PC-1

Economic Transformation Initiative, Gilgit-Baltistan

Planning and Development Department, GoGB

ORIGINAL APPROVED COST	**USD $. 120.15 million** **Pak. Rs. 12,315.375 million**
1st REVISED PROPOSED COST	**USD Million. 133.72 million** **Pak. Rs. 27,362.13 million**
ORIGINAL APPROVED GESTATION	**07 Year (84 Months)** **Till September 2022**
1st REVISED PROPOSED GESTATION	**6 Year(s) & 9 Months** **Till June 2029**
APPROVAL FORUM	**ECNEC**

1. Project Title: Economic Transformation Initiative, Gilgit-Baltistan Planning and Development Department, GoGB

2. Location:

Province: Gilgit-Baltistan

District(s): Gilgit, Ghizer, Hunza, Nagar, Astore,Diamer, Skardu , Ghanche, Kharmang and Shigar

3. Authorities responsible for: Economic Transformation Initiative, Gilgit-Baltistan Planning and Development Department, GoGB

3.1 Sponsoring Agency

- Finance Division

3.2 Execution Agency

- Govt. of Gilgit Baltistan

Sr #	Description
1	**Source of Funding:** Non PSDP Funded Project
2	**Proposed Allocation:** 2000.00 million
3	**Scheme No:**
4	**Total Allocation:**
5	**Funds Diverted:**
6	**Balance Funds:**

4. Plan Provision: The Economic Transformation Initiative, Gilgit-Baltistan (ETI-GB) is a development programme of the Government of Gilgit-Baltistan co-funded by the International Fund for Agriculture Development (IFAD) and Italian Agency for Development Cooperation (AICS), USD. With a financial outlay of USD 133.72 million (IFAD USD 67.00 million, AICS 21.12 million, GoGB 23.63 and beneficiary contribution 21.97 million), the programme was initially approved for seven years (2015-2022) at the cost of $120.15 million. However, three-year extension was approved with the expansion of its infrastructure activities to all districts of Gilgit-Baltistan which was earlier restricted for four districts.

Due to significant US dollar appreciation, the project has the provision of the budget which is yet to be utilized. The project has made huge investments in the rural economy of Gilgit Baltistan. The project aims at leveraging the interventions carried out for the last eight years and intends to maximize the targets and outreach. The consolidation and sustainability of these investments are crucial for the success and impactful results of the interventions.

The project therefore requires another 81 months (06 years 09 months) of no-cost extension for consolidation and building on successful interventions to benefit more households in the rural population of Gilgit Baltistan.

Table 1 Programme Financing as per PC-I, Expenditure and Revised Cost

Financier	(A) As per PC1		(B) Actual as per FA	(C) Expenditure (as of April 2024)		(D) Balance/Forecast		(E) Total Revised Program Cost	
	USD	PKR (102.5)	USD	USD	PKR	USD	PKR (278.2436)	USD (=B)	PKR (C+D)
IFAD	67.00	6,867.500	67.00	52.19	8,099.85	14.81	4,120.79	67.00	12,220.64
GoGB	23.63	2,422.075	23.63	9.43	1,420.72	14.2	3,951.06	23.63	5,371.78
AICS	22.98	2,355.450	21.12	-	0.00	21.12	5,876.50	21.12	5,876.50
Subtotal	**113.61**	**11,645.025**	**111.75**	**61.62**	**9,520.57**	**50.13**	**13,948.35**	**111.75**	**23,468.92**
Beneficiary	6.54	670.350	6.54	19.82	3,294.98	2.15	598.22	21.97	3,893.20
Total	**120.15**	**12,315.375**	**118.29**	**81.44**	**12,815.55**	**52.28**	**14,546.58**	**133.72**	**27,362.13**

Note: The beneficiary contribution was projected as USD 6.54 million for the original programme period; however, the actual contribution has been calculated as USD 19.82 million (PKR 3,294.98) as of April 2024. While, for the extension period, the beneficiary contribution has been estimated at $2.15 million (PKR 598.22 million) which include both RoW for FMRs and cash contributions against value chain competitive grants.

The actual amount for the co-financier was estimated at USD 22.98 million, however as per the financing agreement with AICS as co-financier, USD 21.12 million was approved by the financiers.

Since there is a balance of USD 50.13 million with the programme, mainly due to the appreciation of USD. This saving amount is calculated to be **PKR 13,948.35 million** at a conversion rate of **PKR 278.2436.** Resultantly, increasing the overall cost of **PKR 12,315.375 million** calculated for the programme to **PKR 27,362.13 million.** The exchange rate is the State Bank of Pakistan weighted average **exchange rate @ 1USD=PKR 278.2436.**

5. Project Objectives:

Development Goal: "Improve incomes and reduce poverty and malnutrition in rural areas of Gilgit-Baltistan"

Objective: "Increased agriculture incomes and employment for at least 100,000 rural households in Gilgit- Baltistan through sustainable development of agriculture value chain"

Specific objectives are:

I. *Substantial increase of irrigated crop area, enhanced production & productivity of Agri products and improved market linkages through strategic investments in economic infrastructure, 70,000 acres of new irrigated land and 700 km FMR.*
II. *Sustainable and community-driven development approach established that is pro-poor and gender/youth/nutrition-sensitive.*
III. *Encourage Agri-business actors investing in processing through value chain at local level to expand marketing for local food products by developing at least 100 value chain partnerships during the extension period.*
IV. *Government and private agricultural services are sustainably improved, and outreach is expanded through the strengthening of extension and research systems.*
V. *Promotion of supportive policy and regulatory environment (Provincial policies on water, Road Master Plan and O&M, Land Titling and seeds/produce certification promulgated).*

5.1 Project Scope:

Overall Programme

The programme will consist of three mutually reinforcing components i.e. Economic Infrastructure,

Support Services for Value Chain Development and Programme Management. The total cost of the programme is US$ 120.15 million with a programme implementation period of initially seven years since July 2015 and closing on September 2022. However, the programme has been further extended to an additional three years which requires another four years to utilize the resources and need the desired targets. The programme cost will remain the same, USD 120.15 million with required adjustments as aforementioned under the justification. The programme will cover the whole of Gilgit Baltistan region with economic infrastructure initially carried out in the four poorest districts- Ganche, Ghizer, Astore and Diamer which will be extended to all 10 districts with a special focus and priority on leftover districts while the value chain component will cover all 10 districts. Programme Management structure will remain the same however, keeping in view the critical role of regulatory oversight and audit, the Department of Cooperatives, Gilgit-Baltistan as a sub-component under Support Services for Value Chain Development has been proposed.

Table 2 Original and Revised (Proposed) Cost

Project Components	Original Approved Cost			Revised Allocation			
	(PKR)	(USD)	% of total	Revised Allocation $	Expenditure as of April 2024 ($)	Budget Allocation from May 2024 onward ($)	Budget Allocation from May 2024 onward (PKR) Rate Applied 1 $=278.2436 PKR
A. Economic Infrastructure							
1. Irrigation and Land Development (inclusive of the beneficiary share).	4,698.60	45.84	38%	44.23	21.51	15.59	4,337.82
2. Farm to Market Roads	2,117.65	20.66	17%	29.19	11.5	17.69	4,922.13
Sub-Total Economic Infrastructure	**6,816.25**	**66.50**	**55%**	**73.42**	**33.01**	**33.28**	**9,259.95**
2. Support Services/4P-Value Chain							
2.1. Value Chain Fund	2,437.44	23.78	20%	21.23	14.18	7.05	1,961.62
2.2. Social Mobilization	481.75	4.7	4%	2.42	2.42	0	0
2.3. Agriculture Extension	265.48	2.59	2%	3.51	1.91	1.2	333.89
2.4 Agriculture Research	330.05	3.22	3%	1.88	0.86	1.02	283.81
2.5 Land Titling and Record System	265.48	2.59	2%	2.59	0.09	2.5	695.6
Sub-Total Support Service/4P-Value Chain	**3,780.20**	**36.88**	**31%**	**31.63**	**19.46**	**11.77**	**3,274.92**
3. Programme Coordination Unit	1,048.58	10.23	9%	13.24	9.15	5.08	1,413.48
Subtotal	**11,645.03**	**113.61**	**95%**	**118.29**	**61.62**	**50.13**	**13,948.35**
Beneficiary	670.35	6.54	5%	0	19.82	2.15	598.23
Total Project Costs	**12,315.38**	**120.15**	**100%**	**118.29**	**81.44**	**52.28**	**14,546.58**

Table 3 - Year-wise Phasing of Activities

Sub-component	Year 2015-2022	Remaining Target	2022-23 (Oct-June)	2023-24	2024-25	2025-26	2026-27	2027-28	Total
A. Economic Infrastructure									
1.1 Irrigation and Land Development (Acres)	40,000	30,000	1,266	5,630	9,791	9,644	2,595	1,074	70,000
1.2 Farm to Market Road (KM)	385	315	15	40	100	90	50	20	700
Bridges (Meters)	191								
2.1 Value Chain Fund (Grants)	4,336	1,580	0		800	530	150	100	5,916
Value Chain Partnership (4Ps)	13	32			20	5	5	2	45
Processing Facilities	8	70			50	12	8		78
2.2 Social Mobilization		-							-
Village Producer Groups (VPGs)	29	-							29
Village Agriculture Cooperative Societies	162					25	25		212
District Associations		10					10		10
Regional Associations	3	-							3
2.1 Agri Extension		-							-
Private Plant Nurseries	24	-	26						50
Training (p/days)	400		500	500	400	360			2,160
2.4 Agri Research									
Green Houses (Nos)	4		--	--	--	--	--	--	4
Screen Houses (Nos)	7		--	--	--	--	--	--	7
Potato Seed Stores	2		2	3	--	--	--	--	7
Training (P/days)	575		575	1,075	1,000	1,000	--	--	4,225
Potato Seed Prod. (tons)	--		1,000	3,000	5,000	7,000	9,000	--	25,000
2.5 Land Titling									
Provincial Land	1		--	--	--	--	--	--	1

Law									
Land Record Cells	8		--	--	--	--	--	--	8
Land Titles (acres)	2,500		12,500	27,500	27,500		--	--	70,000
3. Programme Management									
Estab. Of PCU									
Estab of RCUs	1		--						1
Baseline Survey	3		--						3
Recruit: of VCTAT	1		--						1
Engagement of SMP	1		--						1

Table 4 : Financier viz disbursement plan:

Sub-Components	Original Allocation			
	IFAD	***GoGB***	***AICS***	***Total***
1.1 Irrigation & Land Development	25.05	11.29	8.49	44.84
1.2. Farm to Market roads	11.90	4.25	3.65	19.80
Subtotal Productive Infrastructure	**36.95**	**15.54**	**12.14**	**64.63**
B. Value Chain Development				
2.1. Value Chain Fund	18.09	1.20	4.49	23.78
2.2. Social Mobilization	2.39	1.41	0.90	4.70
2.3. Agri Extension	1.32	0.78	0.49	2.59
2.4. Agri Research	1.73	0.84	0.65	3.22
2.5. Land Titling & Record system	1.34	0.76	0.50	2.59
Subtotal Value Chain Development	**24.86**	**4.98**	**7.04**	**36.88**
3. Programme Management & Policy Support	5.19	3.11	1.94	10.23
Total	**67.00**	**23.63**	**21.12**	**111.74**

Sub-Components	Allocation from May 2024			
	IFAD	***GoGB***	***AICS***	***Total***
1.1 Irrigation & Land Development	4.60	5.45	5.54	15.59
1.2. Farm to Market roads	3.37	6.13	8.19	17.69
Subtotal Productive Infrastructure	**7.97**	**11.58**	**13.73**	**33.28**
B. Value Chain Development				
2.1. Value Chain Fund	3.84		3.21	7.05
2.2. Social Mobilization	-	-	-	-
2.3. Agri Extension	0.38	0.44	0.38	1.20
2.4. Agri Research	0.57	0.30	0.16	1.02
2.5. Land Titling & Record system	1.28	0.46	0.76	2.50
Subtotal Value Chain Development	**6.07**	**1.20**	**4.51**	**11.78**

3. Programme Management & Policy Support	0.78	1.42	2.88	5.08
Total	**14.81**	**14.20**	**21.12**	**50.13**

Cont'd	**Revised Allocation**			
Sub-Components	***IFAD***	***GoGB***	***AICS***	***Total***
1.1 Irrigation & Land Development	23.64	7.91	5.54	37.09
1.2. Farm to Market roads	13.68	7.31	8.19	29.18
Subtotal Productive Infrastructure	**37.33**	**15.22**	**13.73**	**66.27**
B. Value Chain Development				
2.1. Value Chain Fund	17.09	0.94	3.21	21.23
2.2. Social Mobilization	1.51	0.91	-	2.42
2.3. Agri Extension	1.65	1.09	0.38	3.12
2.4. Agri Research	1.25	0.48	0.16	1.88
2.5. Land Titling & Record system	1.34	0.50	0.76	2.59
Subtotal Value Chain Development	**22.83**	**3.91**	**4.51**	**31.24**
3. Programme Management & Policy Support	6.85	4.50	2.88	14.23
Total	**67.00**	**23.63**	**21.12**	**111.75**

	Allocation from May 2024 (PKR)			
Sub-Components	***IFAD***	***GoGB***	***AICS***	***Total***
1.1 Irrigation & Land Development	1,279.83	1,517.44	1,540.55	4,337.82
1.2. Farm to Market roads	936.81	1,706.26	2,279.06	4,922.13
Subtotal Productive Infrastructure	**2,216.64**	**3,223.70**	**3,819.60**	**9,259.95**
B. Value Chain Development				
2.1. Value Chain Fund	1,067.64	-	893.97	1,961.62
2.2. Social Mobilization	-	-	-	-
2.3. Agri Extension	106.37	121.91	105.60	333.89
2.4. Agri Research	157.36	83.21	43.25	283.81
2.5. Land Titling & Record system	355.75	128.93	210.92	695.60

Subtotal Value Chain Development	**1,687.12**	**334.05**	**1,253.74**	**3,274.91**
3. Programme Management & Policy Support	217.20	394.12	802.18	1,413.49
Total	**4,120.96**	**3,951.86**	**5,875.53**	**13,948.35**

Cont'd	**Proposed Reallocation**			
Sub-Components	***IFAD***	***GoGB***	***AICS***	***Total***
1.1 Irrigation & Land Development	1.41	(3.38)	(2.96)	(4.93)
1.2. Farm to Market roads	-1.78	3.06	4.54	5.82
Subtotal Productive Infrastructure	**-0.37**	**-0.32**	**1.59**	**0.89**
B. Value Chain Development	-	-	-	-
2.1. Vaue Chain Fund	1.00	(0.26)	(1.28)	(0.54)
2.2. Social Mobilization	0.88	(0.50)	(0.90)	(0.53)
2.3. Agri Extension	-0.32	0.31	(0.11)	(0.12)
2.4. Agri Research	0.48	(0.36)	(0.49)	(0.37)
2.5. Land Titling & Record system	-	(0.26)	0.26	0.00
Subtotal Value Chain Development	**2.03**	**-1.07**	**-2.53**	**-1.57**
3. Programme Management & Policy Support	-1.66	1.39	0.95	0.67
Total	**(0.00)**	**-**	**-**	**(0.00)**

USD 278.2436

	%age Allocation from May 2024 (PKR)			
Sub-Components	***IFAD***	***GoGB***	***AICS***	***Total***
1.1 Irrigation & Land Development	29.50%	34.98%	35.51%	100.00 %
1.2. Farm to Market roads	19.03%	34.67%	46.30%	100.00 %
Subtotal Productive Infrastructure	**23.94%**	**34.81%**	**41.25%**	**100.00%**
B. Value Chain Development				
2.1. Value Chain Fund	54.43%	0.00%	45.57%	100.00 %
2.2. Social Mobilization				
2.3. Agri Extension	31.86%	36.51%	31.63%	100.00 %
2.4. Agri Research	55.45%	29.32%	15.24%	100.00 %

2.5. Land Titling & Record system	51.14%	18.54%	30.32%	100.00 %
Subtotal Value Chain Development	**51.52%**	**10.20%**	**38.28%**	**100.00%**
3. Programme Management & Policy Support	15.37%	27.88%	56.75%	100.00 %
Total	**29.54%**	**28.33%**	**42.12%**	**100.00%**

6. Description and Justification of Project

6.1 Brief Description

The Economic Transformation Initiative, Gilgit-Baltistan (ETI-GB) which is a 120 million programme through funding from the International Fund for Agriculture Development (IFAD), the Government of Pakistan & Italian Agency for Development Cooperation (AICS) was approved by ECNEC on April 22, 2015. The Financing Agreement with IFAD was signed for USD 67 million on October 16, 2015. The loan became effective on September 16, 2015, with the project completion date of September 31, 2022. AICS, which was identified and agreed as co-financier at the design stage for financing USD 22.98 million, couldn't join the programme during the initial phase. However, an amount of $ 21.12 million was made available after the signing of an agreement on 18th August 2019. It is worth mentioning that it took almost one year to kick start the programme interventions as physical implementations were initiated in May 2016 when the PCU & RCUs were established after the recruitment of key staff. The programme implementation has been the responsibility of an autonomous PCU established administratively under the Planning and Development Department, GB. The Project Steering Committee (PSC) headed by the Chief Secretary, Gilgit-Baltistan (GB) constituted in accordance with the approved PC-1 to provide strategic direction and oversight to the project.

