-	-	-	59,157.64
2038	38,468.75	14,551.39	-	-	-	-	53,020.14
<b>TOTAL</b>	<b>1,070,550.00</b>	<b>349,233.33</b>	<b>126,420.00</b>	<b>36,340.00</b>	<b>24,000.00</b>	<b>32,500.00</b>	<b>1,639,043.33</b>

**Table 9.12.1.3. COMPUTATION FOR FINANCIAL INTERNAL RATE OF RETURN FOR ALL PROJECTS, CHARMP 2 SCALE UP**

YEAR	FINANCIAL INCREMENTAL COSTS PHP in '000						TOTAL COST	TOTAL NET INCREMENTAL
	OTHER COSTS							
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs	Total Other Costs		
2017	9,000.00	52,716.00	37,919.53	16,900.00	19,861.85	131,281.38	371,592.38	-371,592.38
2018	-	49,719.00	27,286.84	-	18,551.35	84,733.20	230,798.25	-222,945.67
2019	-	-	-	-	-	-	68,459.64	142,720.28
2020	-	-	-	-	-	-	68,459.64	142,949.64
2021	-	-	-	-	-	-	68,459.64	143,002.16
2022	-	-	-	-	-	-	68,459.64	143,055.62
2023	-	-	-	-	-	-	68,459.64	143,110.06
2024	-	-	-	-	-	-	68,459.64	143,165.51
2025	-	-	-	-	-	-	68,459.64	143,221.99
2026	-	-	-	-	-	-	68,459.64	143,279.53
2027	-	-	-	-	-	-	68,459.64	143,338.16
2028	-	-	-	-	-	-	67,031.64	137,356.21
2029	-	-	-	-	-	-	59,157.64	122,070.81
2030	-	-	-	-	-	-	59,157.64	122,100.14
2031	-	-	-	-	-	-	59,157.64	122,130.26
2032	-	-	-	-	-	-	59,157.64	122,161.18
2033	-	-	-	-	-	-	59,157.64	122,192.93
2034	-	-	-	-	-	-	59,157.64	122,225.53
2035	-	-	-	-	-	-	59,157.64	122,259.01
2036	-	-	-	-	-	-	59,157.64	122,293.40
2037	-	-	-	-	-	-	59,157.64	122,328.71
2038	-	-	-	-	-	-	53,020.14	126,013.52
<b>TOTAL</b>	<b>9,000.00</b>	<b>102,435.00</b>	<b>65,206.37</b>	<b>16,900.00</b>	<b>38,413.21</b>	<b>216,014.58</b>	<b>1,870,997.91</b>	<b>2,056,436.60</b>

**Table 9.12.2. Derivation of Financial Internal Rate of Return of CHARMP 2 Scale Up Sub Project**

YEAR	FINANCIAL NET INCREMENTAL BENEFITS PHP (in '000)						Total Benefits
	FMR	CIS	FP/FB	DWS	TL	LAF	
2017	-124,925.00	-29,500.00	-39,910.00	-13,360.00	-4,000.00	-9,000.00	-220,695.00
2018	-59,637.50	-28,705.56	-23,090.83	-732.42	-8,000.00	1,777.83	-118,388.47
2019	72,094.96	47,232.22	11,009.46	7,392.87	2,679.60	2,311.17	142,720.28
2020	72,117.54	47,232.22	11,020.85	7,410.48	2,679.60	2,488.96	142,949.64
2021	72,140.72	47,232.22	11,032.54	7,428.13	2,679.60	2,488.96	143,002.16
2022	72,164.51	47,232.22	11,044.53	7,445.81	2,679.60	2,488.96	143,055.62
2023	72,188.92	47,232.22	11,056.84	7,463.53	2,679.60	2,488.96	143,110.06
2024	72,213.99	47,232.22	11,069.48	7,481.28	2,679.60	2,488.96	143,165.51
2025	72,239.71	47,232.22	11,082.45	7,499.06	2,679.60	2,488.96	143,221.99
2026	72,266.12	47,232.22	11,095.76	7,516.88	2,679.60	2,488.96	143,279.53
2027	72,293.23	47,232.22	11,109.43	7,534.73	2,679.60	2,488.96	143,338.16
2028	72,321.06	47,232.22	9,616.91	3,017.47	2,679.60	2,488.96	137,356.21
2029	72,349.63	47,232.22	-	-	-	2,488.96	122,070.81
2030	72,378.96	47,232.22	-	-	-	2,488.96	122,100.14
2031	72,409.08	47,232.22	-	-	-	2,488.96	122,130.26
2032	72,440.00	47,232.22	-	-	-	2,488.96	122,161.18
2033	72,471.75	47,232.22	-	-	-	2,488.96	122,192.93
2034	72,504.36	47,232.22	-	-	-	2,488.96	122,225.53
2035	72,537.84	47,232.22	-	-	-	2,488.96	122,259.01
2036	72,572.22	47,232.22	-	-	-	2,488.96	122,293.40
2037	72,607.53	47,232.22	-	-	-	2,488.96	122,328.71
2038	78,781.30	47,232.22	-	-	-	-	126,013.52
<b>TOTAL</b>	<b>1,268,530.90</b>	<b>886,438.87</b>	<b>46,137.43</b>	<b>56,097.81</b>	<b>14,795.96</b>	<b>39,890.22</b>	<b>2,311,891.18</b>
IRR	32.02%	61.79%	10.11%	36.99%	16.61%	25.44%	34.13%
NPV							
PHP	₱188,426.98	₱176,190.23	₱292.38	₱15,263.56	₱641.41	₱5,066.44	₱375,078.07
USD	USD 4,187.27	USD 3,915.34	USD 6.50	USD 339.19	USD 14.25	USD 112.59	USD 8,335.07
BCR	1.516860342	2.515891936	0.863110906	1.674574823	1.045550748	1.647377835	
DB	₱552,987.70	₱292,418.98	₱66,270.91	₱37,890.49	₱14,722.72	₱12,892.52	
DC	₱364,560.72	₱116,228.75	₱76,781.45	₱22,626.93	₱14,081.30	₱7,826.09	

**Table 9.12.3.1. Derivation of Incremental Financial Cost for All CIS projects, CHARMP 2 Scale Up**

Year	Capital Investment PHP (in '000)								
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total	
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	2,950.00	5,900.00	-	14,455.00	-	6,195.00	-	29,500.00	
2018	2,870.56	5,741.11	-	14,065.72	-	6,028.17	-	28,705.56	
2019	-	-	-	-	-	-	-	-	
2020	-	-	-	-	-	-	-	-	
2021	-	-	-	-	-	-	-	-	
2022	-	-	-	-	-	-	-	-	
2023	-	-	-	-	-	-	-	-	
2024	-	-	-	-	-	-	-	-	
2025	-	-	-	-	-	-	-	-	
2026	-	-	-	-	-	-	-	-	
2027	-	-	-	-	-	-	-	-	
2028	-	-	-	-	-	-	-	-	
2029	-	-	-	-	-	-	-	-	
2030	-	-	-	-	-	-	-	-	
2031	-	-	-	-	-	-	-	-	
2032	-	-	-	-	-	-	-	-	
2033	-	-	-	-	-	-	-	-	
2034	-	-	-	-	-	-	-	-	
2035	-	-	-	-	-	-	-	-	
2036	-	-	-	-	-	-	-	-	
2037	-	-	-	-	-	-	-	-	
2038	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	
TOTAL	-	-	-	-	-	-	-	58,205.56	

**Table 9.12.3.2. Derivation of Incremental Financial Cost for All CIS projects, CHARMP 2 Scale Up**

Year	Working Capita (MOOE) PHP (in '000)							Replacement Cost	TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost			Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other					
	10%	20%		49%		21%				
2017	-	-	-	-	-	-	-	-	29,500.00	
2018	-	-	-	-	-	-	-	-	28,705.56	
2019	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2020	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2021	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2022	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2023	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2024	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2025	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2026	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2027	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2028	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2029	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2030	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2031	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2032	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2033	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2034	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2035	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2036	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2037	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
2038	1,164.11	2,328.22	-	5,704.14	-	2,444.63	-	11,641.11	2,910.28	14,551.39
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	-	-	349,233.33

**Table 9.12.4. Derivation of Incremental Financial Benefits for All CIS projects, CHARMP 2 Scale Up**

YEAR	FINANCIAL INCREMENTAL BENEFITS (PHP in '000)									
	ABRA		BENGUET	IFUGAO		KALINGA		MOUNTAIN PROVINCE		Total Benefits
	Rice	Vegetables	Vegetables	Rice	Vegetables	Rice	Vegetables	Rice	Vegetables	E=(AxB)+(CxD)
2017										
2018										
2019	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2020	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2021	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2022	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2023	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2024	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2025	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2026	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2027	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2028	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2029	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2030	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2031	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2032	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2033	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2034	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2035	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2036	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2037	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
2038	6,849.05	3,600.86	30,186.00	4,023.39	3,639.87	3,427.72	1,754.73	1,258.60	7,043.40	61,783.61
<b>TOTAL</b>										1,235,672.20

**Table 9.12.5.1. Derivation of Incremental Financial Cost for All Community Infrastructure projects, CHARMP 2 Scale Up**

	Capital Investment PHP (in '000)							
Year	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	2,350.00	4,700.00	-	11,515.00	-	4,935.00	-	23,500.00
2018	900	1,800.00	-	4,410.00	-	1,890.00	-	9,000.00
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	32,500.00

**Table 9.12.5.2. Derivation of Incremental Financial Cost for All Community Infrastructure projects, CHARMP 2 Scale Up**

Year	Working Capital (MOOE) PHP (in '000)							TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost		Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	-	-	-	-	-	-	-	-	23,500.00
2018	-	-	-	-	-	-	-	-	9,000.00
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	32,500.00

**Table 9.12.6.1. Derivation of Incremental Financial Cost for All Domestic Water Supply projects, CHARMP 2 Scale Up**

	Capital Investment PHP (in '000)							
Year	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	1,336.00	2,672.00	-	6,546.40	-	2,805.60	-	13,360.00
2018	517	1,034.00	-	2,533.30	-	1,085.70	-	5,170.00
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
								-
<b>TOTAL</b>	-	-	-	-	-	-	-	17,810.00

**Table 9.12.6.2. Derivation of Incremental Financial Cost for All Domestic Water Supply projects, CHARMP 2 Scale Up**

Year	Working Capita (MOOE) PHP (in '000)						Sub-Total	TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision			Other Cost
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	-	-	-	-	-	-	-	13,360.00	
2018	60	120	-	294	-	126	-	600	5,770.00
2019	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2020	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2021	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2022	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2023	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2024	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2025	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2026	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2027	178.1	356.2	-	872.69	-	374.01	-	1,781.00	1,781.00
2028	118.1	236.2	-	578.69	-	248.01	-	1,181.00	1,181.00
									-
<b>TOTAL</b>									<b>36,340.00</b>