With an overall goal to "improve incomes and reduce poverty and malnutrition in rural areas of Gilgit-Baltistan" the Programme has been framed on three mutually reinforcing components i.e. Economic Infrastructure, Support Services for Value Chain Development and Programme Management and Policy Support. Specific objectives include: a substantial increase in irrigated crop area as well as enhancing production and productivity; improved connectivity with markets through investments in road infrastructure: sustained and community-driven development approach being established that is pro-poor as well as gender/youth/nutrition sensitive: agri-business actors investing in local processing and value addition to improve acceptability marketing of local products at national levels: promotion of supportive policy and regulatory environment at government level to boost the private sector.

Interventions to achieve these objectives will lead to an increase in agriculture incomes and employment for at least 100,000 rural households in Gilgit-Baltistan by bringing 50,000 acres of land under irrigation. Agriculture productivity and market linkages will be developed through enhanced connectivity by the construction of 400 kms of Farm to Market Road and 200-meter bridges benefitting 50,000 households. Under the overall supervision of the Water Management & Irrigation Department (WM&ID) and the support of social mobilization partners/in-house units, the communities represented by a scheme management committee (SMT) will be implementing/executing the construction work of all infrastructure schemes.

The Value Chain component will be providing inclusive and mutually supportive solutions in the form of technical and financial support production to current challenges in developing value chains around commercial and market-oriented agriculture production and groups. The component is being implemented with the support of multiple partners including Agriculture Extension and Research departments, private/corporate sector and farmers organizations. The Public, Private and Producer Partnership (4P) is the overarching principle to ensure effective and sustainable partnerships between producers (farmers), the public sector (extension, research) and the private sector (local entrepreneurs, down-country-seed companies and corporate clients). This component consists of several interconnected and complementary sub-components including, Value Chain Support Fund and Technical Assistance, Social Mobilization, Agriculture Extension, Agriculture Research and Land Titling System.

The programme is also providing policy support to line departments like WM&ID, Gilgit-Baltistan, C&W Department and the Board of Revenue (BoR) in formulating policies on Water, Road Master Plan and Operation & Maintenance and Land Titling under the Component.3- i.e. Programme Management and Policy Support. The component aims at providing effective Programme coordination, support, monitoring, procurement and technical support capability to all line departments and government for effective management of Programme resources and attainment of its objectives.

6.1.1 Component 1: Economic Infrastructure for Value Chain Development (US$ 66.29 million/50% of base cost). The component is aimed at substantially increasing the current irrigated area in the target districts and providing improved access to markets through upgraded road links.

Sub-component 1.1- Irrigation Development: The sub- component is aimed at developing 70,000 additional acres of irrigation in all ten districts with a special focus on left-over districts during the extension phase.

Per Unit Cost of Proposed Channels: The average cost of identified channels varies widely across districts and with agencies that conducted surveys. The cost of priority channels was updated by the Design Mission based on current scheduled rates. The average cost of PKR 150,000 per acre has been estimated for the construction of channel works.

Implementation approach and modalities: The Programme will follow a participatory approach to irrigation development, building on already tried and tested local models. However, unlike the prevailing practice in community-executed schemes, where over 20% community contribution is expected, the schemes under ETI will not require any community contribution in the shape of labour or materials. ETI will pay the full cost, as approved by PCU, for labour and materials but communities will have to pay back 50% cost of the scheme into a community-based account for future investment primarily core maintenance cost as well as in their own priority social and economic development priorities. In-house Social Mobilization Unit will lead the way in this process.

Implementation: Under the overall management and control of the PCU & RCUs, the sub-component will be implemented through SMTs under the supervision & coordination with WM&ID and ETI-GB teams. ETI has developed internal technical and supervisory capacity to support the implementation and oversight of these schemes. Selection of the scheme for construction and its financing by ETI will follow selection criteria, social and technical feasibility assessments and mobilization/dialogue with the beneficiary communities on the pre-requisite criteria- no conflict on source and command area, distribution as per customary practices among the beneficiary households, no-compensation for Right of Way (ROW). An established right to source of water will be a fundamental requirement, along with the adequacy of the source and non-disputed nature of the land, for the financing of any scheme under the project. The right of way for new irrigation channels will be arranged by the beneficiary community as per prevailing customs and norms. During the land distribution, the communities need to be aware of the required infrastructure on the new land such as access to all plots, secondary and tertiary irrigation networks and space for future social and technical infrastructure such as schools, health and other facilities where feasible. Once a scheme is identified as feasible, the beneficiary community will be organized into a VAC and the VAC will select a Scheme Management Team (SMT). After completion of all procedures and

approvals from the Project Coordination Committee, an agreement will be signed between the community represented by SMT, WM&ID and Agriculture Extension. SMT is selected by the community through consensus and SMT will be responsible for the project for all aspects of the construction agreement.

Payments to VAC/SMT shall be made based on the basis of work done assessed and verified by the WMI&D, certified by the Resident Engineer against the approved design and cost estimate. The payments will be processed to the SMT account jointly operated by SMT and WM&ID and further payments to laborers and local vendors will be from the joint account. Once the project construction is complete, the account will be closed and any savings from the work done amount will be transferred to the VAC account with payback for future O&M, and social and economic investments in the village.

The social mobilization team will mobilize and facilitate the communities in negotiating pre-execution agreements on terms and conditions, mobilization of labour and other resources during construction, land development and post-completion re-payment of 50% construction costs and its further utilization for community social and economic development.

Key steps that shall be followed in the implementation of an ILD are summarized below:

I. *Application/Resolution from the community through concerned DC with his NOC/endorsement that there is no conflict on the land and water source.*
II. *Initial Social Feasibility of the scheme by ETI's social mobilization team to ascertain the facts against the basic selection criteria, number of beneficiary households, overall potential and communities' willingness for organization, establishment of VAC, selection of SMT, land distribution, land development, 50% payback and clearly conveying the criteria and procedures.*
III. *Initial Technical Feasibility- the overall command/arable area, availability of required water at the source, construction difficulties from the availability of resources and cost and timelines.*
IV. *Mass mobilization by ETI's SMC with all communities to describe ETI's terms and conditions.*
V. *Detail Technical Feasibility- survey, design and cost estimation.*
VI. *Review and approvals- from PCC and Technical Sanction Detailed social mobilization-VAC formation, SMT formation, household profiling, participatory wealth ranking by Gender Section, Poverty assessment and identification of poor agreement for payback exemption.*
VII. *Administrative approval from PC / competent forum.*
VIII. *Sharing design and cost estimates with the community and obtaining their consent.*
IX. *Signing of MoA with the community and starting the scheme's physical work.*
X. *Deploying, executing and monitoring staff for execution of the scheme.*
XI. *Land Development and Land Distribution by ETI/SMC*
XII. *After Execution, handing over the schemes to SMT/VAC and WM&ID for future O &M.*
XIII. *Establishment of Payback criteria and collection of paybacks by SMT/VAC.*

6.1.2 Support for Land Development: ETI will also pay PKR 10,000/- per acre to the beneficiaries to enable them to develop the new land quickly for cropping. A formal scheme management/water user association arrangement with appropriate accountability mechanisms

will be established as part of the agreement with the beneficiary community.
Repayment Oversight and Management Mechanism: The mechanism and its utilization will be in accordance with the prescribed procedures reflected in the original PC-1 however, as the beneficiary communities will be organized into a formal VAC so during the programme life, the account will be jointly operated by ETI and VAC while after project the VAC as a legal entity will be responsible to operate and manage the funds.

6.1.3 Sub-component 1.2 - Farm to Market Roads: The FMR component is aimed at improving critical road linkage for the supported value chains for linking the production areas to valley roads and main roads. The sub-component will finance the upgrading of 700 km of shingle compacted roads. In addition, a lump sum provision of 220 meters of bridges would be made. Construction and completion of roads will be aligned with the potential of value chains and its development in various areas and land development under the irrigation component.

Implementation approach and modalities. Under the overall management and control of PCU & RCUs, the implementation approach will be the same for FMRs the execution through communities represented by their SMTs. The Programme has developed internal technical, supervisory capacity at PCU and RCUs required for survey, design and supervision. Once a scheme has been identified as feasible, the social mobilization unit shall engage with the target beneficiaries to form them into a VAC. SMT shall be responsible for all aspects of the construction agreement. Payment to VAC/SMT shall be made based on the work done as certified by the Resident Engineer against the approved design and cost estimate. The account will be jointly operated by the SMT and ETI as in the FMR case, the execution will be made by ETI. Road selection and implementation will follow the following summarized steps. The detailed processes will be elaborated in the infrastructure implementation manual which will be part of the Programme Implementation Manual.

I. *Application/Resolution from the community through concerned DC with his NOC testifying that the communities are willing to spare their land for ROW and no compensation will be claimed.*
II. *Social Feasibility- to ascertain the community demand, willingness on the set criteria and number of population/households benefitted from.*
III. *Value Chain Feasibility (for FMRs in ILDs should be based on the potential crop production, and transport required to the area and for the market to transport the production in coming years while for existing value chain, the production, quantity and frequency of transportation will be kept in consideration). Also, its economic impact will be assessed during the feasibility.*
IV. *Technical Feasibility- the assessment to ascertain the length, alignment, construction timelines, cost etc. Based on the demarcation of the alignment the ROW will be obtained.*
V. *Mass mobilization by ETI's SMC with all community to describe ETI's terms and conditions and household profiling.*
VI. *Detailed survey and design of scheme including cost estimation.*
VII. *Administrative approval from PC / competent forum and technical sanctioning by Infrastructure Specialist.*
VIII. *Sharing design and cost estimate with community and taking their consent.*
IX. *Formation of SMT for executing the scheme.*
X. *Signing of MoA with community and starting the scheme's physical work.*
XI. *Deploying executing and monitoring staff for execution of scheme.*
XII. *Physical and financial monitoring by M&E team of region led by RPCs and DPC.*

XIII. After Execution, handing over the schemes to SMT/VAC for future O & M.
XIV. Handing over the scheme to C&W department.

6.1.4 Component 2: Support Services/ PPPP for Value Chain Development – US$ 31.23 million/23% of the base cost): The component will revolve around commercial and market-oriented production and value addition by organized groups of farmers- village agriculture cooperatives- and other value chain players. The component will focus on all value chains which are promising and contribute to the income of farmers. The component will provide comprehensive and mutually supportive solutions to current challenges in developing value chains for the main cash crops- apricot and potato, cherry, nuts, vegetables and other promising agriculture commodities. In the extension phase, besides high value horticulture crops, VACs will also be supported to exploit their potential in livestock, Dairy and agrotourism to generate additional revenue and income. Additionally, the well-performing VACs will also be supported in establishing processing units for fruit and vegetables, oil extraction etc. The component will be implemented with the support of multiple partners including public sector extension and research institutions, private/corporate sector and farmers organizations. The overarching principle will be to follow the 4-P model involving effective partnerships between producers (VACs), public sector (extension, research) and private sector (local entrepreneurs, down country seed companies and corporate clients). This component consists of a number of interconnected and complementary sub-components.

6.1.5 Sub-Component 1.1 Value Chain Support Fund (VCSF) and Technical Assistance:

The objective of this sub-component is to meet the financing needs of value chain actors including farmers, traders, processors, transporters, exporters and packagers. The fund will operate on "matching-grants basis".

The fund will be managed by an autonomous and representative Fund Management Committee within PCU. Value Chain Lead will be the focal person for this sub-component and Secretary of the Fund Management Committee (FMC). The main criteria for access to funds by farmers will be membership with VAC and Registration with Cooperative Department GB and for private sector /entrepreneurs will be formal registration, documentary proof of engagement in that particular activity and track record, a feasible proposal/business plan that demonstrates that the activity will directly contribute to adding value to any of the local produce or its access to better markets with better returns for farmers and region, and a proof of applicants own contribution/matching investment in the venture. The support needed from extension and research services will also be determined in the plan and any costs on provision of such services (e.g. basic seed for potato seed production) will be part of this financing proposal. VACs will be eligible to access funds on the basis of production/marketing plans endorsed by the FMC and underpinned by established partnerships for supply/sale to private sector entities within the region or outside.

Eligible Partners for VCSF:

It is anticipated that the majority of partnerships would involve registered Village Agriculture Cooperatives (VACs) and any of the following:

An agribusiness or private sector firm or association of firms engaged in the sector.

- A knowledge or service provider (private, public or civil society entity, such University or NGO, public extension and research service providers);
- Smallholder farmer cooperatives or associations.
- A multiple partnership involving more than two of the above, with one partner

designated as the lead.

Partnership development: There are some existing promising farmers groups and producers' associations, marketing associations and aggregation services providers that will be engaged to serve as models and experience generators. In addition, the ETIGB through implementing partner would advertise and call for proposals for additional partnerships. The PCU, through its Fund Management Committee, would examine the solicited proposals and identify eligible proposals. If need be, the VCTAT/implementing partner will assist the proponents in improving their proposals to meet the required standards. Financing of eligible proposals would be appraised by the VCTAT/ implementing partner and placed before Fund Management Committee for approval.

Technical Support to Women, Youth and Small Entrepreneurs: The programme, implementing partners and line agencies would assist those potential partners with lower capacity (such as women or youth, and farmers in more remote areas) in the preparation of their proposals and subsequent implementation once their proposals are approved. Assistance could extend to continued support in monitoring the implementation of the partnerships.

Inclusion of additional promising value chains: After consultation with key stakeholders including line departments, partner organization, relevant non-governmental organization, farmer organizations, VACs, farmers, experts and private sector representatives, additional potential value chains have been recommended to be included under the component for interventions aiming at diversifying the income of rural farmers. The programme will support the proposed intervention in the selected VACs considering the feasibility and potential of the areas.

Stakeholders Recommendations: The key recommendations of the stakeholders for the inclusion of other potential value chains are as under.By the end of the programme, it is expected that up to 100 partnerships would be assisted and up to 60,000 smallholder farmers would directly and indirectly benefit from such matching grant partnerships. About 50 processing facilities would be established through programme support for value addition and reduction in wastage. In addition, VACs will also be supported in Argo & Eco Tourism through the provision of grants to 30 VACs at least. Buckwheat has high potential in upper areas of Gilgit Baltistan. Due to its short duration in can be grown as a second crop, in single-crop zones also. The project should focus provision of improved seeds and the establishment of a processing facility with the Village Agriculture Cooperatives.

- Back Yard Fish Farming has great potential due to low investment cost and minimum requirement of water. The Fisheries Department has successfully implemented a project. This model can be replicated and scale up. This intervention can improve the nutrition of households and generate additional income. This activity should be women-centric and grants should be given to women. The technical support of the Fisheries Department will greatly benefit in successful execution of the intervention.
- Due to seasonal and climatic advantages, apiculture has great potential in the region. Presently 40 MT of honey is produced and there is a huge market demand for local honey. Due to the wide flora spanning for months, good quality honey can be produced. The project should promote honey beekeeping in selected potential areas with VACs.
- Floriculture plays a vital role in enhancing the landscape and livelihood of farmers. The area of Gilgit Baltistan is more feasible to grow many kinds of flowers. The demand of cut flowers at regional and national levels is too high but the production and floriculture practices are too low. The project should promote floriculture to diversify the income

of rural farmers.

- The participants suggested that proposed activities should be VAC focused as it will help to ensure sustainability and provide diversified income generation opportunities for farmers and VACs.

Partial Credit Guarantee Scheme:

The present financing ecosystem is not favorable for the farmers due to highly collateralized products, high mark ups and excessive documentation by the banks. To address the challenges in access to finance faced by VAC members and agro-processing enterprises, ETIGB will introduce a Partial Credit Guarantee Scheme (PCGS) through Banks to ensure the availability of formal financial services. The objective of channeling formal financial services through PCGS is to scale up the successful agricultural undertaken by the project in the last seven years. This scheme will ensure financial inclusion and access to financial services and affordable products, ultimately increasing farmer income, agricultural productivity and production.

The estimated market potential for financing in Gilgit Baltistan is over Rs. 8.0 billion including the 40,000 farmers already registered with the VACs established by ETI-GB. More farmers are also willing to replicate the interventions carried out by the VACs in the first phase, such as Tunnel Farming, Fruit value addition and high value open field vegetable production. The member of VAC also wants to scale up their production capitalizing on the successes of the interventions carried out through the VACs.

The Partial Credit Guarantee Scheme will be launched in partnership with banks selected through a competitive process fulfilling the criteria and offer high profit on deposit and reduced mark up on products. The risk sharing mechanism, markup subsidization and formula will be agreed with the bank based on the offer. The bank will develop tailored products fulfilling the specific needs and considering the repayment capacity of the farmers. The implementing partner will support the bank in launching the scheme, creating awareness about the products, assessment and recovery of default loans.

6.1.6 Sub-Component 2.2 Social Mobilization (Farmers Organization & Institution Building):

As originally designed in PC-I, a social mobilization partner (SMP) was engaged with responsibilities of social mobilization and organization around both Infrastructure (also of FMR in the absence of C&W Department) and Value Chain. SMP was engaged in all districts, except Diamer district, while an in-house unit was established to function as a social mobilization unit for the district Diamer. After MTR, SMP's role remained limited to mobilization for ILD schemes in two priority districts- Ghizer and Ghanche while social mobilization responsibilities were given to the already established in-house unit for the Diamer region. At the same time, the role of VCTAT evolved from a technical assistance team as reflected in PC-I to a service provider with complete responsibilities for the physical implementation of all Value Chain related activities. VCTAT was entrusted with the responsibilities of mobilization, business planning, grant management and execution of business plans in addition to its previous role of technical assistance as reflected in PC-I.

Since the project extension, the contracts of both SMP and service provider as VCTAT have been concluded and the programme is carrying out social mobilization activities for infrastructure development using in-house capacities and resources built during the original phase.

An implementing partner will be engaged to execute the value chain activities in the extension

phase. The implementing partner will be entrusted with the responsibilities of handholding, system development, capacity building, strengthening existing VACs, and carting activities to establishment of new VACs in potential leftover areas. The implementing partner will also launch the Partial Credit Guarantee Scheme (PCGS) in partnership with banks to facilitate the VACs and 4Ps in accessing formal financial services.

6.1.7 Sub-Component 2.3: Agriculture Extension (Department of Agriculture):

The main objective of this sub-component is to provide demand-driven extension services to farmers and VACs including training in pre- and post-harvest practices, soil testing soil improvement, farmer-operated commercially run nurseries for improved fruits and vegetable plants and assistance to Agriculture Research in operating contract-based potato seed multiplication and adaptive trials.

Activities and Responsibilities: The main activities assigned to Extension include:'
Assignment of its district and field staff in support of programme implementation; farmer training, as identified during the business development plan formulation at the village and valley level, adopting a Farmer-to-farmer training approach whereby key farmers will be trained for each group and association who will train the fellow farmers for a particular crop; assist farmer groups in the establishment of commercially run nurseries for the production of quality fruit and vegetable planting materials including access to improved progeny sources and access to Value Chain Development Funds for their capital needs. The department will support communities of ILD in land development, and land use planning and provide extension support in agriculture development on newly developed lands. The soil testing labs will continue to provide soil testing and related soil improvement advice. Support of Agriculture Research in the operation of the seed potato programme. To enable the Extension Directorate to fulfil its responsibilities in an efficient manner, the essential equipment, mobility and incremental staff will be funded by the programme.

Integrated Pest Management

The major focus of this activity is to reduce reliance on and usage of chemical pesticides and adopt ecofriendly and sustainable practices of insect and pest management through an integrated approach. The overuse of chemical pesticides has posed a serious threat to human health and biodiversity.

In the extension phases, the Agriculture Extension Department will initiate activities on Integrated Pest Management (IPM). This includes Training of Trainers (TOT) for VAC members on IPM, the establishment of Farmer Field Scholls (FFS) in VACs and awareness workshops/seminars in schools and colleges.
The IPM labs of the department will be strengthened and upgraded with the provision of necessary equipment, chemicals and bioagents. The support will enable the department to perform advanced pathological tests to identify diseases and provide real-time solutions to the farmers. The IPM staff will also be trained in the biological control of different diseases. Promotional material, training manuals and booklets will also be published for the awareness and information of the farmers.

- *Strengthening and upgrading of IPM labs with provision of necessary inputs/equipment.*
- *Carry out integrated pest and disease management activities in close collaboration with VACs to counter pest and disease issues.*
- *Arrange training programs, awareness sessions/seminars and Farmer Field Schools on IPM.*

Provision of Inputs:
One of the major challenges for VACs and farmers is the availability of quality and reliable input. Due to unknown and unregistered varieties in the market, the production of improved verities of apple, Cherry, and apricots could not be scaled up. The Agriculture Extension department will establish private fruit nurseries in partnership with progressive's farmer to ensure supply of quality planting material. Moreover, the department will also strengthen its own fruit nursery and ensure supply of certified, improved and high yielding plants to farmers and VACs.

6.1.8 Sub-Component 2.4: Agriculture Research, Department of Agriculture: The main aim of this subcomponent is to address the current paucity of quality potato seed in the region through a farmer and contract-centered basic seed production programme. The sub-component will also strengthen local capacity for seed certification and product certification for export.

The main inputs covered under this sub-component include:

- Full rehabilitation (greenhouses, screen houses) of the three tissue culture labs along with capacity enhancement to be able to support the production of 25,000 tons of seed potato in GB
- Procurement of equipment machinery and chemicals and baseline inputs (imported potato basic seed, fertilizer, pesticides) and establishment of a revolving fund for sustainable seed production operation
- Facilitation of agreements between potato seed and table potato producer groups and private sector purchasers in Punjab and elsewhere and supply of basic and certified potato seed as per business plans of the producers
- Establishment of contract growing with farmers for seed multiplication including farmer training
- Construction of eight 50 mt capacity seed stores in key production areas
- 50 adaptive research trials to select optimal areas for the production of seed and table potato Directorate capacity building including equipment, incremental staff salaries and allowances for the seed certification office in Gilgit and daily wage workers' wages for TCL
- Procure and multiply IPR potato seed varieties and other high-value fruit varieties.

6.1.9 Cooperative Department:
The cooperative department by virtue of its mandate regulates all type of cooperative societies. The functions of department include registration, Annual General Meetings (AGM), board notification, audit inspection, renewal of registration, conflict resolution and other regulatory compliances. During the initial phase of the programme, the Cooperative Department has defined role due to VPG model, which does not come any regulatory umbrella. With the evolution and transformation of VPG models into Village Agriculture Cooperative Societies, the programme fostered partnership with the Cooperative Department. The Department and the programme signed MoU to formalize the partnership with clearly defined responsibilities. The Cooperative department will facilitate and support the VACs in fulfilling regulatory compliances including conducting AGMs, inspections, renewal of registration etc. The programme will extend support in operational expenditure of the Department, to perform the responsibilities as elucidated in the MoU.

6.1.10 Sub-Component Land Titling System, Provincial Land Commissioner: The main objective of this sub-component is to secure land titles for the beneficiaries of irrigation

land development through the issuance of legally valid land titles by the District Land Revenue Agency. To initiate the establishment of a proper land records and titling system in GB, the programme will adopt a two-pronged strategy whereby it will assist the provincial government in carrying out the required legislative work for a provincial land titling framework but, at the same time, get an interim regulation promulgated that safeguards the interests of programmer's beneficiaries for the newly developed irrigated areas. Such a regulation will establish the basis for the classification of lands identified for development and the shares of people living in the beneficiary/claimant community. At the same time, ETI will assist the provincial government to start establishing the basics of a computerized land records system at provincial and district levels on the pattern and software design of systems being established in Punjab and Sindh provinces.

Project Inputs and Activities and Responsibilities: The Provincial Land Commissioner will notify a focal person from the provincial government to be responsible for this activity who would also be a member of the PCU Coordination Committee. Implementation of all projects financed activities and reporting thereon will be the responsibility of the Land Titling Focal Person. The Chief Secretary Gilgit Baltistan in the capacity of Provincial Land Commissioner has notified the Senior Member Board of Revenue (SMBR) as the Provincial Land Titling focal person. To proceed further on the component in the extension phase a Part PC-1 has been developed and approved from the PSC and IFAD. The main activities and inputs under this sub-component will be:

a. ***Legal Consultancy for Provincial Law and Interim Regulation-*** a legal expert will be engaged to assist the provincial government in drafting a new land law that is commensurate with the local customs and usages and provides a fair system across the area for recording and protection of land rights and their enforcement. The interim regulations shall be promulgated by the end of Programme Year 1 while updated Provincial Land Law will be promulgated by the end of Programme Year 2. Office of Provincial Land Commissioner will take the lead in all aspects of legal formulations supported by PCU in terms of necessary consultancy services. The Programme formulated a Land Titling Policy which has been approved by the Government of Gilgit-Baltistan to provide legal titles to the beneficiary households of ETI-GB developed land.
b. ***Establishment of Provincial and District Land Record Computerization Cells*** – Cells will be established at the office of the Provincial Land Commissioner and District Revenue Offices for computerization of land records starting initially with the land developed under ETI. The cells will be subsequently developed in full-fledged Land Record Offices by the provincial government. The cells will be established by the end of Programme year 1.
c. ***Procurement of servers and computers along with allied equipment for the provincial and district cells along with software*** – basic equipment for putting in use the software for land-records data of ETI- sponsored land development and issuance of titles to the beneficiary households will be procured through project funding and installed at provincial and district offices
d. ***Training of the provincial and district staff and study tour to Punjab:*** The selected staff would be sent for training and study tour of the Punjab Board of Revenue and Selective districts to study the system and learn tools of trade.
e. ***Recording of Data and maps of lands selected for irrigation development by district land records cells along with beneficiaries*** – To initiate the system, the digitized maps of land selected for development and data of the beneficiaries along with allocated parcels of lands will be recorded in the new computerised system. District Revenue Agency will provide land classification and ownership status certificate for each parcel

of land selected for irrigation development prior to initiation of any work on that scheme.

f. ***Issuance of land record titles by the cells to each beneficiary under the interim regulation of provincial government*** – once the land is developed, each allocated parcel of land will be verified by the revenue staff and district cells will issue an official land ownership title to each individual under the interim regulation.

6.1.11 Component 3: Programme Management and Policy Support: (US$ 14.23 million/10.64% of Base Cost): This component aims at providing an effective programme implementation, coordination, procurement, monitoring and technical support capability at the Gilgit-Baltistan level for effective management of programme resources and attainment of its objectives. Key elements of programme management and policy support component will be:

a. **Federal Level:** At the federal level, the Economic Affairs Division will be the main coordinating agency for IFAD, AICS and other donor financing and its subsequent monitoring. JS WB, ADB and UN will be the main focal persons.

b. **Provincial Lead Implementing Agency:** Planning & Development Department, GoGB will be the Lead Implementing Agency and will implement the programme through an autonomous and fully empowered PCU.

c. **Programme Steering Committee**: Headed by the Chief Secretary, a Steering Committee will be established in GB to provide the overall policy and administrative support, coordination and direction to the project under the Financing Agreements of IFAD and AICS. The rest of the membership will be the Additional Chief Secretary Development, Secretaries of, Finance, Communication & Works, Water Management & Irrigation, Cooperative Department, Agriculture Department and Senior Member Board of Revenue, Representative of Economic Affairs Division, rep of the Ministry of Planning Development and Reforms and Programme Coordinator ETI-GB. Detailed terms of reference will be issued as part of the Programme Implementation Manual.

d. **Programme Coordination Unit**: PCU will be established in Gilgit and will be headed by a Programme Coordinator who will be responsible for the implementation of programme activities as per the Programme Financing Agreement and procurement guidelines, PC-I and approved annual work plans and budgets. PCU will be administratively attached to the Planning & Development Department of GB but otherwise fully autonomous and empowered to implement the programme fully in terms of the Financing Agreements of IFAD and AICS with the Government of Pakistan.

e. **Regional Coordination Units**: Regional Coordination Units will be established in three regions at Skardu, Gilgit and Diamer (Chilas). RCUs will be small lean units performing field coordination monitoring and reporting functions.

f. **Policy Support:** ETI will provide policy formulation support to the government in several areas related to value chain development as well as priority areas for project investments. These include Land Settlement and Titling Policy, Provincial Water Policy, Roads Master Plan and O&M Policy, Seed and Products Certification and quality certification etc.

g. **Donor & Development Coordination:** ETI will develop effective coordination and experience-sharing mechanisms with other donor agencies, NGOs and government-funded programmes on agriculture and value chain development in the GB region. P&D, as an executing agency for ETI, and as provincial planning and development coordinator for all actors involved in value chain development, will facilitate this process. PCU-based value chain committee will include representatives from other projects/programmes in their deliberations for mutual learning and coordination.

h. **Programme Implementation Manual (PIM):** The project staff shall follow the direction/guidance provided in the PIM in planning, coordination, financial management and reporting covering PSC, PCU/RCUs and all implementing partners. The PIM includes

workable/simple templates for consistent application of required guidance in project implementation. The PIM will be a living document that will be updated as and when required with the approval of the PSC.

6.1.12 Planning, Monitoring and Evaluation and Learning Framework:

Annual Work Plan and Budgets: The AWP&B will be the key planning document for the programme. The planning format will follow the programme's logical framework with clearly spelt-out monitoring indicators that can be easily measured and reported.

PCU's AWP/B will be an enabling umbrella plan for all components. The exact scheme and VAC-wise business plans will be prepared once the business plan and scheme have been identified and all necessary preparatory steps completed. At VAC level, commodity-specific business plans will be prepared in detail covering all aspects of value chain development for that commodity including private sector partnerships, need/use of Value Chain matching funds, training requirements and assistance needed from extension and research entities. The AWP/B will also include the budgetary plan for the activities to be carried out by the partner Organization i.e. Agriculture Extension, WM&ID, Agriculture Research and Cooperative Department.

Monitoring & Evaluation: Programme results will be measured at output, outcome and results levels and will be measured against indicators provided in the programme logical framework. The system will be guided by IFAD Results and Impact Management System (RIMS). An M&E plan will be formulated at the start of the programme that would provide the basis for annual M&E plans and activities contained therein. The overall responsibility for the M&E activities will lie with PCU/RCUs under the Planning, Monitoring and Evaluation System (PME) which is in place. The PME has been a part of an overall Information, knowledge management and communication system that provides timely and accurate information on implementation progress and feedback for management decision-making. It will also show progress against planned programme results. All indicators will be disaggregated according to gender and socio-economic status to the extent possible to enable a proper assessment as to whether the programme is reaching its intended target beneficiaries, poor households, smallholders, women and vulnerable groups.

Structure and Components: The Programme PME system consists of simple planning formats with a limited number of key monitoring indicators that can be easily monitored and reported by all levels of implementation with time and cost efficiency. The programme will use simple processes, structures and instruments including simple computer-based software with multiple user interfaces at all levels to ensure that important M&E information is available to all stakeholders promptly. The design will be aligned with Government/P&D monitoring and reporting structures for foreign-funded projects to minimize duplication of effort. Baseline information will be made the basis for all measurements of programme outcomes and impacts. Knowledge management and communication will be closely linked and aligned with the PME framework for effective feedback and knowledge sharing. All staff involved with the PME system at different levels will be provided adequate training including farmers' organizations and other private sector partners.

Annual Planning & Progress Reviews: PCU will convene annual planning and progress reviews involving all stakeholders to take stock of existing progress and constraints and plan for the next year AWP/B. This will be in addition to quarterly planning and review sessions for review of progress and planning for next quarter. Seasonality of implementation is a major factor in GB and all annual and quarterly planning will particularly focus on ensuring readiness to maximise the use of short summer seasons in the area for maximum progress. Programme internal planning and review processes would be backed by regular IFAD and AICS supervision and implementation support missions.

Learning and Knowledge Management: Learning and knowledge management (KM) is a key

feature of the programme. Systematic knowledge management and learning will be used as a means to make the programme more effective and efficient, enable it to review and simplify processes, adapt much faster to emerging lessons, and achieve greater impact. The main purpose of KM processes within the programme is to ensure that the knowledge generated is systematically identified, analyzed, documented and used to improve performance. Key features of the knowledge management approach in ETI include websites, QRM forums, social media platforms etc. Key information from M&E studies, reviews and exposure visits, lessons and best practices will be disseminated through knowledge products such as newsletters, publications, case studies and reports, etc. IFAD Country Office and AICS will facilitate the Programme in lesson learning and exchange of experience between ETI and other IFAD and AICS-funded projects in the country in areas of common interest and approach.

6.1.13 Financial Management and Audit

Organizational Structure of Finance and Staffing: The financial management functions for ETI will be undertaken by a Director of Finance & Admin (DFA) and Manager of Finance & Accounts at the PCU level. The director of Finance & Admin will report to the Programme Coordinator of ETI. While PD/PC will be the Principal Accounting Officer for government purposes, DFA will have the overall responsibility for the financial management function of ETI. At the RCU level, there will be one Regional Finance and Admin Manager, reporting administratively to the Regional Coordinator, and functionally to the Director of Finance & Accounts in PCU. IFAD, government counterpart funds and funds from any other co-financiers will be managed by the Finance Unit with completely separate systems of funds flow, budgeting and accounting, as detailed below.

Organizational Structure of Finance and Staffing: The financial management functions for ETI will be undertaken by a Director of Finance & Accounts (DFA) and a Manager of Finance & Accounts at the PCU level. The director of Finance & Accounts will report to the Programme Coordinator of ETI. While PD/PC will be the Principal Accounting Officer for government purposes, DFA will have the overall responsibility for the financial management function of ETI. At the RCU level, there will be one Regional Finance and Admin Manager, reporting administratively to the Regional Coordinator, and functionally to the Director of Finance & Accounts in PCU. IFAD, AICS, government counterpart funds and funds from any other co-financiers will be managed by the Finance Unit with completely separate systems of funds flow, budgeting and accounting.

Funds Flow Mechanism – In the light of the Revised Accounting Procedure for Revolving Fund Accounts (Foreign Aid Assignment Account), notified by the Finance Division in August 2022 vide No.F.2(3) BI-I/2022/RFA (hereafter referred to as the Revised Procedures), IFAD, AICS and counterpart funds have completely segregated fund flows to separate, Designated/ Revolving Fund/ Assignment Accounts at the provincial level, to ensure a clear, verifiable audit trail.