**Table 9.12.7. Derivation of Incremental Financial Benefit for All Domestic Water Supply projects, CHARMP 2 Scale Up**

YEAR	FINANCIAL INCREMENTAL BENEFITS PHP (in '000)	
	Annual Benefits	Total Benefits
(A)	(B)	(C)
2017	0	5,018.29
2018	5,018.29	9,129.11
2019	9,129.11	9,129.11
2020	9,129.11	9,129.11
2021	9,129.11	9,129.11
2022	9,129.11	9,129.11
2023	9,129.11	9,129.11
2024	9,129.11	9,129.11
2025	9,129.11	9,129.11
2026	9,129.11	9,129.11
2027	9,129.11	4,110.81
2028	4,110.81	5,018.29
<b>TOTAL</b>		<b>91,291.06</b>

**Table 9.12.8.1. Derivation of Incremental Financial Cost for All FMR Projects, CHARMP 2 Scale Up**

Year	Capital Investment PHP (in '000)							Sub-Total
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	12,492.50	24,985.00	-	61,213.25	-	26,234.25	-	124,925.00
2018	5,350.00	10,700.00	-	26,215.00	-	11,235.00	-	53,500.00
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-	-
2031	-	-	-	-	-	-	-	-
2032	-	-	-	-	-	-	-	-
2033	-	-	-	-	-	-	-	-
2034	-	-	-	-	-	-	-	-
2035	-	-	-	-	-	-	-	-
2036	-	-	-	-	-	-	-	-
2037	-	-	-	-	-	-	-	-
2038	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	178,425.00

**Table 9.12.8.2. Derivation of Incremental Financial Cost for All FMR Projects, CHARMP 2 Scale Up**

Year	Working Capital (MOOE) PHP (in '000)						Replacement Cost	TOTAL COST		
	Labor Cost		Cost of Materials			Mgt and Supervision			Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other					
	10%	20%		49%		21%				
2017	-	-	-	-	-	-	-	-	124,925.00	
2018	491	982	-	2,405.90	-	1,031.10	-	4,910.00	1,227.50	59,637.50
2019	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2020	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2021	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2022	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2023	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2024	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2025	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2026	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2027	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2028	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2029	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2030	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2031	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2032	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2033	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2034	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2035	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2036	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2037	3,568.50	7,137.00	-	17,485.65	-	7,493.85	-	35,685.00	8,921.25	44,606.25
2038	3,077.50	6,155.00	-	15,079.75	-	6,462.75	-	30,775.00	7,693.75	38,468.75
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	-	-	1,070,550

**Table 9.12.9. Derivation of Incremental Financial Benefit for All FMR Projects, CHARMP 2 Scale Up**

YEAR	FINANCIAL INCREMENTAL BENEFITS PHP (in '000)		
	Freight Benefits/Year	Passenger Benefits/Year	Total Benefits
	(A)	(B)	C=(A+B)
2017	-	-	-
2018	-	-	-
2019	44,518.65	72,182.55	116,701.21
2020	44,518.65	72,205.14	116,723.79
2021	44,518.65	72,228.31	116,746.97
2022	44,518.65	72,252.10	116,770.76
2023	44,518.65	72,276.52	116,795.17
2024	44,518.65	72,301.58	116,820.24
2025	44,518.65	72,327.31	116,845.96
2026	44,518.65	72,353.72	116,872.37
2027	44,518.65	72,380.83	116,899.48
2028	44,518.65	72,408.66	116,927.31
2029	44,518.65	72,437.23	116,955.88
2030	44,518.65	72,466.56	116,985.21
2031	44,518.65	72,496.68	117,015.33
2032	44,518.65	72,527.60	117,046.25
2033	44,518.65	72,559.35	117,078.00
2034	44,518.65	72,591.95	117,110.61
2035	44,518.65	72,625.43	117,144.09
2036	44,518.65	72,659.82	117,178.47
2037	44,518.65	72,695.13	117,213.78
2038	44,518.65	72,731.39	117,250.05
	TOTAL		2,339,080.90

**Table 9.12.10.1. Derivation of Incremental Financial Cost for All Footpaths and Footbridges Projects, CHARMP 2 Scale Up**

	Capital Investment PHP (in '000)							
Year	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	3,991.00	7,982.00	-	19,555.90	-	8,381.10	-	39,910.00
2018	2,330.00	4,660.00	-	11,417.00	-	4,893.00	-	23,300.00
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	63,210.00

**Table 9.12.10.2. Derivation of Incremental Financial Cost for All Footpaths and Footbridges Projects, CHARMP 2 Scale Up**

Year	Working Capita (MOOE) PHP (in '000)							TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost		Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	-	-	-	-	-	-	-	-	39,910.00
2018	82.8	165.6	-	405.72	-	173.88	-	828	24,128.00
2019	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2020	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2021	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2022	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2023	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2024	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2025	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2026	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2027	632.1	1,264.20	-	3,097.29	-	1,327.41	-	6,321.00	6,321.00
2028	549.3	1,098.60	-	2,691.57	-	1,153.53	-	5,493.00	5,493.00
TOTAL	-	-	-	-	-	-	-	-	126,420.00

**Table 9.12.11. Derivation of Incremental Financial Benefit for All Footpaths and Footbridges Projects, CHARMP 2 Scale Up**

FINANCIAL INCREMENTAL BENEFITS PHP (in '000)		
YEAR	Annual Benefits	Total Benefits
(A)	(B)	©
2017	-	-
2018	1,011.26	1,037.17
2019	16,886.65	17,330.46
2020	16,886.65	17,341.85
2021	16,886.65	17,353.54
2022	16,886.65	17,365.53
2023	16,886.65	17,377.84
2024	16,886.65	17,390.48
2025	16,886.65	17,403.45
2026	16,886.65	17,416.76
2027	16,886.65	17,430.43
2028	14,626.75	15,109.91
2029	-	-
TOTAL	-	172,557.43

**Table 9.12.12. Derivation of Incremental Financial Benefits for All LIG projects, CHARMP2 Scale Up**

YEAR	LIVELIHOOD INTEREST GROUPS (LIG) PER PROVINCE						CUMMULA-TIVE NUMBER OF LIGS	ANNUAL INCREMENTAL BENEFIT PER PHP 500,000 LAF FOR COFFEE ROBUSTA TRADING	ANNUAL INCREMENTAL BENEFIT PER PHP 100,000 LAF FOR COFFEE ROBUSTA TRADING*	ANNUAL INCREMENTAL BENEFIT PER PHP 300,000 LAF FOR ATSUETE TRADING	ANNUAL INCREMENTAL BENEFIT PER PHP 100,000 LAF FOR ATSUETE TRADING*	ANNUAL AGGREGATE INCREMENTAL BENEFITS PHP in '00 0
	ABRA	APAYAO	BENGUET	IFUGAO	KALINGA	MT. PROVINCE						
							A	B	(C=B / 5)	B	(C=B / 5)	(D=C X A)
2017												
2018	15	15	15	15	15	15	9	94,702.90	18,94	61,700.00	20,56	1777.8261
2019	15	15	15	15	15	15	9	123,113.77	24,62	80,210.00	26,73	2311.17393
2020	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2021	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2022	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2023	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2024	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2025	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2026	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2027	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2028	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2029	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2030	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2031	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2032	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2033	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2034	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2035	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2036	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654
2037	15	15	15	15	15	15	9	132,584.06	26,51	86,380.00	28,79	2488.95654

**Table 9.12.13.1. Derivation of Incremental Financial Cost for All Tramline projects, CHARMP2 Scale Up**

	Capital Investment PHP (in '000)							
Year	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	400	800	-	1,960.00	-	840	-	4,000.00
2018	800	1,600.00	-	3,920.00	-	1,680.00	-	8,000.00
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	12,000.00

**Table 9.12.13.2. Derivation of Incremental Financial Cost for All Tramline projects, CHARMP2 Scale Up**

Year	Working Capital (MOOE) PHP (in '000)							TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost		Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	-	-	-	-	-	-	-	-	4,000.00
2018	-	-	-	-	-	-	-	-	8,000.00
2019	120	240	-	588	-	252	-	1,200.00	1,200.00
2020	120	240	-	588	-	252	-	1,200.00	1,200.00
2021	120	240	-	588	-	252	-	1,200.00	1,200.00
2022	120	240	-	588	-	252	-	1,200.00	1,200.00
2023	120	240	-	588	-	252	-	1,200.00	1,200.00
2024	120	240	-	588	-	252	-	1,200.00	1,200.00
2025	120	240	-	588	-	252	-	1,200.00	1,200.00
2026	120	240	-	588	-	252	-	1,200.00	1,200.00
2027	120	240	-	588	-	252	-	1,200.00	1,200.00
2028	120	240	-	588	-	252	-	1,200.00	1,200.00
TOTAL	-	-	-	-	-	-	-	-	24,000.00

**Table 9.12.14. Derivation of Incremental Financial Benefits for All Tramline projects, CHARMP2 Scale Up**

FINANCIAL INCREMENTAL BENEFITS PHP (in '000)		
YEAR	Annual Benefits	Total Benefits
(A)	(B)	©
2017	0	-
2018	-	-
2019	3,879.60	3,879.60
2020	3,879.60	3,879.60
2021	3,879.60	3,879.60
2022	3,879.60	3,879.60
2023	3,879.60	3,879.60
2024	3,879.60	3,879.60
2025	3,879.60	3,879.60
2026	3,879.60	3,879.60
2027	3,879.60	3,879.60
2028	3,879.60	3,879.60
2029		
TOTAL	38,795.96	38,795.96

**TABLE 9.13.1.1. COMPUTATION FOR ECONOMIC INTERNAL RATE OF RETURN FOR ALL PROJECTS, CHARMP 2 SCALE UP**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						Total Benefits
	FMR	CIS	FP/FB	DWS	TL	LAF	
2017	-	-	622.30	3,022.55	-	1,480.93	5,125.78
2018	97,212.10	48,374.24	10,398.28	5,504.32	2,388.93	1,925.21	165,803.09
2019	97,230.92	48,374.24	10,405.11	5,514.89	2,390.50	2,073.30	165,988.96
2020	97,250.22	48,374.24	10,412.12	5,525.48	2,392.12	2,073.30	166,027.48
2021	97,270.04	48,374.24	10,419.32	5,536.09	2,393.77	2,073.30	166,066.75
2022	97,290.38	48,374.24	10,426.71	5,546.72	2,395.47	2,073.30	166,106.81
2023	97,311.26	48,374.24	10,434.29	5,557.37	2,397.21	2,073.30	166,147.66
2024	97,332.69	48,374.24	10,442.07	5,568.04	2,399.00	2,073.30	166,189.33
2025	97,354.68	48,374.24	10,450.06	5,578.73	2,400.83	2,073.30	166,231.84
2026	97,377.27	48,374.24	10,458.26	5,589.44	2,402.72	2,073.30	166,275.22
2027	97,400.45	48,374.24	9,839.88	2,519.08	2,404.65	2,073.30	162,611.60
2028	97,424.25	48,374.24	-	-	-	2,073.30	147,871.79
2029	97,448.68	48,374.24				2,073.30	147,896.22
2030	97,473.77	48,374.24				2,073.30	147,921.31
2031	97,499.53	48,374.24				2,073.30	147,947.07
2032	97,525.98	48,374.24				2,073.30	147,973.52
2033	97,553.13	48,374.24				2,073.30	148,000.67
2034	97,581.02	48,374.24				2,073.30	148,028.56
2035	97,609.66	48,374.24				2,073.30	148,057.20
2036	97,639.08	48,374.24				2,073.30	148,086.62
2037	97,669.29	48,374.24				-	146,043.53
2038	-	-				-	3,140,401.00
<b>TOTAL</b>	<b>1,948,454.39</b>	<b>967,484.79</b>	<b>104,308.40</b>	<b>55,462.69</b>	<b>23,965.19</b>	<b>40,725.55</b>	<b>-</b>

**TABLE 9.13.1.2. COMPUTATION FOR ECONOMIC INTERNAL RATE OF RETURN FOR ALL PROJECTS, CHARMP 2 SCALE UP**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000								
	CIVIL WORKS							LESS 12% TAX	TOTAL CW
	FMR	CIS	FP/FB	DWS	TL	CI			
2017	48,291.51	21,361.29	20,111.05	4,754.86	6,705.36	7,543.53	13,052.11	95,715.49	
2018	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05	
2019	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05	
2020	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05	
2021	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-	44,525.32	
2022	57,313.10	19,247.63	4,440.69	1,301.79	843.03	-	-	83,146.23	
2023	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05	
2024	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05	
2025	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05	
2026	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-	44,525.32	
2027	57,313.10	19,247.63	3,858.99	880.27	843.03	-	-	82,143.02	
2028	25,069.75	7,725.80	-	-	-	-	-	32,795.54	
2029	25,069.75	7,725.80	-	-	-	-	-	32,795.54	
2030	25,069.75	7,725.80	-	-	-	-	-	32,795.54	
2031	30,214.01	7,725.80	-	-	-	-	-	37,939.81	
2032	57,313.10	19,247.63	-	-	-	-	-	76,560.72	
2033	25,069.75	7,725.80	-	-	-	-	-	32,795.54	
2034	25,069.75	7,725.80	-	-	-	-	-	32,795.54	
2035	25,069.75	7,725.80	-	-	-	-	-	32,795.54	
2036	30,214.01	7,725.80	-	-	-	-	-	37,939.81	
2037	53,863.68	19,247.63	-	-	-	-	-	73,111.31	
2038	800,495.88	246,690.59	97,387.58	28,549.15	18,488.39	27,240.53	36,708.12	1,182,143.99	
TOTAL	-	-	-	-	-	-	-	-	

**TABLE 9.13.1.3. COMPUTATION FOR ECONOMIC INTERNAL RATE OF RETURN FOR ALL PROJECTS, CHARMP 2 SCALE UP**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER COSTS								
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Cos	Total Other Costs			
2017	7 497.00	43 912.43	37 919.53	14 077.70	16 544.92	119 951.58	293,428.97	(293,428.97)	
2018		41 415.93	27 286.84		15 453.28	84 156.05	179,871.5	(174 745.75)	
2019	-	-	-	-	-	-	39 381.05	126 422.03	
2020	-	-	-	-	-	-	39 381.05	126 607.91	
2021	-	-	-	-	-	-	39 381.05	126 646.43	
2022	-	-	-	-	-	-	44 525.32	121 541.43	
2023	-	-	-	-	-	-	83 146.23	82 960.58	
2024	-	-	-	-	-	-	39 381.05	126 766.61	
2025	-	-	-	-	-	-	39 381.05	126 808.28	
2026	-	-	-	-	-	-	39 381.05	126 850.79	
2027	-	-	-	-	-	-	44 525.32	121 749.90	
2028	-	-	-	-	-	-	82 143.02	80 468.58	
2029	-	-	-	-	-	-	32 795.54	115 076.24	
2030	-	-	-	-	-	-	32 795.54	115 100.68	
2031	-	-	-	-	-	-	32 795.54	115 125.76	
2032	-	-	-	-	-	-	37 939.81	110 007.25	
2033	-	-	-	-	-	-	76 560.72	71 412.79	
2034	-	-	-	-	-	-	32 795.54	115 205.13	
2035	-	-	-	-	-	-	32 795.54	115 233.02	
2036	-	-	-	-	-	-	32 795.54	115 261.66	
2037	-	-	-	-	-	-	37 939.81	110 146.81	
2038	-	-	-	-	-	-	73 111.31	72 932.22	
TOT	7 497.00	85 328.36	65 206.37	14 077.70	31 998.20	204 107.63	1 386 251.62	3,824,022.13	

**TABLE 9.13.2. Derivation of Economic Internal Rate of Return Per CHARMP 2 Scale Up Sub Project**

YEAR	ECONOMIC NET INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
2019	(104,708.39)	(24,726.02)	(33,451.36)	(11,197.95)	(3,352.68)	(7,497.00)	(184,933.40)
2020	(48,291.51)	(21,361.29)	(19,488.75)	(1,732.31)	(6,705.36)	1,480.93	(96,098.29)
2021	72,142.36	40,648.44	5,957.59	4,202.53	1,545.90	1,925.21	126,422.03
2022	72,161.17	40,648.44	5,964.42	4,213.10	1,547.47	2,073.30	126,607.91
2023	72,180.48	40,648.44	5,971.44	4,223.69	1,549.08	2,073.30	126,646.43
2024	67,056.03	40,648.44	5,978.63	4,234.30	1,550.73	2,073.30	121,541.43
2025	39,977.28	29,126.61	5,986.02	4,244.93	1,552.43	2,073.30	82,960.58
2026	72,241.51	40,648.44	5,993.60	4,255.58	1,554.17	2,073.30	126,766.61
2027	72,262.94	40,648.44	6,001.38	4,266.25	1,555.96	2,073.30	126,808.28
2028	72,284.94	40,648.44	6,009.37	4,276.94	1,557.80	2,073.30	126,850.79
2029	67,163.25	40,648.44	6,017.57	4,287.65	1,559.68	2,073.30	121,749.90
2030	40,087.35	29,126.61	5,980.89	1,638.81	1,561.61	2,073.30	80,468.58
2031	72,354.50	40,648.44	-	-	-	2,073.30	115,076.24
2032	72,378.94	40,648.44	-	-	-	2,073.30	115,100.68
2033	72,404.02	40,648.44	-	-	-	2,073.30	115,125.76
2034	67,285.51	40,648.44	-	-	-	2,073.30	110,007.25
2035	40,212.88	29,126.61	-	-	-	2,073.30	71,412.79
2036	72,483.39	40,648.44	-	-	-	2,073.30	115,205.13
2037	72,511.28	40,648.44	-	-	-	2,073.30	115,233.02
2038	72,539.92	40,648.44	-	-	-	2,073.30	115,261.66
<b>TOTAL</b>	<b>1,036,727.84</b>	<b>651,019.14</b>	<b>6,920.81</b>	<b>26,913.53</b>	<b>5,476.80</b>	<b>31,155.25</b>	<b>1,758,213.38</b>
IRR	35.74%	64.45%	2.05%	23.41%	8.18%	25.36%	34.85%
NPV							
PHP	₱137,758.19	₱108,234.99	(₱14,718.38)	₱5,611.60	(₱1,075.18)	₱5,073.22	₱344,962.66
USD	USD 3,061.29	USD 2,405.22	(USD 327.08)	USD 124.70	(USD 23.89)	USD 112.74	USD 7,665.84
BCR	1.677889543	2.767013186	0.653806182	1.360168174	0.81245933	1.630480509	
DB	₱450,938.74	₱224,147.97	₱39,907.20	₱26,583.38	₱9,087.22	₱10,629.32	
DC	₱268,753.53	₱81,007.19	₱61,038.27	₱19,544.19	₱11,184.83	₱6,519.13	

**TABLE 9.13.3.1. Derivation of Incremental Economic Cost for All Communal Irrigation System Projects, CHARMP 2 Scale Up**

Year	Capital Investment PHP (in '000)							Sub-Total
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	
	Skilled 10%	Unskilled 20%	Equipment	Supplies 49%	Other			
2017	2,950.00	3,540.00	-	12,041.02	-	6,195.00	-	24,726.02
2018	2,870.56	3,444.67	-	9,017.90	-	6,028.17	-	28,705.56
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-	-
2031	-	-	-	-	-	-	-	-
2032	-	-	-	-	-	-	-	-
2033	-	-	-	-	-	-	-	-
2034	-	-	-	-	-	-	-	-
2035	-	-	-	-	-	-	-	-
2036	-	-	-	-	-	-	-	-
2037	-	-	-	-	-	-	-	-
2038	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	46,087.30

**TABLE 9.13.3.2. Derivation of Incremental Economic Cost for All Communal Irrigation System Projects, CHARMP 2 Scale Up**

Year	Working Capita (MOOE) PHP (in '000)						Depreciation Cost	TOTAL COST		
	Labor Cost		Cost of Materials			Mgt and Supervision			Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other					
	10%	20%		49%		21%				
2017	-	-	-	-	-	-	-	-	24,726.02	
2018	-	-	-	-	-	-	-	-	21,361.29	
2019	921.75	1,106.10	-	3,762.29	-	1,935.67	-	9,217.46	7,725.80	
2020	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2021	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2022	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2023	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	11,521.83	
2024	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2025	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2026	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2027	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2028	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	11,521.83	
2029	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2030	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2031	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2032	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2033	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	11,521.83	
2034	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2035	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2036	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2037	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	7,725.80	
2038	921.75	1,106.10	-	3,762.29	-	1,935.67	-	7,725.80	11,521.83	
	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	
<b>TOTAL</b>	-	-	-	-	-	-	-	-	246,690.59	

**TABLE 9.13.4. Derivation of Economic Incremental Benefits for All Communal Irrigation System Projects, CHARMP 2 Scale Up**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)									Total Benefits E=(AxB)+(CxD)
	ABRA		BENGUET	IFUGAO		KALINGA		MOUNTAIN PROVINCE		
	Rice	Vegetables	Vegetables	Rice	Vegetables	Rice	Vegetables	Rice	Vegetables	
2017										
2018										
2019	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2020	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2021	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2022	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2023	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2024	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2025	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2026	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2027	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2028	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2029	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2030	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2031	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2032	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2033	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2034	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2035	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2036	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2037	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
2038	3,766.01	3,186.87	25,938.13	2,192.23	3,166.85	1,883.16	1,516.39	672.38	6,052.23	48,374.24
<b>TOTAL</b>										967,484.79

**TABLE 9.13.5.1. Derivation of Incremental Economic Cost for Community Infrastructure Projects, CHARMP 2 Scaling Up**

Year	Capital Investment PHP (in '000)							
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled 10%	Unskilled 20%	Equipment	Supplies 49%	Other	21%		
2017	2,350.00	2,820.00	-	9,592.00	-	4,935.00	-	19,697.00
2018	900.00	1,080.00	-	3,673.53	-	1,890.00	-	7,543.53
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	28,454.25