Designated Account- IFAD funds will be disbursed to the aforesaid Designated Accounts at the PCU level, opened in the National Bank of Pakistan, after being routed through the State Bank of Pakistan (SBP). The same procedure will apply to the AICS fund, credited to its respective account. The aforesaid procedures apply to DAs of all IFIs' ongoing public sector Programmes in Pakistan, including IFAD's public sector Programmes. IFAD, AICS, and Counterpart share of all PCU-level expenditures will be paid out of their respective accounts. For opening these accounts, administrative approval from the Expenditure Section of the Finance Department of GoGB has been obtained.

The Programme will use the imprest account method for the Designated Account advanced by IFAD. The imprest will be the amount advanced to the Designated Account via the SBP, and then be periodically replenished. The maximum advance, or authorized allocation, will be 6 months of average planned expenditures to be financed in case of IFAD, which is USD 5 million for ETI.This authorized allocation of imprest ceiling (USD 5 million) will be defined in LTB. In case of the AICS, such an amount will be based on 12 months trailing period, translating to US$4.9 million (approx). The transactions will be recorded by the SBP as per the exchange rate applicable on the date of transaction/ payment.

Sub-Accounts - There were Sub-Accounts/ Programme Accounts, opened in each of the three regions of Programme implementation, which were Pak-rupee denominated as well as with the line departments managing Programme-funded activities. This was a dedicated IFAD bank account, outside government accounting and fund flow mechanism. The funds from the Designated Account were administered by the Programme Coordinator, who used to transfer the funds in Pak Rupee to the sub-accounts/ Programme Accounts held in district-level branches of the National Bank of Pakistan. All expenses by RCUs at the district level and line departments were paid out of these Sub-Accounts. RCUs and line departments used to report expenditures to PCU in Pak Rupee only. The Programme Coordinator used to replenish the sub-accounts/ Programme Account at the district and departmental level based on the justification of expenditures already advanced to the Programme Account. PCU used to consolidate all expenditures at PCU and district levels and requested replenishment of the Designated Account. In order to minimize transaction costs, the PCU used to submit requests for replenishments to the Designated Account for a minimum amount of USD 500,000 (10% of the initial advance).

The above fund flow and financial disbursement mechanism remained operative till September 2023 whereby the fund disbursement from the assignment account in the light of the aforesaid Revised Accounting Procedure. Currently and in future, unless notified by the Competent Authority to the contrary, the fund disbursement will be under the aforesaid Revised Procedure.

Moreover, the programme will no longer be able to operate its operations account and sub-accounts in three regions and the payments will only be made from the Assignment Account opened for each financier after authorization from the Finance Department, Gilgit-Baltistan.
As per the aforesaid revised procedures, cash payments or fund transfers from the assignment account to DDO or any other sub-account have been disbanded and further disbursements will only be made from the Assignment Account/ Revolving Fund Account (RFA).
The State Bank of Pakistan will transfer the funds to the Provincial consolidated account under Section- 1(ix) & (x) of the Revised Accounting Procedure for Revolving Fund Accounts (Foreign Aid Assignment Account), reproduced hereunder: Section-1(ix)- the RFA shall be lapsable at the end of each Financial Year. However, the lapsed balance in one financial year will be protected through budgetary allocation in the next financial year.

Section-1(x)- In case of receipts on accounts of projects under the control of Provincial Governments. For local Governments, Financial and Non-Financial Institutions under the administrative control of Provincial Governments, the SBP will simultaneously transfer the funds for credit to the concerned Provincial Government Account. The Provincial Finance Department shall ensure that the Budget allocations are available in the Provincial Schedule of Authorized Expenditure.

Funds Flow of Counterpart Funds- Counterpart funds will be managed through the standard

government mechanism of Annual Development Program allocations, transferred to dedicated Assignment Account 1 at the provincial level, opened specifically for ETI's counterpart funding allocations, under the sanction of P&D and Finance Departments. However, this Assignment account will be included in the overall cash balance of the Government for financial reporting and bank reconciliation. Counterpart funds will be managed through the standard government mechanism of Annual Development Program allocations, transferred to dedicated Assignment Account 1 at the provincial level, opened specifically for ETI's counterpart funding allocations, under the sanction of P&D and Finance Departments. However, this Assignment account will be included in the overall cash balance of the Government for financial reporting and bank reconciliation.

Withdrawal Applications Signatories, Bank Account Operations and Expenditure Approvals:
The signatories for WA will be:

- Programme Coordinator ETI, or in his official absence, Deputy Programme Coordinator ETI; and Director Finance ETI, or in his official absence, Finance Manager of the PCU.
- GoGB will furnish to the financier, satisfactory evidence of the authority of these personnel authorized to sign WAs and the authenticated specimen signature of each of such person. The financier concerned will be notified of any change in the signatories authorized to withdraw funds from the loan account. The withdrawal applications will be processed under the requirements of the financing agreement of both financiers.

Accounting Software-For accounting/ financial reporting and record-keeping, low-cost, simple accounting software (TomPro) has been installed, which enables accounting as per components, disbursement categories and sources of funds, by providing different fields for each voucher's entry. The software allows several users' access, licensed, and has sufficient data entry, chronological and double-entry related controls.

Safeguard of Programme Assets: The following safeguards will be adopted during implementation:

- Maintenance of a register of contracts.
- Maintenance of an asset register, treating all items of procurement with a useful life of more than one year, and value over USD 5,000, as assets with appropriate asset coding
- Assets disposals or scrapping will only be carried out in compliance with all applicable policies, and with all necessary approvals.
- All transfers of assets, procured through loan, will be utilized to further the objectives of ETI, and the co-financier will be duly informed of all such transfers, and envisaged use of assets after the Programme life;
- The audit scope will include a review of the overall asset management function of ETI applicable to assets financed through the grant.

Accounting and Internal Control Systems- For the purpose of the Programme, a detailed Programme Implementation Manual has been developed and adopted to ensure compliance with IFAD and AICS disbursement, procurement and other requirements, as well as for capturing international best practices as far as practicable.

Financial Reporting- As per the addendum to the Letter to Borrower (LTB) dated 09 April 2018, a detailed Interim Financial Report (IFR) is submitted to IFAD. Annexures to the aforesaid

addendum stipulate various reporting formats such as financers viz Sources and Uses of funds; Summaries of Expenditures by Loan categories; financial performance by components, and Variances thereof; during the preceding reporting period. Regular periodic expenditure and progress reports are submitted, at least once every quarter, to PCU, by the RCUs, line departments and VCF Management agency providing details of all revenues and expenses.

External Audit- The Auditor General of Pakistan will perform an external audit of ETI, with no formal selection or appointment required. Annual audit reports will be issued within 6 months from the end of the fiscal year, i.e. by 31st December every year. Non-compliance to the deadline will expose the Programme to suspension.

Anti-Corruption Policy Compliance: The Programme shall comply with IFAD's and the Government's Anti-corruption policy. Any fact of fraudulent, corrupt, collusive or coercive actions shall attract a range of sanctions under the provisions of applicable IFAD rules and regulations and legal instruments.

Technology Transfer Aspects: ETI will contribute to the transfer of technology in several areas. These include:

- Climate-resilient and environment-sensitive designs for roads and irrigation.
- Establishment of a seed and product certification regime in line with international standards like EURGAP etc.
- Introduction of appropriate technology for the processing and value addition of local products like apricots, cherries, apples, vegetables and dairy value chains.
- Introduction of appropriate technologies for vegetable production like tunnel farming and storage facilities.
- Labour-saving technologies for the women engaged in apricot drying/processing and vegetable production and marketing.
- Introduction of appropriate transport for various high-value agriculture products including cold reefer trucks through the Public and private sector

In addition, the project could enter into partnerships/MOUs with any other public or private sector organizations at provincial or federal levels as appropriate with the approval of PSC and IFAD to achieve the objectives associated with this sub-component.

6.1.14 Programme Focus and Coverage: As compared to the initial focus and coverage of the programme- regional approach with a focus on two major crops- potato and apricot- for Value Chain Development and four priority districts (Astore, Diamer, Ghizer and Ganche) for Infrastructure Development (ILD and FMR), the Value Chain component will cover additional promising value chains/crops keeping in view of their potential, production and contribution in the household income of farmers while Infrastructure Development will be expanded to the entire region with primary focus on leftover districts including- Skardu, Kharmang, Shigar, Gilgit, Hunza and Nagar. Interdistrict balance, equity potential and availability along with the other prerequisite sets of selection parameters will be considered. This has been agreed upon during MTR as envisaged in PC-I keeping the results of the interventions and needs and demand from the farming communities of leftover areas. This approach has been endorsed by the co-financiers and has been approved by PSC.

Target Districts Profile: During the extension phase, the programme interventions will be carried out in the entire region (all ten districts) with a major focus on leftover potential districts/areas. All programme districts are essentially rural. While below the Tehsil level, the districts are

divided into Union Councils but locally the more natural division in terms of access, social homogeneity, production orientation and operational ease are the valleys. For value chain activities, the natural characteristics of a village/valley shall be kept in mind from an economic perspective for targeting and implementation. There is no uniform number of valleys per district and the number may range from 10 to 25 including main and branch valleys. In terms of main valleys, the entire region has around 60 main valleys. The main physical characteristics of a valley are that it shares the same watershed and one main water stream and the main access road runs along the course of the mainstream. Most major valleys have smaller side valleys with their own water streams that link up with the mainstream or river.

The villages appearing in GB official records are “Revenue Villages” which is not a “natural village”. A revenue village often consists of a number of distinct hamlets or sub-villages with their own names and identities and is called a village in its own right in local usage. While the revenue village record may show around 1,000 households, actually there would be no village of that size in one place, and it would be a combined total of a number of natural villages or hamlets each consisting of anything between 20 to over 100 households. Seasonal migration of some parts of rural valley populations to higher elevation pastures is still a norm leaving behind only those members who happen to be in employment or needed to tend the main house in the village.

There is considerable variation among target districts in terms of the level of development scale, social power structures and societal attitudes. Some of it is related to religious and tribal structures and orientations and some to the level of exposure to development and access to services and markets. Diamer has more traditional tribal outlook and more prone to follow the local clergy. The literacy levels are among the lowest within the region for men and very low for women. Astore is more dynamic and open with much higher literacy levels but constrained by the difficult access to the main road and poor social and economic services. Ghanche is the farthest with the smallest population and higher poverty rates but offers huge natural advantages in terms of the production of disease-free organic high- value products due to its elevation and dry climate. Hunza is probably the most literate, most open and most well-serviced district in the region thanks to its early exposure to AKRSP and the general openness of the people to embrace change. However, its other half Nagar is still living in another time and is much underdeveloped. Ghizer, like Hunza, is more developed, much higher literacy rates and well connected to Gilgit.

Targeting Strategy: ETI will select priority valleys/villages in each district for interventions. The selection for Infrastructure Schemes and Value Chian interventions will be in accordance with the set criteria reflected under each component however, multifactor criteria including the number of beneficiary households, production of priority/focused value chains/crops, the potential of scale-up, community’s willingness, social cohesion with no conflict on the water source, land and RoW and availability of land and need for irrigation development and farm to market road needs through required detailed feasibility assessments will be ascertained. Within a valley, programme interventions will start with villages with existing community organizations that can be gelled into larger and legal entity of village agriculture cooperatives.

Gender Strategy: ETI recognizes the important role played by women in the on-farm and off-farm activities within the region. ETI, through social and business mobilization, will engage existing and newly formed women VACs within the target valleys to ascertain women's priorities in terms of value chain development, irrigation development and social development needs and priorities. Apart from actively encouraging and creating opportunities for

participation in all VACs, ETI will establish 20 women-specific VACs with women taking the lead in all value-chain development activities. Further, women-centred value chains would be another area of focus including dairy, vegetable production, fruit production and procession processing, nut cracking, by-products, value addition, packaging etc. Since women bear a disproportionate burden of harvesting, post-harvest shelling, processing, drying of products etc. The priorities of women with reference to value chain activities shall be identified by directly engaging with women as part of a social mobilization campaign. The women-headed households and landless poor will be exempted from repayment of 50% maintenance cost of irrigation and all able-bodied priority groups will be given priority access to wage-earning opportunities under the programme's invested infrastructure.

Gender and Poverty under the M&E system would monitor gender and targeting dimensions in disaggregated manner. The project M&E shall establish specific performance indicators i.e. number of all-women VACs, percentage of women members in VACs, etc. and ensure rigorous monitoring of these indicators. The programme, line departments and partners will facilitate in identifying women's needs for responding to project activities and will focus and ensure inclusion of women and youth in their activities. To the extent possible, women- related training would be delivered in situ to overcome the constraints of mobility. A revised targeting strategy will be developed by the programme section to ensure access, inclusion and targeting of women, poor, vulnerable groups and youth to ensure mainstreaming in all aspects of the programme.

Inter-district allocation of resources: Resource allocation would be determined on the basis of the average percentage score of each district in terms of combined factors of area, population, current cultivates area, new area available for irrigation development, and production share in two priority value chains and other important products. All percentages will be added and the overall average score of each district will determine its share in the programme investment budget. The same approach will be followed for leftover districts for the distribution of additional remaining targets. On this basis, the following are the shares of each district in the main investment budgets and village, household coverage as well as development of new irrigation and road upgrading. Individual districts share programme districts is reflected in table.

Table 5 District Allocation (Core district) on Basis of Percentage Share in Key Attributes

Factor	All selected Districts	Share in total			
		Ghizer	Diamer	Ghanche	Astore
Population – No	615,447	29%	32%	21%	17%
Geographical area - Km^2	29,916	39%	23%	14%	24%
Cultivated area – acres	76,800	36%	42%	4%	18%
Potential area for new irrigation – acres	131,056	4%	59%	26%	11%
Potato production (m.tons)	45,491	24%	5%	34%	37%
Apricot Production (m.tons)	43,311	33%	3%	57%	7%
Cereals (m.tons)	60,300	25%	58%	12%	5%
Other fruits	24,900	26%	46%	16%	12%
Average	**100%**	**27%**	**34%**	**23%**	**16%**
Share in Village Producers Groups -No	220	59	75	51	35
Share in Roads – km	400	108	136	92	64
Share in New land - acres	50,000	13,500	17,000	11,500	8,000

Table 6 District Allocation (Left Over Districts) on Basis of Percentage Share in Key Attributes

District	Gilgit	Hunza	Nagar	Kharmang	Shigar	Skardu	Total
Population	37%	6%	8%	6%	9%	34%	100%
Area Sq. Km	11%	25%	11%	16%	11%	26%	100%
cultivated area ACRES	11%	25%	11%	16%	11%	26%	100%
Arable land Acres	11%	25%	11%	16%	11%	26%	100%
Potato production (m.tons)	14%	21%	31%	6%	2%	26%	100%
Apricot Production (m.tons)	12%	13%	17%	19%	18%	21%	100%
Cereals (m.tons)	32%	5%	6%	3%	22%	32%	100%
Other fruits	32%	15%	16%	7%	10%	20%	100%
Average	**20%**	**17%**	**14%**	**11%**	**12%**	**26%**	**100%**
ILD Target (Acres)	**3,973**	**3,467**	**2,779**	**2,207**	**2,334**	**5,240**	**20,000**
FMR Target (Kms)	60	51	42	33	36	78	300

Value Chain Component Allocation to be flexible and across the region: The value chain development has a regional dimension and therefore the activities under the component will be implemented in all ten districts. In terms of production, Hunza-Nagar produces 40% of the total regional production of potatoes and Skardu contributes 22%, and in apricot, Hunza-Nagar contributes 20% and Skardu 39%. The development of these two value chains without these important contributing districts would not produce the desired impact. So the value chain funds and activities will be deployed flexibly from a regional perspective. The sustainability for the Programme's value chain development activities would be VACs established under the programme in addition to supporting other value chain actors- processors, promoters, enterprises, private sector, traders and organizations. New VACs may also be established as per the potential of production, and the willingness of farmers to take part as per the set criteria after proper feasibility assessments and planning. As agreed in MTR, during the extension phase, all crops/value chains that have the potential for production and profitability shall be considered in addition to priority crops- potato and apricot which include tunnel farming for seedlings cucumber and tomato, open field crops like beans, capsicum, garlic, carrot and onion seeds.

Resource Allocation within Districts: The programme would employ a combination of targeting, and 'potential-for-development-of-value-chain' strategies aimed at ensuring an equitable distribution of programme benefits. The project will follow the inter-district allocation of targets for the remaining districts as set out earlier in the original PC-1 for ILDs and FMRs. Overall, the programme would adopt an inclusive targeting approach based on the identification of promising value chains, production, potential of upscaling, and profitability with demand-driven partnerships between the smallholder producers and private and associative sectors developed. Under the VC Component, the districts where production and potential exist not only for potato

and apricot but for other commercially viable value chains will continue to be targeted. The project will look for opportunities to establish demand-driven partnerships between the smallholder producers and private and associative sectors to create sustainable and profitable value chains with a focus on inclusion. The principal targeting mechanisms would include geographical and commodity-based targeting, enabling and empowering approaches, and procedural measures to ensure responsiveness to the cross-cutting requirement of mainstreaming climate change, gender, youth and nutrition in the implementation of value chain-related activities.