**TABLE 9.13.5.2. Derivation of Incremental Economic Cost for Community Infrastructure Projects, CHARMP 2 Scaling Up**

Year	Working Capita (MOOE) PHP (in '000)						Sub-Total	TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision			Other Cost
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	-	-	-	-	-	-	-	19,697.00	
2018	-	-	-	-	-	-	-	7,543.53	
2019	-	-	-	-	-	-	-	-	
2020	-	-	-	-	-	-	-	-	
2021	-	-	-	-	-	-	-	-	
2022	-	-	-	-	-	-	-	-	
2023	-	-	-	-	-	-	-	-	
2024	-	-	-	-	-	-	-	-	
2025	-	-	-	-	-	-	-	-	
2026	-	-	-	-	-	-	-	-	
2027	-	-	-	-	-	-	-	-	
2028	-	-	-	-	-	-	-	-	
TOTAL	-	-	-	-	-	-	-	27,240.53	

**TABLE 9.13.6.1. Derivation of Incremental Economic Cost for Domestic Water Supply, CHARMP 2 Scaling Up**

Capital Investment PHP (in '000)								
Year	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	1,336.00	1,603.20	-	5,453.15	-	2,805.60	-	11,197.95
2018	517.00	620.40	-	2,110.24	-	1,085.70	-	4,333.34
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	15,531.29

**TABLE 9.13.6.2. Derivation of Incremental Economic Cost for Domestic Water Supply, CHARMP 2 Scaling Up**

Year	Working Capita (MOOE) PHP (in '000)								TOTAL COST
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total	
	Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			
2017	-	-	-	-	-	-	-	-	11,197.95
2018	50.29	60.35	-	205.27	-	105.61	-	421.52	4,754.86
2019	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2020	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2021	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2022	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2023	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2024	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2025	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2026	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2027	155.31	186.38	-	633.94	-	326.16	-	1,301.79	1,301.79
2028	105.02	126.03	-	428.67	-	220.55	-	880.27	880.27
	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	-	28,549.15

**TABLE 9.13.7. Derivation of Incremental Economic Benefit for All Domestic Water Supply projects, CHARMP 2 Scale Up**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)	
	Annual Benefits	Total Benefits
(A)	(B)	(C)
2017	-	-
2018	3,010.98	3,022.55
2019	5,477.46	5,504.32
2020	5,477.46	5,514.89
2021	5,477.46	5,525.48
2022	5,477.46	5,536.09
2023	5,477.46	5,546.72
2024	5,477.46	5,557.37
2025	5,477.46	5,568.04
2026	5,477.46	5,578.73
2027	5,477.46	5,589.44
2028	2,466.49	2,519.08
<b>TOTAL</b>		<b>52,443.16</b>

**TABLE 9.13.8.1. Derivation of Incremental Economic Cost for All Farm-to-Market Road Projects, CHARMP 2 Additional Financing**

Year	Capital Investment PHP (in '000)							Sub-Total
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	
	Skilled	Unskilled	Equipment	Supplies	Other			
	10%	20%		49%		21%		
2017	12,492.50	14,991.00	-	50,990.64	-	26,234.25	-	104,708.39
2018	5,350.00	6,420.00	-	21,837.10	-	11,235.00	-	44,842.10
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-	-
2031	-	-	-	-	-	-	-	-
2032	-	-	-	-	-	-	-	-
2033	-	-	-	-	-	-	-	-
2034	-	-	-	-	-	-	-	-
2035	-	-	-	-	-	-	-	-
2036	-	-	-	-	-	-	-	-
2037	-	-	-	-	-	-	-	-
2038	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	149,550.48

**TABLE 9.13.8.2. Derivation of Incremental Economic Cost for All Farm-to-Market Road Projects, CHARMP 2 Additional Financing**

Year	Working Capita (MOOE) PHP (in '000)						Depreciation Cost	TOTAL COST		
	Labor Cost		Cost of Materials			Mgt and Supervision			Other Cost	Sub-Total
	Skilled	Unskilled	Equipment	Supplies	Other					
	10%	20%		49%		21%				
2017	-	-	-	-	-	-	-	-	-	104,708.39
2018	411.54	493.85	-	1,679.79	-	864.24	-	3,449.42	-	48,291.51
2019	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2020	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2021	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2022	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	5,144.27	30,214.01
2023	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	32,243.35	57,313.10
2024	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2025	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2026	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2027	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	5,144.27	30,214.01
2028	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	32,243.35	57,313.10
2029	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2030	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2031	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2032	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	5,144.27	30,214.01
2033	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	32,243.35	57,313.10
2034	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2035	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2036	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	-	25,069.75
2037	2,991.01	3,589.21	-	12,208.40	-	6,281.12	-	25,069.75	5,144.27	30,214.01
2038	2,579.47	3,095.36	-	10,528.62	-	5,416.88	-	21,620.33	32,243.35	53,863.68
TOTAL	-	-	-	-	-	-	-	-	-	800,495.88

**TABLE 9.13.9. Derivation of Incremental Economic Benefits for All Farm-to-Market Road Projects, CHARMP 2 Scale Up**

YEAR	ECONOMIC INCREMENTAL BENEFITS		
	Freight Benefits/Year	Passenger Benefits/Year	Total Benefits
	(A)	(B)	C=(A+B)
2017	0	0	0
2018	0	0	0
2019	37084.03774	60128.06664	97212.10438
2020	37084.03774	60146.87832	97230.91606
2021	37084.03774	60166.18558	97250.22332
2022	37084.03774	60186.00185	97270.03959
2023	37084.03774	60206.34125	97290.37899
2024	37084.03774	60227.21832	97311.25606
2025	37084.03774	60248.64803	97332.68577
2026	37084.03774	60270.64582	97354.68356
2027	37084.03774	60293.22762	97377.26536
2028	37084.03774	60316.40982	97400.44756
2029	37084.03774	60340.20934	97424.24708
2030	37084.03774	60364.64361	97448.68135
2031	37084.03774	60389.73062	97473.76836
2032	37084.03774	60415.48891	97499.52665
2033	37084.03774	60441.93762	97525.97536
2034	37084.03774	60469.09649	97553.13423
2035	37084.03774	60496.98588	97581.02362
2036	37084.03774	60525.62682	97609.66456
2037	37084.03774	60555.04101	97639.07875
2038	37084.03774	60585.25085	97669.28858
			1,948,454.39

**TABLE 9.13.10.1. Derivation of Incremental Economic Cost for Footpath and Footbridge Projects, CHARMP 2 Additional Financing**

Year	Capital Investment PHP (in '000)							
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total
	Skilled 10%	Unskilled 20%	Equipment	Supplies 49%	Other	21%		
2017	3,991.00	4,789.20	-	16,290.06	-	8,381.10	-	33,451.36
2018	2,330.00	2,796.00	-	9,510.36	-	4,893.00	-	19,529.36
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	52,980.73

**TABLE 9.13.10.2. Derivation of Incremental Economic Cost for Footpath and Footbridge Projects, CHARMP 2 Additional Financing**

Year	Working Capita (MOOE) PHP (in '000)						Sub-Total	TOTAL COST	
	Labor Cost		Cost of Materials			Mgt and Supervision			Other Cost
	Skilled 10%	Unskilled 20%	Equipment	Supplies 49%	Other	21%			
2017	-	-	-	-	-	-	-	33,451.36	
2018	69.40	83.28	-	283.27	-	145.74	-	581.69	20,111.05
2019	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2020	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2021	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2022	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2023	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2024	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2025	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2026	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2027	529.81	635.77	-	2,162.51	-	1,112.60	-	4,440.69	4,440.69
2028	460.41	552.49	-	1,879.24	-	966.85	-	3,858.99	3,858.99
	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-	-	-	97,387.58

**TABLE 9.13.11. Derivation of Economic Incremental Benefits for All Footpath and Footbridge Projects, CHARMP 2 Scale Up**

ECONOMIC INCREMENTAL BENEFITS PHP (in '000)		
YEAR	Annual Benefits	Total Benefits
(A)	(B)	©
2017	0	-
2018	606.7562438	622.304
2019	10131.99278	10,398.278
2020	10131.99278	10,405.110
2021	10131.99278	10,412.122
2022	10131.99278	10,419.319
2023	10131.99278	10,426.705
2024	10131.99278	10,434.287
2025	10131.99278	10,442.070
2026	10131.99278	10,450.059
2027	10131.99278	10,458.260
2028	9525.236531	9,839.880
2029		
<b>TOTAL</b>		<b>104,308</b>

**TABLE 9.13.12. Derivation of Economic Incremental Benefits for Livelihood Assistance Fund Projects, CHARMP 2 Scale Up**

YEAR	LIVELIHOOD INTEREST GROUPS (LIG) PER PROVINCE						CUMMULATIVE NUMBER OF LIGS	ANNUAL INCREMENTAL BENEFIT PER PHP 500,000 LAF FOR COFFEE ROBUSTA TRADING	ANNUAL INCREMENTAL BENEFIT PER PHP 100,000 LAF FOR COFFEE ROBUSTA TRADING*	ANNUAL INCREMENTAL BENEFIT PER PHP 300,000 LAF FOR ATSUETE TRADING	ANNUAL INCREMENTAL BENEFIT PER PHP 100,000 LAF FOR ATSUETE TRADING*	ANNUAL AGGREGATE INCREMENTAL BENEFITS PHP (in '000)
	ABRA	APAYAO	BENGUET	IFUGAO	KALINGA	MT. PROVINCE						
2017												
2018	15	15	15	15	15	15	90	78,887.52	15,778	51,396.10	17,132	1,481
2019	15	15	15	15	15	15	90	102,553.77	20,511	66,814.93	22,272	1,925
2020	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2021	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2022	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2023	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2024	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2025	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2026	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2027	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2028	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2029	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2030	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2031	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2032	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2033	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2034	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2035	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2036	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073
2037	15	15	15	15	15	15	90	110,442.52	22,089	71,954.54	23,985	2,073

**TABLE 9.13.13. Derivation of Incremental Economic Cost for All Tramline Projects, CHARMP 2 Additional Financing**

Year	Capital Investment PHP (in '000)								Working Capita (MOOE) PHP (in '000)								TOTAL COST
	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total	Labor Cost		Cost of Materials			Mgt and Supervision	Other Cost	Sub-Total	
	Skilled	Unskilled	Equipment	Supplies	Other				Skilled	Unskilled	Equipment	Supplies	Other				
	10%	20%		49%		21%			10%	20%		49%		21%			
2017	400.00	480.00	-	1,632.68	-	840.00	-	3,352.68	-	-	-	-	-	-	-	3,352.68	
2018	800.00	960.00	-	3,265.36	-	1,680.00	-	6,705.36	-	-	-	-	-	-	-	6,705.36	
2019	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2020	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2021	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2022	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2023	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2024	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2025	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2026	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2027	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
2028	-	-	-	-	-	-	-	-	100.58	120.70	-	410.54	-	211.22	-	843.03	
TOTAL	-	-	-	-	-	-	-	10,058.04	-	-	-	-	-	-	-	18,488.39	

**TABLE 9.13.14. Derivation of Economic Incremental Benefits for Tramline Projects, CHARMP 2 Scale Up**

ECONOMIC INCREMENTAL BENEFITS PHP (in '000)		
YEAR	Annual Benefits	Total Benefits
(A)	(B)	©
2017	0	-
2018	0	-
2019	2327.7573	2,388.935
2020	2327.7573	2,390.504
2021	2327.7573	2,392.115
2022	2327.7573	2,393.768
2023	2327.7573	2,395.466
2024	2327.7573	2,397.207
2025	2327.7573	2,398.995
2026	2327.7573	2,400.831
2027	2327.7573	2,402.715
2028	2327.7573	2,404.649
2029		
<b>TOTAL</b>	<b>23,278</b>	<b>23,965</b>

### **C. Sensitivity Analysis**

A sensitivity analysis was also undertaken to assess how varying the assumptions change the economic parameters of the project. This analysis shows that the programme benefits are very robust and the investment in the programme is sound under various adverse conditions. Table 9.14 below provides the summary results of the sensitivity of CHARMP2 Scale-Up on the basic economic parameters. Subjecting the project to 20% decrease in benefit can be absorbed by the project based as the EIRR, BCR and NPV shall satisfy the hurdle rate. The proposed project can likewise afford to absorb a 20% increase in cost and a 2-year delay in project implementation. Scenarios. The viable economic parameters of the project is unattainable only in the worst case scenario where a (i) 20% decrease in project benefits combines with (ii) a 20% increase in cost, and a (iii) 2-year delay in project implementation.

**TABLE 9.14.1.1. CHARMP 2 Scale Up Sensitivity Analysis at 10% Decrease in Benefits**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-	-	-	-	-	-	-
2018	-	-	560.07	2,720.29	-	1,332.84	4,613.20
2019	87,490.89	43,536.82	9,358.45	4,953.89	2,150.04	1,732.69	149,222.7
2020	87,507.82	43,536.82	9,364.60	4,963.40	2,151.45	1,865.97	149,390.0
2021	87,525.20	43,536.82	9,370.91	4,972.93	2,152.90	1,865.97	149,424.7
2022	87,543.04	43,536.82	9,377.39	4,982.48	2,154.39	1,865.97	149,460.0
2023	87,561.34	43,536.82	9,384.03	4,992.04	2,155.92	1,865.97	149,496.1
2024	87,580.13	43,536.82	9,390.86	5,001.63	2,157.49	1,865.97	149,532.8
2025	87,599.42	43,536.82	9,397.86	5,011.23	2,159.10	1,865.97	149,570.3
2026	87,619.22	43,536.82	9,405.05	5,020.85	2,160.75	1,865.97	149,608.6
2027	87,639.54	43,536.82	9,412.43	5,030.49	2,162.44	1,865.97	149,647.7
2028	87,660.40	43,536.82	8,855.89	2,267.17	2,164.18	1,865.97	146,350.4
2029	87,681.82	43,536.82	-	-	-	1,865.97	133,084.6
2030	87,703.81	43,536.82	-	-	-	1,865.97	133,106.6
2031	87,726.39	43,536.82	-	-	-	1,865.97	133,129.1
2032	87,749.57	43,536.82	-	-	-	1,865.97	133,152.3
2033	87,773.38	43,536.82	-	-	-	1,865.97	133,176.1
2034	87,797.82	43,536.82	-	-	-	1,865.97	133,200.6
2035	87,822.92	43,536.82	-	-	-	1,865.97	133,225.7
2036	87,848.70	43,536.82	-	-	-	1,865.97	133,251.4
2037	87,875.17	43,536.82	-	-	-	1,865.97	133,277.9
2038	87,902.36	43,536.82	-	-	-	-	131,439.1
<b>TOTAL</b>	<b>1,753,608.9</b>	<b>870,736.3</b>	<b>93,877.56</b>	<b>49,916.42</b>	<b>21,568.67</b>	<b>36,653.00</b>	<b>2,826,360.9</b>

**TABLE 9.14.1.2. CHARMP 2 Scale Up Sensitivity Analysis at 10% Decrease in Benefits**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							
	CIVIL WORKS							
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX	TOTAL CW
2017	104,708.3	24,726.02	33,451.36	11,197.95	3,352.68	19,697.00	23,656.01	173,477.39
2018	48,291.51	21,361.29	20,111.05	4,754.86	6,705.36	7,543.53	13,052.11	95,715.49
2019	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2020	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2021	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2022	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-	44,525.32
2023	57,313.10	19,247.63	4,440.69	1,301.79	843.03	-	-	83,146.23
2024	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2025	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2026	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2027	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-	44,525.32
2028	57,313.10	19,247.63	3,858.99	880.27	843.03	-	-	82,143.02
2029	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2030	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2031	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2032	30,214.01	7,725.80	-	-	-	-	-	37,939.81
2033	57,313.10	19,247.63	-	-	-	-	-	76,560.72
2034	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2035	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2036	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2037	30,214.01	7,725.80	-	-	-	-	-	37,939.81
2038	53,863.68	19,247.63	-	-	-	-	-	73,111.31
<b>TOTAL</b>	<b>800,495.8</b>	<b>246,690.59</b>	<b>97,387.58</b>	<b>28,549.15</b>	<b>18,488.39</b>	<b>27,240.53</b>	<b>36,708.12</b>	<b>1,182,143.9</b>

**TABLE 9.14.1.3. CHARMP 2 Scale Up Sensitivity Analysis at 10% Decrease in Benefits**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000						TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER							
	LAF	Trainings and	Advisory Services	Equipment &	Recurrent Costs	Total Other Costs		
2017	7,497.00	43 912.43	37,919.53	14,077.70	16,544.92	119 951.58	293 428.97	(293 428.97)
2018	-	41 415.93	27,286.84	-	15,453.28	84 156.05	179 871.54	(175 258.33)
2019	-	-	-	-	-	-	39,381.05	109,841.73
2020	-	-	-	-	-	-	39,381.05	110,009.01
2021	-	-	-	-	-	-	39,381.05	110,043.68
2022	-	-	-	-	-	-	44,525.32	104,934.76
2023	-	-	-	-	-	-	83,146.23	66,349.90
2024	-	-	-	-	-	-	39,381.05	110,151.84
2025	-	-	-	-	-	-	39,381.05	110,189.34
2026	-	-	-	-	-	-	39,381.05	110,227.60
2027	-	-	-	-	-	-	44,525.32	105,122.38
2028	-	-	-	-	-	-	82,143.02	64,207.42
2029	-	-	-	-	-	-	32,795.54	100,289.06
2030	-	-	-	-	-	-	32,795.54	100,311.05
2031	-	-	-	-	-	-	32,795.54	100,333.63
2032	-	-	-	-	-	-	37,939.81	95,212.55
2033	-	-	-	-	-	-	76,560.72	56,615.44
2034	-	-	-	-	-	-	32,795.54	100,405.06
2035	-	-	-	-	-	-	32,795.54	100,430.16
2036	-	-	-	-	-	-	32,795.54	100,455.94
2037	-	-	-	-	-	-	37,939.81	95,338.14
2038	-	-	-	-	-	-	73,111.31	58,327.87
<b>TOTAL</b>	<b>7,497.00</b>	<b>85 328.36</b>	<b>65,206.37</b>	<b>14,077.70</b>	<b>31,998.20</b>	<b>204 107.63</b>	<b>1 386 251.62</b>	<b>1 440 109.28</b>

**TABLE 9.14.2.1. CHARMP 2 Scale Up Sensitivity Analysis at 20% Decrease in Benefits**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-	-	-	-	-	-	-
2018	-	-	497.84	2,418.04	-	1,184.74	4,100.63
2019	77,769.68	38,699.39	8,318.62	4,403.46	1,911.15	1,540.17	132,642.47
2020	77,784.73	38,699.39	8,324.09	4,411.91	1,912.40	1,658.64	132,791.17
2021	77,800.18	38,699.39	8,329.70	4,420.38	1,913.69	1,658.64	132,821.98
2022	77,816.03	38,699.39	8,335.45	4,428.87	1,915.01	1,658.64	132,853.40
2023	77,832.30	38,699.39	8,341.36	4,437.37	1,916.37	1,658.64	132,885.44
2024	77,849.00	38,699.39	8,347.43	4,445.89	1,917.77	1,658.64	132,918.13
2025	77,866.15	38,699.39	8,353.66	4,454.43	1,919.20	1,658.64	132,951.46
2026	77,883.75	38,699.39	8,360.05	4,462.98	1,920.66	1,658.64	132,985.47
2027	77,901.81	38,699.39	8,366.61	4,471.55	1,922.17	1,658.64	133,020.17
2028	77,920.36	38,699.39	7,871.90	2,015.27	1,923.72	1,658.64	130,089.28
2029	77,939.40	38,699.39				1,658.64	118,297.43
2030	77,958.95	38,699.39				1,658.64	118,316.98
2031	77,979.01	38,699.39				1,658.64	118,337.05
2032	77,999.62	38,699.39				1,658.64	118,357.65
2033	78,020.78	38,699.39				1,658.64	118,378.81
2034	78,042.51	38,699.39				1,658.64	118,400.54
2035	78,064.82	38,699.39				1,658.64	118,422.85
2036	78,087.73	38,699.39				1,658.64	118,445.76
2037	78,111.26	38,699.39				1,658.64	118,469.30
2038	78,135.43	38,699.39				-	116,834.82
<b>TOTAL</b>	<b>1,558,763.51</b>	<b>773,987.83</b>	<b>83,446.72</b>	<b>44,370.15</b>	<b>19,172.15</b>	<b>32,580.44</b>	<b>3,140,401.00</b>

**TABLE 9.14.2.2. CHARMP 2 Scale Up Sensitivity Analysis at 20% Decrease in Benefits**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000						
	CIVIL WORKS						
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX
2017	104,708.39	24,726.02	33,451.36	11,197.95	3,352.68	19,697.00	23,656.01
2018	48,291.51	21,361.29	20,111.05	4,754.86	6,705.36	7,543.53	13,052.11
2019	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-
2020	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-
2021	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-
2022	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-
2023	57,313.10	19,247.63	4,440.69	1,301.79	843.03	-	-
2024	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-
2025	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-
2026	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-
2027	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-
2028	57,313.10	19,247.63	3,858.99	880.27	843.03	-	-
2029	25,069.75	7,725.80	-	-	-	-	-
2030	25,069.75	7,725.80	-	-	-	-	-
2031	25,069.75	7,725.80	-	-	-	-	-
2032	30,214.01	7,725.80	-	-	-	-	-
2033	57,313.10	19,247.63	-	-	-	-	-
2034	25,069.75	7,725.80	-	-	-	-	-
2035	25,069.75	7,725.80	-	-	-	-	-
2036	25,069.75	7,725.80	-	-	-	-	-
2037	30,214.01	7,725.80	-	-	-	-	-
2038	53,863.68	19,247.63	-	-	-	-	-
<b>TOTAL</b>	<b>800,495.88</b>	<b>246,690.59</b>	<b>97,387.58</b>	<b>28,549.15</b>	<b>18,488.39</b>	<b>27,240.53</b>	<b>36,708.12</b>