Complementary Activities: Two sets of complementary activities, both economic and social, will be undertaken in the programme. Some of these will be funded through the recovered funds from irrigation development and others will be undertaken by partners through other sources of funding. Both sets of activities will follow the initial need assessment and prioritization undertaken by the communities with the needs of the poor and vulnerable being duly incorporated.

6.1.15 Sustainability and Exit Strategy: The programme has taken certain measures to ensure the sustainability of programme interventions and results after the completion of the interventions and beyond project life. This includes handing over all FMR infrastructure to C&W Department, irrigation schemes to beneficiary communities and WM&ID and land titling process to BoR. However, a comprehensive exit and sustainability strategy will be developed before the conclusion of the programme to provide guidance and assistance to the programme for a gradual phase-out of various interventions and smooth closeout of administrative, logistic and financial processes. The strategy will outline the approaches that will be followed to phase out programme interventions ensuring programme achievements are maintained and efforts are continued by the authorities entrusted with responsibilities beyond the project life. Besides providing a guideline, it also discusses the necessary measures and incremental placement of required technical, institutional and financial resources with the relevant departments to ensure sustainability.

In addition to building in-house capacities, the programme has also enhanced the capabilities of line departments, ensuring improved service delivery aligned with their provincial-level scope and status. Staff members placed in programme coordination units and line departments have been recruited through a competitive process to meet the specific requirements of each role. These individuals have been with the programme since its early phases, contributing their skills and expertise effectively over nearly seven years. Given their substantial experience and proven competence, these highly skilled human resources will be integrated into relevant government departments, aligning with their qualifications, cadre and structure.

Their deep understanding of the programme's objectives and their expertise across various domains could significantly boost the effectiveness and efficiency of government operations and service delivery. Leveraging their experience within these departments would also ensure the continuity of the valuable work accomplished and foster the application of best practices and innovative approaches throughout the government sector. (Details list of staff as Annex-II)

6.2 Justification of Project:

The justification of the extension of the programme implementation period and the proposed changes in the PC-1 is justified on the following grounds:

Overall Savings

Besides achieving substantial progress against targets and tangible outcomes, the overall utilization of September 2022, is USD 78.47 million (65.3%) including beneficiary

contribution. USD 56.28 million i.e. 49.5% excluding the beneficiary contribution of a total of USD 67 million of IFAD funding, USD 50.9 million has been disbursed while actual expenditure is USD 48.43 (72.3%). The project has spent only USD 34.29 million 51.3% of the IFAD Loan by the end of FY 2020-21—leaving a balance of USD 32.71 million thus a total amount of USD 55.69 million. As of April 2024, the expenditure is USD 61.62 million excluding beneficiary share (USD 19.8 million) out of USD 111.74 million, with a balance of USD 50.13 million (USD 14.81 Million IFAD Loan, USD 14.2 million GoGB Share USD 21.12 million AICS share) is available with the project that can be utilized till the revised project completion timeline. The financier-wise disbursement and remaining balance is given in the following table.

Table 7 Financier-wise budget and expenditure (in USD)

Financier	Overall Budget	Actual Expenditure	Balance/ Forecast	Per Cent Actual Exp.
IFAD Loan	67,000,000	52,189,435.90	14,810,564.10	77.89%
AICS	21,115,000	-	21,115,000.00	0.00%
Government	23,630,000	9,427,283	14,202,717	39.90%
Subtotal	**111,745,000**	**61,616,719**	**50,128,281**	55.14%
Beneficiaries	6,540,000	19,829,819	2,149,987	303.21%
Grand Total	**118,285,000**	**81,446,538**	**52,278,267**	68.86%

The beneficiaries' share of USD 6.54 million was in-kind contribution out of which communities contributed USD 19.829 million. Thus, the overall cash saving of the project is calculated at USD 50.13 million. One-year delayed start, COVID-19, and other contextual issues that slowed down the overall disbursement and subsequent shortfall in targets, three main factors contributed to the overall savings are as under.

First, the average cost of construction under the infrastructure development component remained on the lower side (till MTR) as compared to the estimation made in the original PC-1 as the communities directly executed all infrastructure schemes. Contrary to originally envisaged implementation arrangements for complex and larger ILD schemes and entire FMRs in PC-1- i.e. by C&W department through the engagement of contractors, the programme applied the same community-led model used for smaller ILD schemes under the supervision of WM&ID for all infrastructure schemes with the approval of IFAD and PSC. As the C&W department didn't partner with the programme as an implementing agency the programme established an in- house engineering unit for designing and supervising of FMRs while execution was made through the community likewise the other ILD schemes.

Second, the USD has appreciated about 70% since the start of implementation, thereby increasing the availability of funds in terms of PKR.

Third, AICS agreed to co-finance the programme almost at the original project completion timelines and the USD 21.12 million became available for the extension period.

Based on the above-stated situation, recognizing these tangible outcomes of the programme, need and demand for the project interventions particularly for infrastructure development activities from leftover districts and availability of funds, on the request of the Government of Gilgit-Baltistan, IFAD on August 29, 2023, granted three-years extension (October 2022-September 2025), further to its normal date of project completion i.e. September end 2022. Moreover, AICS has also joined the programme as a co- financier for the extension phase

contributing its share to the project.

The programme has to establish the required provisions in the form of human resources, partners and necessary modifications to execute the programme activities in non-core districts and leftover areas. It also requires consolidating interventions carried out during the original and 1st extension periods. The concurrent consolidation and execution of newly initiated activities will be supported with a proper planning and exit & sustainability strategy. The staffing constraint which hamstrung implementation notably in recent years, has been resolved with key positions filled and the project is now on track to deliver a fuller impact. Therefore, it is important to continue project support not only to execute newly initiated schemes but also to ensure continuous support to communities and VACs to achieve planned results.

On the basis of the internal assessments and Mission's recommendations after evaluation of the functioning and implementation status of business plans of established VACs, the project is launching the Partial Credit Guarantee Scheme (PCGS) to provide farmers easy access to finance which was reflected in PC-1. As the PCGS will be operational during the extension phase with the support of a service provider through commercial bank/s, therefore, an overall oversight of the programme is required. The programme will also continue its support to established VACs through competitive grants and will assist other value chain actors through VACs and 4Ps. Therefore, the programme requires further extension to oversight the implementation status of activities in the light of lessons learnt during its original period.

The government also needs time to complete policy actions such as land measurement, computerization of land records, land titling, road master plan and O&M, and provincial water policies to create an enabling environment for sustainability of the interventions and entities established during the project life. However, based on the previous physical and financial progress trends and experience, this doesn't seem pragmatic to complete the ongoing projects and achieve the required targets hurriedly. Therefore, the project implementation period needs to be extended by 05 years for IFAD and 06 years for AICS and GoGB till 2029 in addition to the current extension and will be concluded on 30th June 2029 including 09 months for completion of codal formalities with financiers.

Besides, the required extension, the programme also needs to incorporate the following critical modifications that were made from the implementation approach and methodology reflected in PC-1 with the approval of the competent forum.

a) Community-led execution model adopted for all infrastructure schemes (ILD &FMRs) as C&W Department didn't join the programme as an executing agency to implement larger and complex ILD schemes under component 1.1 and the entire component 1.2.
b) Significant addition to the staffing at PCU and RCUs—to support the programme in overall programme implementation and management, in conducting social, technical and value chain feasibility assessments, surveys, design, cost estimation and supervising the infrastructure development interventions in the absence of C&W Department and to execute value chain activities during initial stage of the programme and during extension phase in the absence of a VCTAT.
c) In-house Social Mobilization Unit to carry out overall mobilization activities in the Diamer region and mobilize communities around FMR in all regions during the programme and extension phase as the contracts of both service providers concluded in September 2022. Also, human resources was added in various sections of the programme as the role evolved from coordination to implementation in the case of the absence of line departments and implementing partners.

d) The transformation of informal farmers organizations (FOs) and VPGs to legally registered formal agri-business entities- Village Agriculture Cooperatives (VACs)
e) Addition of Cooperative Department GB as an implementing partner under the VC component for registration, verification and regulatory oversight of VACs.
f) Provision of Road Operation and maintenance machinery which could not be provided due to non- reflection of budget in the financing agreement with IFAD.
g) Since the programme operations were budgeted for seven years keeping in view the PCU's and RCU's role as coordination units however, the role evolved from coordination to implementation due to the absence of C&W Department to perform its role under component 1. This not only impacted on the staffing requirement significantly but also added an additional cost to programme operational budget. Nevertheless, the programme remained within the allocated budget till the completion of its initial phase.
h) Integration of IPM activities including strengthening and upgrading of IPM labs with provision of necessary inputs/equipment. Additionally, carrying out integrated pest and disease management activities in close collaboration with VACs to counter pest and disease issues.
i) Establishment of private fruit nurseries for provision of quality planting material through the Agriculture Extension Department.

Overall Programme Achievements

Despite the challenging context due to a) one-year delayed start, b) C&W Department 's decline to join the Programme as implementing partner and c) subsequent delays in establishing an institutional arrangement in the absence of implementing partners- C&W Department and SMP, d) Covid-19 pandemic, lockdowns, e) the recurrent understaffing on the key positions and f) overall geographical challenges notably short working season, the Programme achieved significant progress with tangible outcomes in all aspects and remarkable decision on policy related matters and strategic spheres. The summary of the achievements is as under;

a) *The execution of 146 infrastructure schemes including 75 ILDs, 71 FMRs, and 7 RCC bridges.*
b) *Brought around 40,000 acres of new land under irrigation network through the 75 ILDs that cover 85% of the target. The average landholding increased by 1.5 acres per beneficiary household as compared to the existing average landholding of 0.6 to 0.8 acres.*
c) *A cumulative length of 385 km of FMRs and 191 meters of bridges have been completed against the target of 400 km and 200 meters for FMR 96 % and bridges respectively. As a result of this intervention, the farmlands have been connected with the market through main valley roads providing easy access, reducing time and cost thus impacting the overall production and income.*
d) *162 Village Agriculture Cooperatives (VACs under the value chain have been established as legal entities with the provincial cooperative departments with their bank accounts opened, and business plans implemented with full-time 324 professional staff. This intervention has resulted in the organization of over 45,000 farmers' members into organized cooperatives with enhanced capacities impacting production, aggregation and sale through the collective market.*
e) *The Agriculture Extension and Research Departments as implementing partners continued providing demand-driven extension services to farmers and farmers' organizations established under the Programme in production, pre and post-harvest management, value addition, establishment and management of orchards and private nurseries. 21 private nurseries were established to provide locally grown quality planting materials, and conducted soil testing and training, benefiting over 5000 farmers and staff.*
f) *The Programme further supported the Agriculture Research Department in revamping 3 tissue culture labs and construction of 50 MT each of 07 seeds potato stores to enhance their production and storage capacity by providing necessary equipment.*

g) *The Programme provided institutional support in 3 partner departments i.e. Water Management, Agriculture Extension and Research through the provision of supplementary staff and operational budgets. ETI-GB has mainstreamed gender, youth and climate change aspects in its activities effectively. This benefitted over 8% of poor households in infrastructure schemes in expanding landholding, exemption from payback and employment opportunities Around 30% of youth and 27% of women have benefitted through Value Chain intervention and are taking part in leadership roles and decision-making processes. It is worth mentioning that 15 VACs are women-specific and are led and managed by women.*
h) *The overall participatory and community-led implementation approach of the Programme has been found efficient and cost-effective ensuring quality and sustainability.*
i) *The Govt of Gilgit Baltistan has approved the ETI-GB-related land titling policy to award legal titles to beneficiary households. This remarkable decision on land titling has benefitted over 27,000 households in acquiring land titles*

The work on policy formulation on GB Water Policy and Road Master Plan and O&M Policy is under process and is expected to be completed in one year. Though most of the project activities are yet to be completed and the impact will be visible years after completion, still there is sufficient evidence showcasing the tangible outcomes of the programme interventions in terms of income, production, accessibility, and scale. The Impact Survey conducted with the technical support of IFAD reveals that 63% of beneficiary farmers reported an increase in their agricultural production, 58% in agricultural income, 81% reported improved access to market their production and 73% reported their satisfaction with the project services and activities while equal percentage reporting project interventions were highly relevant. There is strong traction for the community-led infrastructure model that ETI-GB has developed and effectively implemented so far. It's more effective, efficient, and sustainable as the end user remains engaged in part of the entire process. Similarly, legally registered and professionally managed farmers-based agri-business cooperatives are also setting trends showcasing positive results of production, sale, marketing and partnership with the public and private sectors. Growing memberships in established VACs and demand for new ones in the leftover potential areas on a matching grant basis are evidence of the effectiveness of the model. The project interventions, particularly civil work are observed efficient in terms of cost and completion timelines as compared to similar interventions in the region. In addition to cost efficiency and effectiveness, the community contribution in terms of Right of Way (RoW) for ILD and FMR has been observed higher than the projections of PC-I.

Financiers Recommendations on lesson learnt and expansion to leftover districts

With one year delay, the programme activities began in May 2016 with the initial recruitment of core staff. The focus during the initial years remained on the establishment of Programme infrastructure including the establishment of PCU and RCUs, staffing, procurement, partnership with line departments, and hiring of partners and service providers. A concurrent interim strategy was formulated and implemented on the recommendations of initial IFAD Support Missions with the approval of PSC till the placement of the required organizational infrastructure. The design to quickly start the implementation of Programme activities. The strategy includes a decentralization approach, hiring in-house short-term technical resources for technical assistance and designing of infrastructure schemes. The programme has to add additional resources and establish an in-house technical unit for the supervision of infrastructure schemes as C&W Department didn't join the programme as an implementing partner. Since the social mobilization partner (SMP) was not ready to carry out social mobilization activities in the Diamer Region, therefore, an in-house small unit was also established to carry out mobilization activities in the Diamer District.

After the project Mid Term Review (MTR) in December 2019 changes were made in the programme implementation approach based on the results and needs of the programme. Among the key decisions taken during the MTR were a) the inclusion of additional promising value chains besides the initially focused two key crops i.e. apricot and potato b) the establishment of Village Agriculture Cooperative societies (VACs) to ensure the evolution of informal farmer organization to a formal legal entity c) initiate preparatory work to expand the Economic Infrastructure component to left-over districts.

Subsequently the Principal Accounting Officer (PAO) granted 02 yearly extensions in accordance with the provision of the Planning Manual. Now the approval of a competent forum is required for 03rd year extension and beyond. During the extension phase, the programme has to implement infrastructure activities in the whole of Gilgit Baltistan with a focus on the remaining 06 districts. During the extension phase, the Value Chain component will further be strengthened through handholding, capacity building and regulatory oversight of the VACs. As the VAC established by the program are at a nascent stage it is imperative to provide time and technical support to run a business on their own. For this to happen it was observed that access to finance is a key component key requirement to scale up and sustain business interventions to increase the agriculture income of farmers. Therefore, on the recommendations of the co-financiers, the project is launching a Partial Credit Guarantee Scheme (PCGS) to provide farmers with access to finance. Policy-related initiatives which could not be started in the initial phase have been started and substantial progress has been made.

The following are the revised targets which will be achieved during the extension phase.

- Additional 20,000 acres of land under the ILD component benefitting 20,000 HHs.
- Land development and cultivation on new lands.
- Construction of 300 KM additional FMR
- Provision of road maintenance machinery to the Works Department.
- Establishment of new VACs in leftover potential areas benefitting 10,000 HHs.
- Provision of more than 100 grants to promote Agribusiness.
- The implementation of PCGS by establishing value chain funds.
- Engagement of 50 Agri Tech fellows.
- Regulatory compliances of VACs by conducting Audit and AGM.
- Strengthening of the VACs to ensure sustainability.
- Build on the previous interventions to maximize the outreach and ensure its sustainability.
- Provision of demand-driven extension services and multiplication of seed potatoes.
- Integrated pest Management activities.
- Land measurement and titling through BoR of the newly developed land.
- Strengthening of the Board of Revenue and computerization of land records.
- Completion of policy formulation i.e. GB Water policy and Road Master plan and O&M policy.

Force Majeure Challenges

The programme was being executed smoothly, achieving its targets unfortunately, the spread of the COVID-19 pandemic and its subsequent protective measures like lockdowns, restrictions on inter-district mobility, and other precautionary measures put the programme almost at a halt for a year. Furthermore, the non-availability of construction materials and laborers slowed down physical activities for almost two years. In the following years the absence of key staff, particularly a full-time Programme Coordinator, Director of Finance, Infrastructure Specialist, Value Chain Specialist and Regional Programme Coordinators also made an adverse impact on

the overall Programme.

Recognizing these tangible outcomes of the Programme, on the request of the Government of Gilgit-Baltistan, on 29th August 2022 IFAD provided a three-year extension (October 2022-September 2025) Moreover, as mentioned above, AICS has also joined the programme as co-financier for the extension phase contributing its share to the project and its initial tranche of USD 5 Million has been received.

Based on lessons learned and quantum of work the completion of certain activities may go beyond the extended period. This is also true for the access to finance components as it will have to continue for at least 04 years with the required modification. It is also expected that all the new irrigation schemes will take 3-5 years to be developed and start producing the desired yield. The infrastructure schemes for AICS are to be separately and dedicatedly funded by the financer and its execution is yet to be started. Therefore, the project implementation period needs to be extended.