**TABLE 9.14.2.3. CHARMP 2 Scale Up Sensitivity Analysis at 20% Decrease in Benefits**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							TOTAL COST	TOTAL INCREMENTAL BENEFIT
	TOTAL CW	OTHER COSTS					Total Other Costs		
		LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs			
2017	173,477.39	7,497.00	43 912.43	37,919.53	14,077.70	16,544.92	119 951.58	293 428.97	(293 428.97)
2018	95,715.49	-	41 415.93	27,286.84	-	15,453.28	84 156.05	179 871.54	(175 770.91)
2019	39,381.05	-	-	-	-	-	-	39,381.05	93,261.42
2020	39,381.05	-	-	-	-	-	-	39,381.05	93,410.12
2021	39,381.05	-	-	-	-	-	-	39,381.05	93,440.93
2022	44,525.32	-	-	-	-	-	-	44,525.32	88,328.08
2023	83,146.23	-	-	-	-	-	-	83,146.23	49,739.22
2024	39,381.05	-	-	-	-	-	-	39,381.05	93,537.07
2025	39,381.05	-	-	-	-	-	-	39,381.05	93,570.41
2026	39,381.05	-	-	-	-	-	-	39,381.05	93,604.42
2027	44,525.32	-	-	-	-	-	-	44,525.32	88,494.86
2028	82,143.02	-	-	-	-	-	-	82,143.02	47,946.26
2029	32,795.54	-	-	-	-	-	-	32,795.54	85,501.89
2030	32,795.54	-	-	-	-	-	-	32,795.54	85,521.43
2031	32,795.54	-	-	-	-	-	-	32,795.54	85,541.50
2032	37,939.81	-	-	-	-	-	-	37,939.81	80,417.84
2033	76,560.72	-	-	-	-	-	-	76,560.72	41,818.09
2034	32,795.54	-	-	-	-	-	-	32,795.54	85,604.99
2035	32,795.54	-	-	-	-	-	-	32,795.54	85,627.31
2036	32,795.54	-	-	-	-	-	-	32,795.54	85,650.22
2037	37,939.81	-	-	-	-	-	-	37,939.81	80,529.48
2038	73,111.31	-	-	-	-	-	-	73,111.31	43,723.52
<b>TOTAL</b>	<b>1,182,143.99</b>	<b>7,497.00</b>	<b>85 328.36</b>	<b>65,206.37</b>	<b>14,077.70</b>	<b>31,998.20</b>	<b>204 107.63</b>	<b>1 386 251.62</b>	<b>1 126 069.18</b>

**TABLE 9.14.3.1. CHARMP 2 Scale Up Sensitivity Analysis at 10% Increase in Cost**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	-	-	-	-	-	-	-
2018	-	-	622.30	3,022.55	-	1,480.93	5,125.78
2019	97,212.10	48,374.24	10,398.28	5,504.32	2,388.93	1,925.21	165,803.09
2020	97,230.92	48,374.24	10,405.11	5,514.89	2,390.50	2,073.30	165,988.96
2021	97,250.22	48,374.24	10,412.12	5,525.48	2,392.12	2,073.30	166,027.48
2022	97,270.04	48,374.24	10,419.32	5,536.09	2,393.77	2,073.30	166,066.75
2023	97,290.38	48,374.24	10,426.71	5,546.72	2,395.47	2,073.30	166,106.81
2024	97,311.26	48,374.24	10,434.29	5,557.37	2,397.21	2,073.30	166,147.66
2025	97,332.69	48,374.24	10,442.07	5,568.04	2,399.00	2,073.30	166,189.33
2026	97,354.68	48,374.24	10,450.06	5,578.73	2,400.83	2,073.30	166,231.84
2027	97,377.27	48,374.24	10,458.26	5,589.44	2,402.72	2,073.30	166,275.22
2028	97,400.45	48,374.24	9,839.88	2,519.08	2,404.65	2,073.30	162,611.60
2029	97,424.25	48,374.24	-	-	-	2,073.30	147,871.79
2030	97,448.68	48,374.24	-	-	-	2,073.30	147,896.22
2031	97,473.77	48,374.24	-	-	-	2,073.30	147,921.31
2032	97,499.53	48,374.24	-	-	-	2,073.30	147,947.07
2033	97,525.98	48,374.24	-	-	-	2,073.30	147,973.52
2034	97,553.13	48,374.24	-	-	-	2,073.30	148,000.67
2035	97,581.02	48,374.24	-	-	-	2,073.30	148,028.56
2036	97,609.66	48,374.24	-	-	-	2,073.30	148,057.20
2037	97,639.08	48,374.24	-	-	-	2,073.30	148,086.62
2038	97,669.29	48,374.24	-	-	-	-	146,043.53
<b>TOTAL</b>	<b>1,948,454.39</b>	<b>967,484.79</b>	<b>104,308.40</b>	<b>55,462.69</b>	<b>23,965.19</b>	<b>40,725.55</b>	<b>3,140,401.00</b>

**TABLE 9.14.3.2. CHARMP 2 Scale Up Sensitivity Analysis at 10% Increase in Cost**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							
	CIVIL WORKS							
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX	TOTAL CW
2017	115,179.23	27,198.62	36,796.50	12,317.75	3,687.95	21,666.69	23,656.01	193,190.73
2018	53,120.66	23,497.42	22,122.16	5,230.34	7,375.90	8,297.88	13,052.11	106,592.25
2019	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2020	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2021	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2022	33,235.42	8,498.38	4,884.75	1,431.96	927.34	-	-	48,977.85
2023	63,044.41	21,172.39	4,884.75	1,431.96	927.34	-	-	91,460.85
2024	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2025	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2026	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2027	33,235.42	8,498.38	4,884.75	1,431.96	927.34	-	-	48,977.85
2028	63,044.41	21,172.39	4,244.89	968.30	927.34	-	-	90,357.32
2029	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2030	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2031	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2032	33,235.42	8,498.38	-	-	-	-	-	41,733.79
2033	63,044.41	21,172.39	-	-	-	-	-	84,216.80
2034	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2035	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2036	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2037	33,235.42	8,498.38	-	-	-	-	-	41,733.79
2038	59,250.05	21,172.39	-	-	-	-	-	80,422.44
<b>TOTAL</b>	<b>880,545.46</b>	<b>271,359.65</b>	<b>107,126.34</b>	<b>31,404.07</b>	<b>20,337.23</b>	<b>29,964.58</b>	<b>36,708.12</b>	<b>1,304,029.20</b>

**TABLE 9.14.3.3. CHARMP 2 Scale Up Sensitivity Analysis at 10% Increase in Cost**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000						TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER COSTS							
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs	Total Other Costs		
2017	8,246.70	43,615.88	48,303.67	15,485.47	18,199.42	131,946.74	325,137.47	(325,137.47)
2018	-	35,639.49	45,557.52	-	16,998.61	92,571.65	199,163.90	(194,038.12)
2019	-	-	-	-	-	-	43,319.16	122,483.93
2020	-	-	-	-	-	-	43,319.16	122,669.80
2021	-	-	-	-	-	-	43,319.16	122,708.32
2022	-	-	-	-	-	-	48,977.85	117,088.90
2023	-	-	-	-	-	-	91,460.85	74,645.95
2024	-	-	-	-	-	-	43,319.16	122,828.50
2025	-	-	-	-	-	-	43,319.16	122,870.17
2026	-	-	-	-	-	-	43,319.16	122,912.68
2027	-	-	-	-	-	-	48,977.85	117,297.37
2028	-	-	-	-	-	-	90,357.32	72,254.28
2029	-	-	-	-	-	-	36,075.10	111,796.69
2030	-	-	-	-	-	-	36,075.10	111,821.12
2031	-	-	-	-	-	-	36,075.10	111,846.21
2032	-	-	-	-	-	-	41,733.79	106,213.27
2033	-	-	-	-	-	-	84,216.80	63,756.72
2034	-	-	-	-	-	-	36,075.10	111,925.58
2035	-	-	-	-	-	-	36,075.10	111,953.46
2036	-	-	-	-	-	-	36,075.10	111,982.11
2037	-	-	-	-	-	-	41,733.79	106,352.82
2038	-	-	-	-	-	-	80,422.44	65,621.09
<b>TOTAL</b>	<b>8,246.70</b>	<b>93,861.19</b>	<b>71,727.01</b>	<b>15,485.47</b>	<b>35,198.02</b>	<b>224,518.39</b>	<b>1,528,547.60</b>	<b>1,611,853.40</b>

**TABLE 9.14.4.1. CHARMP 2 Scale Up Sensitivity Analysis at 20% Increase in Cost**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						Total Benefits
	FMR	CIS	FP/FB	DWS	TL	LAF	
2017	-	-	-	-	-	-	-
2018	-	-	622.30	3,022.55	-	1,480.93	5,125.78
2019	97,212.10	48,374.24	10,398.28	5,504.32	2,388.93	1,925.21	165,803.09
2020	97,230.92	48,374.24	10,405.11	5,514.89	2,390.50	2,073.30	165,988.96
2021	97,250.22	48,374.24	10,412.12	5,525.48	2,392.12	2,073.30	166,027.48
2022	97,270.04	48,374.24	10,419.32	5,536.09	2,393.77	2,073.30	166,066.75
2023	97,290.38	48,374.24	10,426.71	5,546.72	2,395.47	2,073.30	166,106.81
2024	97,311.26	48,374.24	10,434.29	5,557.37	2,397.21	2,073.30	166,147.66
2025	97,332.69	48,374.24	10,442.07	5,568.04	2,399.00	2,073.30	166,189.33
2026	97,354.68	48,374.24	10,450.06	5,578.73	2,400.83	2,073.30	166,231.84
2027	97,377.27	48,374.24	10,458.26	5,589.44	2,402.72	2,073.30	166,275.22
2028	97,400.45	48,374.24	9,839.88	2,519.08	2,404.65	2,073.30	162,611.60
2029	97,424.25	48,374.24	-	-	-	2,073.30	147,871.79
2030	97,448.68	48,374.24	-	-	-	2,073.30	147,896.22
2031	97,473.77	48,374.24	-	-	-	2,073.30	147,921.31
2032	97,499.53	48,374.24	-	-	-	2,073.30	147,947.07
2033	97,525.98	48,374.24	-	-	-	2,073.30	147,973.52
2034	97,553.13	48,374.24	-	-	-	2,073.30	148,000.67
2035	97,581.02	48,374.24	-	-	-	2,073.30	148,028.56
2036	97,609.66	48,374.24	-	-	-	2,073.30	148,057.20
2037	97,639.08	48,374.24	-	-	-	2,073.30	148,086.62
2038	97,669.29	48,374.24	-	-	-	-	146,043.53
TOTAL	1,948,454.39	967,484.79	104,308.40	55,462.69	23,965.19	40,725.55	3,140,401.00

**TABLE 9.14.4.2. CHARMP 2 Scale Up Sensitivity Analysis at 20% Increase in Cost**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							
	CIVIL WORKS							
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX	TOTAL CW
2017	125,650.06	29,671.22	40,141.64	13,437.54	4,023.22	23,636.39	23,656.01	212,904.06
2018	57,949.81	25,633.55	24,133.27	5,705.83	8,046.43	9,052.24	13,052.11	117,469.01
2019	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2020	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2021	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2022	36,256.82	9,270.96	5,328.82	1,562.14	1,011.64	-	-	53,430.38
2023	68,775.72	23,097.15	5,328.82	1,562.14	1,011.64	-	-	99,775.48
2024	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2025	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2026	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2027	36,256.82	9,270.96	5,328.82	1,562.14	1,011.64	-	-	53,430.38
2028	68,775.72	23,097.15	4,630.79	1,056.32	1,011.64	-	-	98,571.62
2029	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2030	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2031	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2032	36,256.82	9,270.96	-	-	-	-	-	45,527.78
2033	68,775.72	23,097.15	-	-	-	-	-	91,872.87
2034	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2035	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2036	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2037	36,256.82	9,270.96	-	-	-	-	-	45,527.78
2038	64,636.42	23,097.15	-	-	-	-	-	87,733.57
TOTAL	960,595.05	296,028.71	116,865.10	34,258.98	22,186.06	32,688.63	36,708.12	1,425,914.41

**TABLE 9.14.4.3. CHARMP 2 Scale Up Sensitivity Analysis at 20% Increase in Cost**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000						TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER COSTS							
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs	Total Other Costs		
2017	8,996.40	52 694.91	45,503.44	16,893.24	19,853.91	143 941.90	356 845.96	(356 845.96)
2018	-	49 699.11	32,744.21	-	18,543.93	100 987.26	218 456.27	(213 330.48)
2019	-	-	-	-	-	-	47,257.26	118,545.82
2020	-	-	-	-	-	-	47,257.26	118,731.70
2021	-	-	-	-	-	-	47,257.26	118,770.22
2022	-	-	-	-	-	-	53,430.38	112,636.37
2023	-	-	-	-	-	-	99,775.48	66,331.33
2024	-	-	-	-	-	-	47,257.26	118,890.40
2025	-	-	-	-	-	-	47,257.26	118,932.07
2026	-	-	-	-	-	-	47,257.26	118,974.58
2027	-	-	-	-	-	-	53,430.38	112,844.83
2028	-	-	-	-	-	-	98,571.62	64,039.98
2029	-	-	-	-	-	-	39,354.65	108,517.13
2030	-	-	-	-	-	-	39,354.65	108,541.57
2031	-	-	-	-	-	-	39,354.65	108,566.65
2032	-	-	-	-	-	-	45,527.78	102,419.29
2033	-	-	-	-	-	-	91,872.87	56,100.65
2034	-	-	-	-	-	-	39,354.65	108,646.02
2035	-	-	-	-	-	-	39,354.65	108,673.91
2036	-	-	-	-	-	-	39,354.65	108,702.55
2037	-	-	-	-	-	-	45,527.78	102,558.84
2038	-	-	-	-	-	-	87,733.57	58,309.96
<b>TOTAL</b>	<b>8,996.40</b>	<b>102 394.03</b>	<b>78 247.65</b>	<b>16 893.24</b>	<b>38 397.84</b>	<b>244 929.16</b>	<b>1 670 843.57</b>	<b>1 469 557.43</b>

**TABLE 9.14.5.1. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						Total Benefits
	FMR	CIS	FP/FB	DWS	TL	LAF	
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	-	-	-	-	-	-	0
2020	-	-	622.30	3,022.55	-	1,480.93	5125.783012
2021	97,212.10	48,374.24	10,398.28	5,504.32	2,388.93	1,925.21	165803.0851
2022	97,230.92	48,374.24	10,405.11	5,514.89	2,390.50	2,073.30	165988.9595
2023	97,250.22	48,374.24	10,412.12	5,525.48	2,392.12	2,073.30	166027.4781
2024	97,270.04	48,374.24	10,419.32	5,536.09	2,393.77	2,073.30	166066.7534
2025	97,290.38	48,374.24	10,426.71	5,546.72	2,395.47	2,073.30	166106.8059
2026	97,311.26	48,374.24	10,434.29	5,557.37	2,397.21	2,073.30	166147.6565
2027	97,332.69	48,374.24	10,442.07	5,568.04	2,399.00	2,073.30	166189.3271
2028	97,354.68	48,374.24	10,450.06	5,578.73	2,400.83	2,073.30	166231.8399
2029	97,377.27	48,374.24	10,458.26	5,589.44	2,402.72	2,073.30	166275.2181
2030	97,400.45	48,374.24	9,839.88	2,519.08	2,404.65	2,073.30	162611.5999
2031	97,424.25	48,374.24	-	-	-	2,073.30	147871.7873
2032	97,448.68	48,374.24	-	-	-	2,073.30	147896.2216
2033	97,473.77	48,374.24	-	-	-	2,073.30	147921.3086
2034	97,499.53	48,374.24	-	-	-	2,073.30	147947.0669
2035	97,525.98	48,374.24	-	-	-	2,073.30	147973.5156
2036	97,553.13	48,374.24	-	-	-	2,073.30	148000.6745
2037	97,581.02	48,374.24	-	-	-	2,073.30	148028.5638
2038	97,609.66	48,374.24	-	-	-	2,073.30	148057.2048
<b>TOTAL</b>	<b>1,753,146.02</b>	<b>870,736.31</b>	<b>104,308.40</b>	<b>55,462.69</b>	<b>23,965.19</b>	<b>38,652.25</b>	<b>2,846,270.85</b>

**TABLE 9.14.5.2. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							
	CIVIL WORKS							
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX	TOTAL CW
2017	0	0	0	0	0	0	0	-
2018	0	0	0	0	0	0	0	-
2019	104,708.39	24,726.02	33,451.36	11,197.95	3,352.68	19,697.00	23,656.01	173,477.39
2020	48,291.51	21,361.29	20,111.05	4,754.86	6,705.36	7,543.53	13,052.11	95,715.49
2021	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2022	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2023	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2024	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-	44,525.32
2025	57,313.10	19,247.63	4,440.69	1,301.79	843.03	-	-	83,146.23
2026	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2027	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2028	25,069.75	7,725.80	4,440.69	1,301.79	843.03	-	-	39,381.05
2029	30,214.01	7,725.80	4,440.69	1,301.79	843.03	-	-	44,525.32
2030	57,313.10	19,247.63	3,858.99	880.27	843.03	-	-	82,143.02
2031	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2032	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2033	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2034	30,214.01	7,725.80	-	-	-	-	-	37,939.81
2035	57,313.10	19,247.63	-	-	-	-	-	76,560.72
2036	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2037	25,069.75	7,725.80	-	-	-	-	-	32,795.54
2038	25,069.75	7,725.80	-	-	-	-	-	32,795.54
<b>TOTAL</b>	<b>716,418.18</b>	<b>219,717.17</b>	<b>97,387.58</b>	<b>28,549.15</b>	<b>18,488.39</b>	<b>27,240.53</b>	<b>36,708.12</b>	<b>1,071,092.87</b>

**TABLE 9.14.5.3. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000						TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER COSTS							
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs	Total Other Costs		
2017	0	0	0	0	0	0	-	-
2018	0	0	0	0	0	0	-	-
2019	7,497.00	43 912.43	37,919.53	14,077.70	16,544.92	119,951.58	293 428.97	(293 428.97)
2020	-	41 415.93	27,286.84	-	15,453.28	84,156.05	179 871.54	(174 745.75)
2021	-	-	-	-	-	-	39,381.05	126,422.03
2022	-	-	-	-	-	-	39,381.05	126,607.91
2023	-	-	-	-	-	-	39,381.05	126,646.43
2024	-	-	-	-	-	-	44,525.32	121,541.43
2025	-	-	-	-	-	-	83,146.23	82,960.58
2026	-	-	-	-	-	-	39,381.05	126,766.61
2027	-	-	-	-	-	-	39,381.05	126,808.28
2028	-	-	-	-	-	-	39,381.05	126,850.79
2029	-	-	-	-	-	-	44,525.32	121,749.90
2030	-	-	-	-	-	-	82,143.02	80,468.58
2031	-	-	-	-	-	-	32,795.54	115,076.24
2032	-	-	-	-	-	-	32,795.54	115,100.68
2033	-	-	-	-	-	-	32,795.54	115,125.76
2034	-	-	-	-	-	-	37,939.81	110,007.25
2035	-	-	-	-	-	-	76,560.72	71,412.79
2036	-	-	-	-	-	-	32,795.54	115,205.13
2037	-	-	-	-	-	-	32,795.54	115,233.02
2038	-	-	-	-	-	-	32,795.54	115,261.66
<b>TOTAL</b>	<b>7,497.00</b>	<b>85 328.36</b>	<b>65 206.37</b>	<b>14 077.70</b>	<b>31 998.20</b>	<b>204 107.63</b>	<b>1 275 200.50</b>	<b>1 571 070.35</b>

**TABLE 9.14.6.1. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay, 10% Increase in Cost and 10% Decrease in Benefit**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	-	-	-	-	-	-	0
2020	-	-	560.07	2,720.29	-	1,332.84	4613.204711
2021	87,490.89	43,536.82	9,358.45	4,953.89	2,150.04	1,732.69	149222.7766
2022	87,507.82	43,536.82	9,364.60	4,963.40	2,151.45	1,865.97	149390.0635
2023	87,525.20	43,536.82	9,370.91	4,972.93	2,152.90	1,865.97	149424.7303
2024	87,543.04	43,536.82	9,377.39	4,982.48	2,154.39	1,865.97	149460.0781
2025	87,561.34	43,536.82	9,384.03	4,992.04	2,155.92	1,865.97	149496.1253
2026	87,580.13	43,536.82	9,390.86	5,001.63	2,157.49	1,865.97	149532.8909
2027	87,599.42	43,536.82	9,397.86	5,011.23	2,159.10	1,865.97	149570.3944
2028	87,619.22	43,536.82	9,405.05	5,020.85	2,160.75	1,865.97	149608.6559
2029	87,639.54	43,536.82	9,412.43	5,030.49	2,162.44	1,865.97	149647.6963
2030	87,660.40	43,536.82	8,855.89	2,267.17	2,164.18	1,865.97	146350.4399
2031	87,681.82	43,536.82	-	-	-	1,865.97	133084.6086
2032	87,703.81	43,536.82	-	-	-	1,865.97	133106.5994
2033	87,726.39	43,536.82	-	-	-	1,865.97	133129.1777
2034	87,749.57	43,536.82	-	-	-	1,865.97	133152.3602
2035	87,773.38	43,536.82	-	-	-	1,865.97	133176.164
2036	87,797.82	43,536.82	-	-	-	1,865.97	133200.607
2037	87,822.92	43,536.82	-	-	-	1,865.97	133225.7075
2038	87,848.70	43,536.82	-	-	-	1,865.97	133251.4843
<b>TOTAL</b>	<b>1,577,831.42</b>	<b>783,662.68</b>	<b>93,877.56</b>	<b>49,916.42</b>	<b>21,568.67</b>	<b>34,787.03</b>	<b>2,561,643.76</b>