6.3 Sectoral Specific Information

The Agriculture Department has conducted a thorough study on the development of Agro-ecological Zones and Agriculture Potentials of GB as an integral part of the sectoral reforms with the aim to guide improved planning in the agriculture sector to increase productivity and harness full potential of the region. The findings, conclusions and recommendations provide a clear basis for targeted planning and investment in the region. The key findings and recommendations have been reproduced i to provide guidelines for the programme activities in the extension period.

Agriculture Sector: Agriculture is the most important sector in GB. More than 90% of the population is engaged in this sector. Development of agriculture value chain is important for the economic growth in GB as well as ensuring food security for its people. Majority of the population practice subsistence agriculture as the per capita land holding is below 0.4 acres, which is insufficient to fulfil food requirements of the people. Due to small landholdings and traditional agriculture patterns, farmers are not able to produce enough to feed their families round the year. They cultivate fragmented hilly terraces, and in most of the cases such lands fall under single cropping zones, which limits the ability of high annual crop harvest. In addition, they live with several high-altitude risks, which render their agricultural production exposed to natural disasters and losses due to changing climatic conditions. However, due to increased accessibility new avenues for marketing the produce has opened as the products of GB has high demand due to its unique organic content. Some of the producers of GB are regarded as super food due to its nutritional content. Farmers' readiness, however, is limited to live up to the new opportunities.

Agriculture Productivity in Gilgit-Baltistan

Comparison of per unit area production of wheat, maize and potato for GB with the average production of Pakistan and other countries indicate that agriculture productivity especially for wheat and maize in GB is significantly low.

Wheat in GB performs lowest even when compared to national average and average from Punjab. GB's per unit area yield of wheat is 2.3 metric tonnes per hectare (mt/ha) compared to Punjab province at 3.0 mt/ha13 and national average of 2.9 mt/ha. Performance of maize is also low when compared to Punjab and national average. Per unit area yield of maize in GB is 2.5 mt/ha compared to 7.0 mt/ha average of Punjab, national averages of 6.4 mt/ha. Yield of potato in GB is significantly at par (24.3 mt/ha) compared to the average of Punjab 24 mt/ha17, national

average of 24.6 mt/ha). Hence potato despite low performance is doing well when compared to other averages. (source GB AEZ Report)
Another important issue is pre-post-harvest losses. GB produces around 169,000 tons of fresh and dry fruits out of which only 10,119 tons (6%) are being marketed in mostly low-end markets and a huge volume equal to 57,178 tons (34%) is wasted due to issues along the value chain. Similarly, in vegetables, against the production of 152,000 tons, around 12,000 tons or more (8%) goes waste due to connectivity problems and lack of infrastructure and storage facilities. Significant losses are also reported for fruits. For example, apricot 35%, apple 17%, grapes 15%, pear 18%, mulberry 56% (Baig, Ali, and Raza, 2022).

6.3.1 Land tenure

Land in GB is either privately owned or by the Government of GB. The natural forests are government owned with community rights, except in case of Diamer district where forests are owned by the communities. Pastures including the Khalisa Sarkar lands are demarcated and are jointly used by the respective communities for grazing, collecting forest products and other natural resources. Farmland in the entire GB is privately owned (except some government owned farms) and mainly farmed by the owners themselves. In Diamer district, however, land is also farmed by tenants. The tenants and the owners share the produce. The tenants also take care of the livestock of the owners, especially during summer when the livestock is taken to the summer pastures.
The private land is owned by the family. However, land distribution is paternalistic and therefore, family land is inherited mainly by male members of the family. In very few cases, the female members are given their share of land according to law of inheritance.

6.3.2 Production, Productivity and Value Chain Challenges:

Agriculture in GB suffers from several challenges affecting production, productivity and value addition. These challenges are:

1. **Small and fragmented Land holdings:** The average cultivable land owned by the households in the area is very small (0.8 acre/hh) and sparsely scattered. In order to increase the household landholding is to bring the cultivable barren land is required to be brought under plough through the construction of irrigation infrastructure preferably gravity flow water channels.
2. **Poor Access to Agricultural inputs:** Multiple factors are responsible for poor access to modern and agricultural inputs which include: the non-availability of improved seed, fertilizers, pesticides and farm machinery due to the absence of mainstream national and multinational seed and fertilizer trading companies; Non-existence of a public and private sector farm input supplying system; Lack of a public sector basic seed production system and trained seed producers/registered associations to multiply and market that seed; lack of public sector capacity to meet the demand of quality fruit plants; poor private sector capacity to produce quality fruit plants.
3. **Lack of technology:** Gilgit-Baltistan, with its limited land and water resources needs modern production and processing technologies. However, the area is critically lacking even the simplest production technologies which have been successfully adopted elsewhere in the world. This is due to: a lack of R&D institutions**;** lack of capacity to produce suitable hybrid and synthetic varieties; lack of training for the technical staff; absence of quality seed testing and disease diagnostic facilities with trained technicians; poor technical information base and a lack of linkages with the national and international knowledge sources; lack of quarantine services for preventive measures to maintain the existing disease- free status of the GB.
4. **Poor Crop Management and High Post-Harvest Losses:** Poor access to quality inputs

and improved technology has limited the farmers' access to standard crop management practices which are critical to obtaining optimal output. The post-harvest losses for apricot are as high as 45% whereas for potatoes they range from 10 to 15%. Loses in Mulberry production is as high as 90%.

5. **Absence of data on soil types and soil fertility:** Establishment of a permanent facility for collection and analysis of soil data and GB soil repository. No comprehensive soil survey has been conducted for GB. Scattered data on soil types and soil fertility are not enough to provide a complete picture of soil conditions, which are diverse due to its great topographic diversity.
6. **Poor/Inadequate Irrigation infrastructure:** Irrigation is the lifeline of agriculture in Gilgit- Baltistan. Almost all of the channels have been constructed by respective communities without the use of modern engineering structures and hence are prone to natural disasters like flooding, landslides, earthquakes etc. The major issues in irrigation infrastructure are:
    a. *Unreliable and inefficient irrigation infrastructure*
    b. *Thousands of acres of arable land available but lying barren due to lack of resource for the construction of new irrigation channels, and improvement and expansion of existing channels.*
    c. *Decreasing water delivering capacity of water channels*
    d. *Increasing repair and maintenance costs of water channels*
    e. *Lack of a standardized community-based O&M system*
7. **Labor intensive irrigation system:** Improved irrigation infrastructure to minimize maintenance costs for the farmers. The irrigation channels are constructed along precipitous mountain slopes. Most channels are not lined up and get eroded every year due to natural hazards during snowmelt and rains. Major repair at the start of growing season and minor repairs throughout the season make the irrigation system labour intensive and un-economical to maintain. This perpetual maintenance costs may be reduced by ensuring that the structures are fully reinforced against natural hazards. New structures need to be designed by mainstreaming disaster risk mitigation.
8. **Natural hazards (flash floods, river cutting and landslides):** The entire GB is prone to natural hazards which have increased in recent years due to climate change and climate induced variability. Human settlements, agricultural and pasture lands by the rivers are increasingly getting eroded due to unprecedented rise in volume of water in rivers during summers. Disaster risk reduction and mitigation need to be fully mainstreamed in planning of all sectors
9. **Poor Road Infrastructure and Accessibility to Markets:** The region is isolated and far away from major markets. The closest main market, i.e. Islamabad, is located at a distance of 630 km from Gilgit and 820 km from Skardu city. The condition of KKH is not supportive of the transport of perishable agricultural commodities to main markets. Even within the region, many villages have not yet been linked with valley and sub-valley road networks and the condition of existing road infrastructure is poor. Transportation of highly perishable fruits and vegetables from GB is another challenge, as the travel time to end markets is measured in days. Lack of specialized transportation facilities, such as refrigerated trucks, makes marketing of fresh produce even harder. Similarly, due to inadequate storage facilities, farmers and local traders often struggle to store perishable produce (such as seed potatoes) to fulfil the seed requirement for the next seasons. Currently, the available storage facilities in GB can only accommodate 475 MT of seed potatoes – a fraction of the total seed requirement, estimated to be 8000 MT. Long distances also affect access and affordability of inputs imported from outside.

10. **Absence of value addition:** GB produces many crops that can fetch high revenue with value addition. There are, however, no value addition facilities and most agricultural products are sold as raw material in the market. Post-harvest losses are prevalent in all crops, especially in fruits. Thousands of tons of fruit get wasted due to non-availability of technology and facilities for value addition.
11. **Lack of market information and storage facilities:** GB does not have a vibrant private sector and a large market to promote market information and linkages with private sector. There is a lack of proper market information and linkages on when and where to buy quality inputs and sell products for best profits. Farmers, therefore, depend on middlemen to market their agricultural products. Storage facilities are not available to seek a chance for collective marketing at an appropriate time. Farmers are compelled to sell products as soon as the crops ripen at the farmgate or when the first buyer offers any price.
12. **Urbanization and land use change from agriculture:** Agricultural land in GB is converted into housing and other concrete settlements. As a result of land fragmentation, limited land with little incentive from agriculture, and increasing population needing more space to live, agricultural terraces are converted into housing infrastructure. However, the problem is caused by scattered distribution of houses since each heir/owner is compelled to build on his piece of land which then needs access through other people's terraces. This unplanned expanding settlement is changing the scarce agricultural land into scattered houses and foot paths/jeep treks.
13. **Migration of young men and feminization of agriculture:** Due to small farm sizes, lack of economic return from agriculture, and tough labour engagement in the absence of mechanization, farming is not the best option of livelihoods especially for young men – both educated and otherwise. Most of them migrate to the cities in search of jobs. Farming, therefore, is increasingly the responsibility of women left behind in the villages.

6.3.3 Agro-ecological Zones, Climate Change and Seasonality

Gilgit-Baltistan is delineated into seven Agro-ecological Zones (AEZs): Hot & Cold Temperate Zone (spread over 1.5% of the total areas of GB), Warm and Cold Temperate Zone (2%), Transitional Warm & Cold Temperate Zone (2.7%), Cold Temperate Zone (5.1%), Sub Alpine Cold Temperate Zone (4.7%), Alpine Cold Temperate Zone (14%) and High Alpine & Glacial Zone (70%). Astore, Diamer, Ghizer and Gilgit Districts are spread over all seven zones. Nagar, Hunza and Skardu have six zones each whereas Ghanche, Kharmang and Shigar have five zones. Weather patterns, particularly the temperature trends in the area have changed as witnessed in recent years. Climate change indicators are notably intense. An average increase of temperature for GB from 1990 to 2020 is noted to be in the range of 0.50C to 10C. Both day (maximum) and night (minimum) temperatures are increasing, but the night temperatures are increasing at a higher rate than the day temperatures. The rate of increase in temperature is higher at higher elevations (e.g., Shigar, Ghanche) when compared to lower elevations (e.g., Diamer, Gilgit).

Although the temperature in GB is increasing for all the seasons, spring and autumn are registering higher increase particularly in the months of April and October as compared to winters and summers (e.g., increasing up to 2.8 0C in the months of April and October in case of Shigar). Global climate scenarios 2050 place GB in the region of projected temperature increase of 1.50C to 20C between 1990 and 2050 under all climate change projection models. This means that GB will be warmer by 1.5 to 20C by 2050. Due to temperature rise during spring months, the spring is starting earlier. The season also ends earlier due to early start of

summer. The total shift is by 15 to 20 days. The summer season is expanding, and autumn and winter are getting shorter. In most districts, precipitation is reducing in winter and spring seasons and increasing during summers and autumn. Overall precipitation in GB is projected to increase between 0 and 0.1 mm/day.

6.3.4 Production Potential

Comparison of per unit area production indicates that GB is well suited for fruits, potato and vegetable cultivation and not for cereals including wheat or maize. Per unit area production of wheat and maize is significantly lower when compared to the country's average production. GB's post-harvest losses are very high due lack of improved pre and post harvest handling technologies and poor infrastructure for transportation of products to the market. Farmers are not fully equipped to take adaptation decisions adequately suited to new climate patterns to secure crop yields and productivity.

Rising temperatures, longer summers and shorter winters provide opportunities for growing longer duration crops followed by a short duration crop after the main crop is harvested. Changes in climate have made it possible to grow winter wheat in some areas where traditionally only summer wheat was cultivated. Compared to the 1990s, GB is increasingly connected with the market due to improved road infrastructure, digitalization, and demand for niche products having GB origin. However, remote areas still face the challenge of access and connectivity with market.

Educated youth do not see much incentive in cultivating small pieces of land that they inherit. Feminization of agriculture, therefore, is widespread throughout GB due to man power migration to other parts of the country in search of jobs and other economic opportunities. At the moment women play major role to carry out farming activities.

6.3.5 Recommendations to address the production, productivity and value chain challenges

Crops and fruits suitability

Despite altitudinal and climatic variations across various zones, several crops are grown in multiple zones (e.g., wheat, maize, potato, cherry, apple apricot, and several vegetables). All these crops seem to grow well in different zones. The most important element is the economic viability of a crop in specific cropping zone. Not everything that grows in a certain zone is also economically best for that zone.

- Cherry crops may be more profitable when grown in Warm & Cold Temperate and Transitional Warm & Cold temperate zones, although it can also grow in Cold Temperate Zone. It is suggested to promote cherry in the two zones where it is more profitable. Potato is grown in all six zones whereas it has a far better performance in cold er zones (Transitional Warm & Cold Temperate, Cold Temperate, and Sub alpine Cold Temperate zones).
- Tomato and cucumber perform well in three zones – Hot & Cold, Warm & Cold, and Transitional Warm & Cold Temperate zones, particularly in vertical farming mode.
- Cereal crops should be only promoted as a rotational crop with potato and other high value vegetable crops. GB's climate and scarce agricultural land are suitable for growing high value crops than wheat and maize.

Managing production challenges

- The entire GB is prone to natural hazards which have increased in recent years due to climate change and climate induced variability. Financial risk coverage for economically high value crops may be piloted through insurance schemes.

- Increasing prevalence of pests and disease have been reported due to increasing warming trends that disturb the ecology of the area. ICM knowledge of extension workers and farmers needs to be built for timely control of the problem at the source.
- Post-harvest losses may be minimized by introducing value addition, developing cold supply chains and crop storage facilities.
- Quality and timely provision of seed and true-to-type quality planting material are lacking in GB. An exclusive project on improved certified seed / planting material production is necessary in the region.
- Scaling up vertical farming for optimal resource uses, avoiding harvest losses and to maximize per unit area production is suggested throughout GB.
- In areas with no perennial irrigation water source, shortage of irrigation water in spring and autumn is common. This makes the short growing season even shorter. To overcome this challenge, developing irrigation sources including Glacier Farming or other innovations needs investigation and promotion.
- The perpetual maintenance costs of irrigation infrastructure may be reduced by ensuring that the structures are reinforced against natural hazards. New structures need to be designed on disaster resilience principles.
- Soil analysis indicates that the soils in GB are poor in organic matter which need to be addressed. Among others, improving irrigation practices to conserve soil is imperative.

Commercializing, extension support, and farm machinery

- The government should promote commercialization of agriculture by supporting cultivation of key commercial crops and facilities for processing and packaging. Commercialization of agriculture will provide incentives for youth especially those educated to return to the agriculture sector.
- Food security is another important issue that the government has to prioritize in the policies. Food security, however, cannot be achieved by simply encouraging cultivation of wheat and maize. It is a well-established fact that GB was never self-sufficient in grain even when the population was very small and only subsistence crops including wheat and maize were grown.
- Promoting market information and linkages with private sector must be further encouraged. Storage facilities may be established with private sector support to utilize opportunities for collective marketing at an appropriate time where applicable.
- GB needs specialized farm mechanization technology that suits local terrain, is readily available, and is cost effective. Local entrepreneurs may be supported through microfinance banks to own such machinery, acquire the right set of skills, and offer services. This will fill service gaps and provide jobs.

Research

- Pest monitoring research to identify the pest activities in different AEZs to understand the impacts of climate change on the population of pests.
- Based on existing and climate change knowledge, identify appropriate varieties of crops and fruits suitable for different zones.
- An extensive soil survey may be deployed to form a baseline and ensure collection, analysis, preservation, and dissemination of soil data readily.
- Document indigenous knowledge and practices on selected crops and fruits cultivation, post-harvest management, and food preservation.