**TABLE 9.14.6.2. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay, 10% Increase in Cost and 10% Decrease in Benefit**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000							
	CIVIL WORKS							
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX	TOTAL CW
2017	0	0	0	0	0	0	0	-
2018	0	0	0	0	0	0	0	-
2019	115,179.23	27,198.62	36,796.50	12,317.75	3,687.95	21,666.69	23,656.01	193,190.73
2020	53,120.66	23,497.42	22,122.16	5,230.34	7,375.90	8,297.88	13,052.11	106,592.25
2021	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2022	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2023	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2024	33,235.42	8,498.38	4,884.75	1,431.96	927.34	-	-	48,977.85
2025	63,044.41	21,172.39	4,884.75	1,431.96	927.34	-	-	91,460.85
2026	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2027	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2028	27,576.72	8,498.38	4,884.75	1,431.96	927.34	-	-	43,319.16
2029	33,235.42	8,498.38	4,884.75	1,431.96	927.34	-	-	48,977.85
2030	63,044.41	21,172.39	4,244.89	968.30	927.34	-	-	90,357.32
2031	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2032	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2033	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2034	33,235.42	8,498.38	-	-	-	-	-	41,733.79
2035	63,044.41	21,172.39	-	-	-	-	-	84,216.80
2036	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2037	27,576.72	8,498.38	-	-	-	-	-	36,075.10
2038	27,576.72	8,498.38	-	-	-	-	-	36,075.10
<b>TOTAL</b>	<b>788,060.00</b>	<b>241,688.88</b>	<b>107,126.34</b>	<b>31,404.07</b>	<b>20,337.23</b>	<b>29,964.58</b>	<b>36,708.12</b>	<b>1,181,872.97</b>

**TABLE 9.14.6.3. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay, 10% Increase in Cost and 10% Decrease in Benefit**

YEAR	ECONOMIC INCREMENTAL COSTS PHP in '000						TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER COSTS							
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs	Total Other Costs		
2017	0	0	0	0	0	0	-	-
2018	0	0	0	0	0	0	-	-
2019	8,246.70	43,615.88	48,303.67	15,485.47	18,199.42	131,946.7413	325,137.47	(325,137.47)
2020	-	35,639.49	45,557.52	-	16,998.61	92,571.65219	<b>199,163.90</b>	(194,550.70)
2021	-	-	-	-	-	-	<b>43,319.16</b>	105,903.62
2022	-	-	-	-	-	-	<b>43,319.16</b>	106,070.91
2023	-	-	-	-	-	-	<b>43,319.16</b>	106,105.57
2024	-	-	-	-	-	-	<b>48,977.85</b>	100,482.23
2025	-	-	-	-	-	-	<b>91,460.85</b>	58,035.27
2026	-	-	-	-	-	-	<b>43,319.16</b>	106,213.73
2027	-	-	-	-	-	-	<b>43,319.16</b>	106,251.24
2028	-	-	-	-	-	-	<b>43,319.16</b>	106,289.50
2029	-	-	-	-	-	-	<b>48,977.85</b>	100,669.84
2030	-	-	-	-	-	-	<b>90,357.32</b>	55,993.12
2031	-	-	-	-	-	-	<b>36,075.10</b>	97,009.51
2032	-	-	-	-	-	-	<b>36,075.10</b>	97,031.50
2033	-	-	-	-	-	-	<b>36,075.10</b>	97,054.08
2034	-	-	-	-	-	-	<b>41,733.79</b>	91,418.57
2035	-	-	-	-	-	-	<b>84,216.80</b>	48,959.37
2036	-	-	-	-	-	-	<b>36,075.10</b>	97,125.51
2037	-	-	-	-	-	-	<b>36,075.10</b>	97,150.61
2038	-	-	-	-	-	-	<b>36,075.10</b>	97,176.39
<b>TOTAL</b>	<b>8,246.70</b>	<b>93,861.19</b>	<b>71,727.01</b>	<b>15,485.47</b>	<b>35,198.02</b>	<b>224,518.39</b>	<b>1,406,391.36</b>	<b>1,155,252.40</b>

**TABLE 9.14.7.1. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay, 20% Increase in Cost and 20% Decrease in Benefit**

YEAR	ECONOMIC INCREMENTAL BENEFITS PHP (in '000)						
	FMR	CIS	FP/FB	DWS	TL	LAF	Total Benefits
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	-	-	-	-	-	-	0
2020	-	-	497.84	2,418.04	-	1,184.74	4100.62641
2021	77,769.68	38,699.39	8,318.62	4,403.46	1,911.15	1,540.17	132642.4681
2022	77,784.73	38,699.39	8,324.09	4,411.91	1,912.40	1,658.64	132791.1676
2023	77,800.18	38,699.39	8,329.70	4,420.38	1,913.69	1,658.64	132821.9825
2024	77,816.03	38,699.39	8,335.45	4,428.87	1,915.01	1,658.64	132853.4028
2025	77,832.30	38,699.39	8,341.36	4,437.37	1,916.37	1,658.64	132885.4447
2026	77,849.00	38,699.39	8,347.43	4,445.89	1,917.77	1,658.64	132918.1252
2027	77,866.15	38,699.39	8,353.66	4,454.43	1,919.20	1,658.64	132951.4617
2028	77,883.75	38,699.39	8,360.05	4,462.98	1,920.66	1,658.64	132985.4719
2029	77,901.81	38,699.39	8,366.61	4,471.55	1,922.17	1,658.64	133020.1745
2030	77,920.36	38,699.39	7,871.90	2,015.27	1,923.72	1,658.64	130089.28
2031	77,939.40	38,699.39	-	-	-	1,658.64	118297.4298
2032	77,958.95	38,699.39	-	-	-	1,658.64	118316.9773
2033	77,979.01	38,699.39	-	-	-	1,658.64	118337.0469
2034	77,999.62	38,699.39	-	-	-	1,658.64	118357.6535
2035	78,020.78	38,699.39	-	-	-	1,658.64	118378.8125
2036	78,042.51	38,699.39	-	-	-	1,658.64	118400.5396
2037	78,064.82	38,699.39	-	-	-	1,658.64	118422.8511
2038	78,087.73	38,699.39	-	-	-	1,658.64	118445.7638
<b>TOTAL</b>	<b>1,402,516.82</b>	<b>696,589.05</b>	<b>83,446.72</b>	<b>44,370.15</b>	<b>19,172.15</b>	<b>30,921.80</b>	<b>2,277,016.68</b>

**TABLE 9.14.7.2. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay, 20% Increase in Cost and 20% Decrease in Benefit**

YEAR	ECONOMIC INCREME							
	CIVIL WORKS							TOTAL CW
	FMR	CIS	FP/FB	DWS	TL	CI	LESS 12% TAX	
2017	0	0	0	0	0	0	0	-
2018	0	0	0	0	0	0	0	-
2019	125,650.06	29,671.22	40,141.64	13,437.54	4,023.22	23,636.39	23,656.01	212,904.06
2020	57,949.81	25,633.55	24,133.27	5,705.83	8,046.43	9,052.24	13,052.11	117,469.01
2021	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2022	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2023	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2024	36,256.82	9,270.96	5,328.82	1,562.14	1,011.64	-	-	53,430.38
2025	68,775.72	23,097.15	5,328.82	1,562.14	1,011.64	-	-	99,775.48
2026	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2027	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2028	30,083.69	9,270.96	5,328.82	1,562.14	1,011.64	-	-	47,257.26
2029	36,256.82	9,270.96	5,328.82	1,562.14	1,011.64	-	-	53,430.38
2030	68,775.72	23,097.15	4,630.79	1,056.32	1,011.64	-	-	98,571.62
2031	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2032	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2033	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2034	36,256.82	9,270.96	-	-	-	-	-	45,527.78
2035	68,775.72	23,097.15	-	-	-	-	-	91,872.87
2036	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2037	30,083.69	9,270.96	-	-	-	-	-	39,354.65
2038	30,083.69	9,270.96	-	-	-	-	-	39,354.65
<b>TOTAL</b>	<b>859,701.82</b>	<b>263,660.60</b>	<b>116,865.10</b>	<b>34,258.98</b>	<b>22,186.06</b>	<b>32,688.63</b>	<b>36,708.12</b>	<b>1,292,653.07</b>

**TABLE 9.14.7.3. CHARMP 2 Scale Up Sensitivity Analysis at 2 Years Delay, 20% Increase in Cost and 20% Decrease in Benefit**

YEAR	NTAL COSTS PHP in '000						TOTAL COST	TOTAL INCREMENTAL BENEFIT
	OTHER COSTS					Total Other Costs		
	LAF	Trainings and Studies	Advisory Services	Equipment & Materials	Recurrent Costs			
2017	0	0	0	0	0	0	-	-
2018	0	0	0	0	0	0	-	-
2019	8,996.40	52 694.91	45,503.44	16,893.24	19,853.91	143 941.90	356 845.96	(356 845.96)
2020	-	49 699.11	32,744.21	-	18,543.93	100987.26	218 456.27	(214 355.64)
2021	-	-	-	-	-	-	47,257.26	85,385.21
2022	-	-	-	-	-	-	47,257.26	85,533.91
2023	-	-	-	-	-	-	47,257.26	85,564.72
2024	-	-	-	-	-	-	53,430.38	79,423.02
2025	-	-	-	-	-	-	99,775.48	33,109.97
2026	-	-	-	-	-	-	47,257.26	85,660.86
2027	-	-	-	-	-	-	47,257.26	85,694.20
2028	-	-	-	-	-	-	47,257.26	85,728.21
2029	-	-	-	-	-	-	53,430.38	79,589.79
2030	-	-	-	-	-	-	98,571.62	31,517.66
2031	-	-	-	-	-	-	39,354.65	78,942.78
2032	-	-	-	-	-	-	39,354.65	78,962.32
2033	-	-	-	-	-	-	39,354.65	78,982.39
2034	-	-	-	-	-	-	45,527.78	72,829.88
2035	-	-	-	-	-	-	91,872.87	26,505.95
2036	-	-	-	-	-	-	39,354.65	79,045.89
2037	-	-	-	-	-	-	39,354.65	79,068.20
2038	-	-	-	-	-	-	39,354.65	79,091.11
<b>TOTAL</b>	<b>8,996.40</b>	<b>102 394.03</b>	<b>78 247.65</b>	<b>16 893.24</b>	<b>38 397.84</b>	<b>244 929.16</b>	<b>1 537 582.23</b>	<b>739 434.45</b>

**Summary results of sensitivity analysis for CHARMP 2 scale up**

Item	Indicators							
	NPV (PHP in '000)	SI	NPV (USD in '000)	SI	BCR	SI	IRR	SI
Base case	₱166 156.63		USD 3 692.37		1.27		21.87%	
A. 10 percent decrease in benefit	₱88 950.63	46.47	USD 1 976.68	46.47	1.15	10.00	18.79%	14.10
B. 20 percent decrease in benefit	₱11 744.64	92.93	USD 260.99	92.93	1.02	20.00	15.52%	29.05
C. 10 percent increase in cost	₱102 522.32	38.30	USD 2 278.27	38.30	1.15	9.50	18.93%	13.43
D. 20 percent increase in cost	₱38 888.02	76.60	USD 864.18	76.60	1.05	17.36	16.40%	25.03
E. 2- yr project delay	₱118 665.36	28.58	USD 2 637.01	28.58	1.26	1.01	21.71%	0.75
F. Combination of A, C and E	₱13 682.81	91.77	USD 304.06	91.77	1.03	19.38	15.74%	28.02
G. Combination of B, D and E	(₱91 299.74)	154.95	(USD 2 028.88)	154.95	0.83	34.56	10.17%	53.49