7. Capital Cost Estimates:

Financial Components: Capital
Cost Center: OTHERS- (OTHERS)
Fund Center (Controlling): N/A
Grant Number: FINANCE DIVISION - (FC22D14)
LO NO: N/A
A/C To be Credited: Account-I

PKR Million

Sr #	Object Code	2024-2025		2025-2026		2026-2027		2027-2028		2028-2029	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign
1	**A05202**-To Provincial Government	790.21	1,999.46	1,185.32	2,999.19	1,185.32	2,999.19	790.21	1,999.46	0	0
Total		**790.21**	**1,999.46**	**1,185.32**	**2,999.19**	**1,185.32**	**2,999.19**	**790.21**	**1,999.46**	**0.00**	**0.00**

8. Annual Operating Cost (Post Completion):

Financial Components: Capital
Cost Center: OTHERS- (OTHERS)
Fund Center (Controlling): N/A
Grant Number: FINANCE DIVISION - (FC22D14)
LO NO: N/A
A/C To be Credited: Account-I

PKR Million

Sr #	Object Code	2024-2025		2025-2026		2026-2027		2027-2028		2028-2029	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign
1	**A01106**-Pay of Contract Staff	106.50	229.69	159.75	344.53	159.75	344.53	106.50	229.69	0.00	0.00
2	**A03970**-Others	111.59	635.33	167.38	952.99	167.38	952.99	111.59	635.33	0.00	0.00
3	**A12404**-Structures	572.23	1,134.34	858.35	1,701.50	858.35	1,701.50	572.23	1,134.33	0.00	0.00
Total		**790.32**	**1,999.36**	**1,185.48**	**2,999.02**	**1,185.48**	**2,999.02**	**790.32**	**1,999.35**	**0.0**	**0.0**

9. Demand and Supply Analysis:

ETI will invest in three main activities namely: (i) Development of 70,000 acres of new irrigated land; (ii) construction of 700 km of farm to market roads; and (iii) value chain development of apricot and potato during the initial phase with provision for inclusion of more products from the region after mid-term review. Summary of the demand and supply analysis with respect to the three main investments of the progamme is as following (detailed analysis of two components is available in Programme Design Report):

9.1. Irrigation Development:

GB is situated in the extreme north of the country interspersed by three mighty mountain ranges of Karakoram, Himalaya and Hindukush. The total geographical area is about 72,500 km2 with a population of 1.7 million living in more than 600 villages with a population density of 18 persons per km2. A large majority of the area is mountainous and only about one percent of the total area is currently cultivated. Irrigation is essential for any area to be cultivated as the region largely falls outside the monsoon range and receives very little rain. Apart from the one percent cultivated area, the rest is covered by mountains, rivers and glaciers (66 percent), rangelands (23 percent) and forest (4 percent). The average per household landholding is only 0.6 acre; and 66 percent of agricultural land lies in single cropping zones at high altitude amidst arid mountains.

GB region is endowed with some natural advantages in terms of elevation and crop growing seasons and produces some very high value fruits and vegetable crops. However, the realization of full potential is currently constrained due to small landholdings. Around 140,000 acres of cultivable waste land can realistically be provided irrigation in the region. These lands have feasible water source and design options, which can be developed if investments are made available. Diamer district has the highest cultivable waste area of about 77,000 acres followed by Skardu with more than 54,000 acres. Details of cultivated and cultivable waste areas by district is shown in below table:

Table 8: Cultivated and Cultivable Barren Land by District

No.	District	Cultivated Area (Acre)	Cultivable Barren Land * (Acre)
1	Diamer	13,757	13,117
2	Astore	10,912	18,697
3	Ghizer	18,387	25,567
4	Ghanche	9,447	8,505
5	Hunza	5,285	10,847
6	Skardu	16,487	26,367
7	Gilgit	9,302	10,092
8	Nagar	3,822	4,822
9	Kharmang	2,882	5,645
10	Shigar	8,877	4,970
Total		**99,158**	**128,629**
** Culturable Waste*			
Source: Agriculture department (AEZ Study) 2023			

Irrigation Development Potential:

Following the programme formulation Mission, the Water Management Directorate carried out a rapid survey of the GB region to identify irrigation schemes with secure water source, clean land ownership and land development potential and identified 296 channels in all seven districts with total command area of 139,765 acres. Out of these 160 schemes are in the priority four target districts of ETI with a total potential command area of 71,528 acres. The identified schemes cover

whole range in terms of number of beneficiary households and command area. The smallest ones are 6-7 acres with 9 to 15 beneficiary households whereas the large ones are over 2000 acres with beneficiary households numbering from 900 to over 2000. This huge variation in command area potential and beneficiary households calls for a clear criterion for selection of priority investments so as to focus programme resources where the maximum progress and benefit could be achieved. A strong point of this survey is that all the schemes with any kind of water source or land ownership dispute have been also identified and separately parked for future use. The district-wise break-up of surveyed schemes is reflected in the following table:

Table 9: District-wise Detail of WM&ID Surveyed Potential Channels (Nov 2014)

S/No	District	Beneficiary House Holds	Total No of Channels surveyed	Command Area (Acres)
1	Hunza- Nagar	22968	43	12196
2	Gilgit.	17553	50	22602
3	Skardu.	14947	43	33439
4	Diamer	49557	48	23057
5	Ghizer	18243	56	30600
6	Ghanche	5180	18	8714
7	Astore	4156	38	9157
8	Total	132604	296	139765

Operative Experience and Practices: ETI has built on already well- established and tried and tested approaches to irrigation infrastructure development in the region. Historically, irrigation channels have been developed by the communities themselves and every community has considerable skill base in channel construction and maintenance. Some of the irrigation channels in GB are over 500 years old. In recent times, AKRSP, C&W Department, WM&ID, NADP and Local Government Department have all worked in participatory irrigation development in the region and accumulated vast experience in this sub-sector. In the operative construction methodology, the communities provide a share of the cost, ranging from 20% to 40%, in the shape of labour and local materials. Some very large and complex schemes were, however, assigned to C&W Department in view of their better engineering skills and implementation capacity, and communities' inability to contribute 20% share and such schemes were executed through contractors. However, post completion O&M in such schemes still remained community responsibility. Community contribution is onerous for the communities for the large schemes covering over 500 acres and has been the main reason, apart from availability of financing, for non-development of some of the medium to large schemes in the recent past. The community contribution-based approach also works against the interests of IFAD target group i.e. poor and landless. Village infrastructure investments are supposed to create wage-earning opportunities for the poor and capitalize their household economy. Requirement of community contribution in the shape of free labour deprives such households from this income generation opportunity.

Programme Approach: The programme has followed a more innovative approach whereby communities will not be required to make upfront contribution. ETI will pay full cost of the schemes and the communities will be required to payback 50% of the cost of the scheme into a joint community and ETI managed account over three cropping years. This approach will provide remunerative wage opportunities for the local poor and landless and infuse considerable cash into local subsistence economy. Staggered repayment period, aligned with incomes from newly developed land will enable the communities to easily payback the amount involved. Part of the recovered amount will be used for scheme maintenance and part of the funds would be available for community development (public good) and/or for investment in value chain activities. The

guidelines and terms and conditions for this are included in PIM.

Allocation of New Developed Land: There is no uniform land tenure system in Gilgit-Baltistan, different systems and practices prevail in different districts depending on the historical status of the area. In six districts, the land settlement took place and records of rights were prepared whereas in four other districts, the land ownership is still based on historic tribal and clan rights. There are three broad categories of land that is available for new irrigation development. First,the land is community's property and divided between the community members and the community is now looking for funds to develop irrigation facilities. Second, communal land (Shamilat) that is yet to be divided and is currently being used as common pasture or just lying idle. Third, Khalsa Land/State Land that would require Government sanction under the Nautore (New Broken Land) Rules tin order for it to be developed and distributed. But the common thread among all the land tenure systems is that communal development of new irrigated areas results in equal distribution of land among all households in the community. There are two models for this distribution. One is prevalent in Diamer district where every male member of a household, irrespective of age, gets one equal share in the land being distributed. So, the households with larger number of male members get proportionately more land. The second model is prevalent in rest of the region where each household gets an equal share of land irrespective of the size of the family.

Scheme Selection Criteria: ETI-GB will follow an integrated and coordinated approach to implementation of programme activities so that they collectively support the programme objective of enhanced incomes for the target beneficiaries through a value chain development approach. Towards this end, the programme will prioritize valleys in each district based on their current production of targeted crops, number of villages and households, potential for new irrigation development and roads development and existing status of farmers enterprises and groups. Once valleys and target villages are selected, a specific criterion will be used to select the feasible irrigation schemes. These criteria will include:

- The scheme is technically, socially and environmentally feasible.
- Availability of sufficient and reliable quantity of water for most part of the year – preferably perennial.
- Availability of free right of way for channel.
- Absence of any land and water right issues.
- Land distribution on Households is mandatory prior scheme execution.
- Community's undertaking that the land has been equitably distributed among all beneficiary members in accordance with the prevailing customary laws.
- Community's undertaking to pay back 50% of the total irrigation channel construction cost in 03 cropping seasons.
- Community's undertaking to develop the land parallel to irrigation channel construction.
- Community's undertaking that no claim whatsoever will be there in case of damage to life and property during channel construction.
- Should not have potentially adverse or negative environmental effects/impact.

Actual work on the new schemes will be initiated after the land has been distributed and parallel land development has started.

Scheme Ranking Criteria: Since the project target area has potentially more land available for irrigation development compared to project target, the programme shall therefore select schemes for investment on the basis of a ranking criteria from among the list of feasible schemes available with the WM&ID. The ranking criteria will have the following elements:

- First priority to schemes with over 150 acres potential command area or over 150 beneficiary households.
- In case of improvement / widening of existing channel, the proportion of new land (barren) to be irrigated should add at least 60% of the existing irrigated area.
- The beneficiary community should be within the priority valley selected for programme's value chain development interventions and the scheme may contribute to development of identified value chain.
- Demonstrate relative cost effectiveness in terms of larger impact (% irrigated area, number of beneficiary population/villages, % increase in agriculture produce, and potential for more value addition etc.).
- The cost of investment should be worked out in accordance with the out put of the value chain activity to ascertain the value is justified for the investment.
- The scheme should be in vicinity of the village (within a radius of 15 km).
- Should have at least 12% economic rate of return on investment.
- The maximum cut-off limit in terms of cost per scheme should be Rs. 150 million.
- No scheme will be undertaken which does not conform to the existing value chain development.

Land Development Support: Land Development Support: Past experience shows that it takes considerable resources of poor farmers a long time to fully develop the new irrigated areas. Land is traditionally developed through manual labour, mostly from within the house and some hired skilled workers for stone blasting etc. Part of the reason for this is financial constraints and part is tradition. This method takes an average household five to seven years to develop its land. In order to ensure that new command area of ETI-GB sponsored irrigation is quickly brought under full cultivation, the programme would therefore support by sharing the land development cost through cash assistance of PKR 10,000/- per acre (@100 USD/acre). It is recognized that in most cases this would not meet the full cost of development, but this is meant as an encouragement support rather than the full cost for development. As in most cases, the terrain is not uniform and requires branch channels to reach water. Therefore, the land development fund may be used for the construction of secondary and tertiary channels in the command area after proper assessment. ETI-GB will also assist the beneficiary SMT/VACs/WUAs to engage appropriate machinery (diggers, excavators, dozers and/or tractors) on rent for the land development through a collective contract. This will ensure cost effectiveness, speed and efficiency for land development activities.

Cost Repayment System: Beneficiary community would be required to pay back 50 percent of the scheme development cost over three cropping years from the time of planting of the first crop on the newly developed land. The amount of repayment would be agreed with the community at the time of signing of agreement for the irrigation development between the community and executing agency. The community will open a bank account in a commercial bank which will be jointly managed by the community nominated representatives and one representative nominated by ETI-GB. A roster of all scheme beneficiaries along with their land share will be prepared and per crop repayment for each beneficiary will be calculated and recorded in the roster. SMT/VAC will be responsible for the recovery of this amount on agreed times for three years. SMT/VAC will be responsible for making up for any individual default. A collective or substantial default on part of any community/SMT & VAC will lead to suspension of further prorgamme activities and investments with that community.

Punitive action against defaulter: The ultimate objective of the ILD scheme is to prepare the land for irrigation and subsequent cropping or plantation. If a community fails to achieve the objective

and the land is not developed after the completion of the channel the programme reserves the right to proceed against the defaulting community. The government will recover the amount of investment carried out for the scheme. As a punitive action, such community will be blacklisted for any such work from any organization in future and the command area under discussion will be taken over by the government.

9.2 Farm to Market Roads:

Even though the world's highest paved road, the Karakoram Highway (KKH) connecting China with Pakistan at Khunjerab Pass (at an elevation of 4,693 meters) runs through GB for most part of its total length, the overall roads density is low compared to other regions and national average. In GB, the road density is the lowest about one-sixth of Pakistan's average and about one-half of road density for Balochistan province. Pakistan's road network is made up of 12,500 kilometers of national highways, 93,000 kilometers of provincial highways, and the rest are district or urban roads. Pakistan's road density is 0.31 kilometers per square kilometer.

Available road data and discussions with various line agencies give a rosy picture in terms of access as over 80% of villages located in all districts are reported to have some form of road connectivity. The level of connectivity however varies widely from metaled road to only 12 feet wide 4x4 jeep-able road. The remaining around 20% of unconnected villages are characterized by either one or a combination of factors including; thinly spread, or remotely located on much higher elevation, comprising very few houses etc. however, the main challenge is the connection of farmland to these valley roads as farm to market roads are almost nonexistent in the region due to which farmers are unable to bring the produce to market in time besides bearing a huge cost on the transportation.
Most of the villages in GB lie along many main valleys commencing from high altitude pasture areas and normally culminate at some main road at lower elevation along a major river. Across these main valleys there are inner-valleys, and their roads culminate on the main valley roads.

Type and Length of Existing Roads:

In GB, existing roads generally fall under two categories by type of construction; (i) Metaled (paved) roads and (ii) Shingle Roads. Each of these types is further classified into two sub-types based on its ride capacity:
(a) Truck-able, and (b) Jeep-able. Apart from the slope/gradient configuration, the main differences between two sub-types are the width and the gradient, which is 22.5 with minimum gradient of 1:15 feet for truck-able while 16.5 feet with gradient of 1:10 feet is provided for Jeep-able roads. Total length of roads in GB is estimated as 8565.47 km; of which only 31.2% are metaled, while remaining 68.8% (5, 887.61 km) are shingle roads. Of the shingle roads, most are accessible through 4x4 jeeps only with huge difference in cost of travel, time and comfort. The table below provides a summary of road lengths by type and by district.

Table 10: Road's length and type

S.No	District	Road Type (KM)		Bridges (no)
		Metaled Road	Shingle Road	
1	Gilgit	1057.7	1534	79
2	Diamer	130	935	120
3	Skardu	269	1287.5	53
4	Ghizer	253.5	678.25	87
5	Ghanche	404.8	466.36	64
6	Astore	318	310	95
7	Nagar	42.18	67.5	13
8	Hunza	51.68	216	40

9	Shigar	61	333	33
10	Kharmang	90	60	10
Total		**2677.86**	**5887.61**	**594**

Source GB Development Statistics P&DD 2022

The C&W Department is the designated government agency responsible for implementing construction of roads and carrying out maintenance. Apart from road sector (called Transport and Communication -T&C), the department is also responsible for construction and maintenance of three other sectors, (i) Area, Rural & Urban Development, (ii) Irrigation, and (iii) Physical Planning and Housing (PPH). However, the major chunk (60%) of development budget is spent in road sector, followed by 27% in PPH, 12% in area, rural & urban development while merely 0.5% in Irrigation sector.

ADP Funds Allocation and Utilization: About Rs. 5371 million is allocated to C&W Department under Annual Development Program (ADP) for FY 2024/25. In the last three years, on average, about 93% of allocated budget was released by the government. The funds utilization by C&D department appears quite good and stands at 97% against the released amount.

Rationale for FMR: The C&W department primarily focuses on constructing inter-district and valley roads, which serve as the major transportation arteries connecting various regions/districts. In contrast, ETI-GB concentrates on bridging the gap between farmlands and these main valley roads, providing vital access routes that enable farmers to transport their produce more efficiently to larger markets and hubs. This complementary approach ensures a more comprehensive and integrated road network, benefiting both regional connectivity and local agricultural communities. The FMR component is aimed at improving critical road linkage for the supported value chains for linking the production areas to valley roads and main roads. The sub-component will finance the upgrading of 700 km of jeepable roads. In addition, a lump sum provision of 220 meters of bridges would be made. Construction and completion of roads will be aligned with the potential of value chains and their development in various areas and land development under the irrigation component.

Scheme Selection Criteria for Farm-to-Market Roads (FMR)

- The scheme should be technically, socially, and environmentally feasible.
- No Objection Certificate (NoC) from the departments concerned is required.
- Availability of free Right of Way (RoW).
- No compensation will be paid for the land of RoW and any damage during construction.
- The community will submit NOC to work on agreed alignment after survey by ETI GB.
- For jeepable FMRs, the clear width should be at least 16.5 feet.
- For truckable FMRs, the clear width should be at least 22.5 feet.
- For jeepable roads, the command area should cover a minimum of 150 acres.
- For truckable roads, the command area should cover at least 500 acres and benefit more than 500 households.
- The length of the FMR should be proportionate to the command area.
- Demonstrate relative cost effectiveness in terms of larger impact (% irrigated area, number of beneficiary population/villages, % availability of farm produce to add value addition).
- The cost of investment should be worked out in accordance with the output of the value chain activity to ascertain the value is justified for the investment.
- No scheme will be undertaken which does not conform to the existing value chain development.

- The maximum cost limit for FMR schemes is Rs. 150.00 million.

FMR Scheme Ranking Criteria

- Connection to I&LD schemes with the main valley road.
- Priority should be given to leftover areas or valleys.
- Potential for value chain development in the area for existing land.
- Should have adequate farm produce for marketing as well as value addition.
- Priority will be given to FMR, s with a length of less than 05 kilometers.
- Focus should be on constructing new FMRs rather than widening existing roads.

GB Road Maintenance System:

In GB, maintaining a 6,764 km long road network represents a big challenge particularly when a large majority (76 %) roads are jeep-able/truck-able shingle roads. The difficult terrain, high altitudes, steep slopes, deep and narrow valleys, remoteness, harsh weather leading to shorter working span in a year (9 months), frequent land sliding and flash floods, all these factors contribute to make road maintenance challenging. Despite all these odds, C&W department has been reasonably efficient in maintaining its road network.

Maintenance Machinery Pools: Once all the road construction projects are completed, they will be officially handed over to the C&W department for ongoing management and maintenance. To support the effective operation and maintenance (O&M) of these roads, ETI-GB will provide the following machinery for each 10 districts:

- Wheel Excavators (10 Nos)
- Wheel Loaders (10 Nos)
- Compressors (10 Nos)
- Drill Machines (10 Nos)

This provision aims to ensure the longevity, safety, and usability of the constructed roads, enabling the C&W department to maintain them to a high standard and support the region's transportation needs effectively.

9.3 Value Chain Development:

ETI during the initial phase focused on two agriculture value chains, apricot and potato, however the scope of interventions was spread to other potential agri products after MTR. Through this component ETI established 162 Village agriculture Cooperative Societies who were provided with more than 20 business plan according to the potential of the respective areas. During the extension period focused will on the consolidation of these VAC in a bid to make them sustainable. Handholding and support will be provided through competitive grants as well as innovative means of access to Finance. A Partial Credit Guarantee scheme will be piloted to provide easy credits to the members of these VACs through a financial institution.

9.3.1 Apricot Value Chain: Pakistan is the 6th largest producer with a production of 174,546MT. While the total production of apricot of Gilgit Baltistan is 125184.08 MT. The production of apricots of Gilgit Baltistan constitutes 71.71 percent. The detailed sector analysis of apricot in Gilgit Baltistan is given below.

Apricot Production in GB: Apricot represents 67% of the fruit production and 52% land area cultivated under fruits in GB. Nearly 13,000 Ha are under apricot cultivation in a very scattered manner in the valleys of GB and accounts for an annual production of around 125,184 (2014) of fruits or 67 % of all fruits produced in the GB region. Though this production is not valued or

commercialized entirely, the total value of this production can be estimated at PKR 18,777.6 million or US $ 67.5 million at a minimal farm-gate price of PKRs 150/Kg. Out of the 10 major fruit crops in GB, apart from apricot, apple and cherry, all the other fruit crops are not regarded as commercial crop as they account for less than 10% production respectively. However with support to farmer production of walnut and almond can be increased substantially.

Table 11: Area and Production of fruit crops in Gilgit-Baltistan

Fruits	Fruit Bearing Trees	Non-Fruit Bearing trees	Total Trees	Area (Ha)	%	Production (T)	%
1.Apricot	1946068	1209734	3155802	12750	50.8	125184.08	64.9
2.Apple	826505	370117	1196622	4241	16.9	23331.98	12.1
3.Grapes	183043	120884	303927	1134	4.5	8378.76	4.3
4.Pears	68066	40648	108714	434	1.7	2718.79	1.4
5.Peaches	107800	41061	148861	529	2.1	3262	1.7
6.Pomegranate	137818	75746	213564	707	2.8	4539	2.4
7.Cherry	200214	155772	355986	1392	5.5	4085	2.1
8.Mulberry	212472	141723	354195	1324	5.3	11664	6.0
9.Walnut	249544	122973	372517	1416	5.6	7466	3.9
10. Almond	181262	123791	305053	1164	4.6	2361.5	1.2
Total	4112792	2402449	6515241	25091	100	192991.11	100

Post Harvest Losses: Despite the economic importance of apricot production in GB, it is reported that 30.03% of the production is lost at farm level, and this translates into an estimated loss of US$. This is a huge income loss for the producers in the rural sector and translates into a loss of around US$ 315.6 per household for the more than 200,000 smaller families engaged in apricot production. Apricot represents the second highest lost value crop after mulberry in the province due to which the total production of GB is not commercialized as fresh or value-added products. The total dried production is 14674.92 MT including all grades, out which 39.16 % is wasted. Likewise, the data of department shows that dried apricot marketed is 7480 MT, with average selling price of 250-300 PKR. This fetches a revenue of 7.48 million US$. Given all these factors, the apricot value chain has a high-income generation potential within the horticulture sector of GB.

Table 12: Postharvest losses of Fruits in GB

Fruits	Production (T)	Wastage (T)	% Losses
Apricot	125184.08	43729	34.9
Apple	23331.98	4013	17.2
Grapes	8378.76	1294	15.4
Pears	2718.79	502	18.5
Peaches	3262	809	24.8
Pomegranate	4539	785	17.3
Cherry	4085	252	6.2
Mulberry	11664	6475.27	55.5
Walnut	7466	61.98	0.8
Almond	2361.5	37.78	1.6
Total	57959.03	30.03%	

Source: GB Agri. Stat. 2014

Market for Apricots from GB: The market for GB apricot has several segments. These include: (i). Fresh and dried apricots for local consumption, (ii). Fresh fruit market in the region or down

country, (iii). Dried fruit market (value added) for exports and (iv). Market for kernel –seeds for oil and as dry-fruit. There is not much reliable data available on the quantities of these different markets. Some data collected by the IFAD team members suggests that the following percentages of apricots were marketed in 2012:

- Fresh fruits marketed 2,777 MT or 2.21% of the total production
- Dried fruits 12, 825 MT of dried or 64,125 MT of fresh representing 51.2% of the total Production

The above percentages suggest that 2.21% of the apricot production of the province is marketed at present within or outside the province. This percentage can be further increased by improving productivity of quality apricots, reducing post-harvest losses and promoting production of appropriate varieties. This confirms the huge potential of the sector to generate income which is yet to be exploited.

In addition, apricots are also considered as a food security crop in the region particularly during the long severe winters and also it is a health food. In addition, apricot is an ideal raw material for high value added products such as jams, jellies, candies, apricot seed oil (for cosmetic products and high value cooking oil) and these value added products offer some of the potential areas for new investments in apricot in the region. Apricot processing units also can process or dry other fruits such as cherries, walnuts, pine nuts etc available in the same districts which can increase the profitability of investments and returns for the farmers and other actors engaged in apricot value chain.

9.3.2 Apple Value Chain:

Apple has second highest production in Gilgit Baltistan. The total production of apple in Gilgit Baltistan is 23331.98 MT tons according to the data of Agriculture Extension. The apple of Gilgit Baltistan is known for its characteristic color, aroma and excellent taste including both indigenous and exotic varieties. The surveys of the department reveal that around 4013.72 tons of apple are wasted due to post-harvest losses constituting 17.20 % of the total production. The fresh consumption of apple represents 8520 tons locally while 10797 tons are apple is marketed both in local and national market in fresh condition. There are still huge potential to increase production and reduce postharvest losses of the fruit. With establishment of certified and improved fruit nurseries and supporting in establishment of commercial orchards, the production of fruit can be enhanced. Additionally, training of farmers in disease and pest management and post-harvest handling is also important aspects to ensure quality and sustainable supply.

Table 13: Region/ District wise Area and Production of Apple

Districts	Area (Ha.)	Production (MT)
Baltistan Region		
Skardu	489	2944
Shigar	280	1764
Ghanche	345	1865
Kharmang	280	1548
Sub Total		**8122**
Gilgit Region		
Nagar	357	2582
Hunza	485	3503
Gilgit	320	2455
Ghizer	358	2159
Sub Total		**10699**
Diamer Astore region		

Diamer	579	3207
Astore	249	1305
Sub Total		**4511**

For apples, the Baltistan Region, which includes Skardu, Shigar, Ghanche, and Kharmang, has a cultivated area of 1,394 Ha and produces 8,122 MT apples, with Skardu being the highest producer at 2,944 MT. The Gilgit Region, covering Nagar, Hunza, Gilgit, and Ghizer districts, has a slightly larger cultivated area of 1,520 Ha and yields 10,699 MT. Hunza and Nagar contribute significantly, producing 3,503 MT and 2,582 MT, respectively. While Diamer-Astore region comprises of District Diamer and Astore has total apple cultivable area of 828Ha from which produced 4511 MT of apples.

9.3.3 Cherry Value Chain:

In recent years cherry fruit has shown tremendous growth in terms of production and marketing. According to a survey, 2014, the total production of cherry trees in 2014 was 4085 MT. The recent production is estimated to be over 7, 000 MT. The post-harvest losses in cherry is significant low than other fruit due to high demand and fresh marketing. More than 70 % of total production of cherry is marketed in local and national markets. There is an increasing trend of cherry plantation and production is expected to significantly grow. In recent years the cherry from the region has started export to Chinese market. This has resulted in a substantial increase in the sale price of the fruit with an average sale price above 300 PKR per KG.

There is ample scope of further strengthening the cherry value chain through provision of improved planting material, establishment of commercial orchards, improved packaging, cool chain development and training of farmers.

Table :14 Region/District wise of Area & Production of Cherry

Districts	Area (Ha.)	Production (MT)
Baltistan region		
Skardu	56	231
Shigar	71	226
Ghanche	87	256
Kharmang	2	1
Sub Total		**714**
Gilgit Region		
Nagar	137	470
Hunza	159	705
Gilgit	258	1202
Ghizer	118	400
Sub Total		**2777**
Diamer Astore region		
Diamer	208	258
Astore	62	150
Sub Total	**1364**	**408**

Ref. Agri. Statistical Survey 2014, DoA GB

Cherries are primarily cultivated in all regions Gilgit, Baltistan, and Diamer-Astore. In the Baltistan Region (Skardu, Shigar, Ghanche, and Kharmang districts), the total cultivated area for cherry is 216 Ha, yielding 714 MT. Ghanche and Skardu are the top producers, contributing 256 MT and 231 MT, respectively. The Gilgit Region has a much larger cultivated area of 672 Ha and produces a significant 2,777 MT, with Gilgit district leading with 1,202 MT, followed by Hunza (705 MT). The Diamer-Astore Region, comprising Diamer and Astore districts, has an area of 270 Ha, producing 408 MT in total, with Diamer as the primary contributor at 258 MT.
The data collectively highlights Gilgit-Baltistan's diverse agricultural production, with the Baltistan Region excelling in apricots, the Gilgit Region leading in apples, and the Gilgit Region also contributing significantly to cherry production. This distribution reflects the agricultural potential and diversity of the region's districts.

9.3.4 Potato and other Vegetable Value Chain Development:

Potatoes Production in Gilgit Baltistan (GB) in Pakistan:

Table 15 below indicates the data on vegetable, cereals and fodder production area cultivated in 2009 in the GB province. Potatoes represent 46% of the production (134,000 MT) and 14 % of the farm land (21,213Ha) cultivated of the vegetables, cereals and fodder in GB. The updated data for 2014 is not available in detail and it is presumed the situation on the ground has not much changed since then. The potatoes are generally inter-cropped with other short-term crops.
The Value of the potatoes production will depend on the prices in the market. Farm gate prices could vary and in the recent past, it is reported that price fluctuations varied from PKR 200 to PKR 500 or more per KG. Assuming an average price of Rs 70 per KG at farm gate, GB's value of annual production of potatoes at PKR 70 per KG or KPR 70,000 Per MT, will amount to PKR 9,382-Mn or US$33.7Mn (at 278 PKR=I US$). Therefore, potatoes production brings significant value to the province, and it can be further increased through strategic assistance for the benefit of the agriculture population.

Table 15: Production of Vegetables and cereals crops in Gilgit-Baltistan.

Crop	Vegetables and Cereals/ fodder				
	Area - acres		Production - tons	%	Yield - kg/acre
Potato	21,313	14%	134,031	46%	6,289
Tomato	760	1%	6,455	2%	8,493
Peas	760	1%	2,121	1%	2,791
Capsicum	760	1%	977	0%	1,286
Onion	548	0%	5,381	2%	9,828
Others	668	0%	2,493	1%	3,735
Wheat	42,725	29%	36,835	13%	862
Maize	44,215	30%	47,010	16%	1,063
Barley	13,203	9%	10,123	3%	767
Buckwheat	2,420	2%	1,770	1%	731
Fodder	22,195	15%	42,478	15%	1,914
Total	**149,565**	**100%**	**289,674**	**100%**	

Productivity and Post Harvest Losses:

The yield in the production of potatoes in GB is estimated at about 6.2 MT per acre. This will be around 15 to 16 MT per hectare. This yield is not low compared with the national average which varies from 17MT per Ha to 21MT /Ha (FAO reports). However, there is still possibility of increasing these yields through further technical assistance and extension work in the value chain. Productivity can be further improved through providing access to quality certified seeds, best

cultivation practices, better input management and promotion of commercial farming instead of prevailing mixed crop cultivation.
The post-harvest losses in potatoes, unlike in other vegetables and fruit crops, are not significantly high. In the case of GB, the post-harvest losses are considered to be around 8%. Generally, in potatoes, post-harvest losses appear due to the absence of proper storage facilities, poor transport systems and duration of transport to end markets.

Table 16: Area, Production and Utilization of Cereals and vegetables in GB

District	Area (Ha.)	Seed Required (MT)	Production (MT)	Consumption (MT)	Marketed (MT)	Wastage (MT)
Gilgit	959	1,772	14,330	1,372	11,625	1,333
Hunza Nagar	3,267	6,112	48,285	4,260	41,047	2,978
Ghizer	714	1,346	11,024	1,481	8,591	951
Skardu	1,541	3,012	25,901	2,300	21,796	1,805
Ghanche	984	1,927	15,237	2,833	10,640	1,763
Astore	931	1,779	17,027	4,110	11,589	1,328
Diamer	129	246	2,227	1,276	632	319
Total	**8,526**	**16,193**	**134,031**	**17,632**	**105,921**	**10,479**

Opportunities and Growth prospects: The potatoes value chain in GB presents significant opportunities to generate increased income for producers/farmers, and an avenue for new investments in the region. The most important economic interest for this value chain is of basic seed of potatoes for own /provincial consumption for assured supply of quality seeds for enhanced production mainly by using already available tissue culture facilities and expertise in the province as well as supply to the national market. This can be achieved through introduction of best agriculture practices to increase yields and providing access to better promoting establishment of local input supply dealerships with private sector and farmers organizations for easy access to quality inputs.

9.3.5 Cereal and Vegetable Production:

Production of Tomato, Capsicum, Green Peas, Cucumber and Onion:

There is huge potential for vegetable production in Gilgit Baltistan. Due to unique agro-climatic condition and diversity, microclimates the region can fulfil the vegetable production of the region and even export to down country. The small holding and profitability over cereal crops are key factors of vegetable cultivation.

The production season of the season can be extended with support of green houses and tunnels farming. Vertical farming is the key solution and intervention to small landholding and increase productivity. Realizing the fact and leveraging the improved technology and practices, the programme supported vertical farming and tunnel farming. Over 7,000 members of VACs are supported with tunnel farms/vertical structures with inputs and capacity building. With area of over 2 Marla, farmer were able to get production of 400-800KG vegetable, where there used to get around 80 KG in conventional open field farming. Tomato and Cucumber were main crops in the tunnel, also producing leafing vegetables in the winter. The green peas in Gilgit Baltistan have seasonal advantage. The crop is usually available for market in May, when supply is very limited in the market. Farmers can obtain higher price by exploiting the market opportunity and seasonal window to supply in Rawalpindi/Islamabad and surrounding markets.

Cereal Production

The data from the Agriculture Department shows that 43089 MT of wheat is produced in Gilgit Baltistan annually. Likewise, the production of maize and barley is 43403 and 8533 MT respectively. Due to small landholding with an average of 0.6 Acres, the region is not feasible for cereal production. Another disadvantage to cereal crops is the low profitability over other crops. Nonetheless, these crops are important for food security and also important sources of fodder to the livestock. Barley gives a significantly high return comparatively. Therefore, besides for fodder requirement, it has emerged as a potential cash crop in many areas.

Indigenous Crops

The buckwheat has annual production of 1,770 MT . Due to immense medicinal value, its demand is growing. It has high potential in upper areas of Gilgit Baltistan. Due to its short duration in can be grown as a second crop, in single-crop zones also. The programe will focus to scale up the production through provision of improved seeds and the establishment of a processing facility with the Village Agriculture Cooperatives.

The region has huge potential of exploiting the naturals herbs and medicinal plants. The high value medicinal plants can be conserved, grown and marketed through improved technology and practices.

Alfa Alfa is one of the key fodder crop of the area. Due to its high adaptability is marginal lands, fertility enhancing properties and high nutritional fodder, it is widely grown in Gilgit Baltistan. The production of alfalfa is not sufficient to meet the fodder requirements of area. There is huge potential to scale up production to meet the fodder need.

Table 17: Yields and revenue generated in vegetables and cereals sectors in GB

Products	Yield MT/Ha	Price –Rs per maund	Per MT	Gross returns per ha-PKR
Wheat	2.16	3,000	75,000	162,000
Maize	2.66	2,800	70,000	186,200
Barley	1.87	4,800	120,000	224,400
Buckwheat	1.83	3,600	90,000	164,700
Cultivated Fodder	5.12	2,000	50,000	256,000
Potato	12.72	2,400	60,000	763,200
Tomato	20	2,800	70,000	1,400,000
Peas	3.16	8,000	200,000	632,000
Cabbage	13.18	4,000	100,000	1,318,000
Chinese Cabbage	17.06	4,800	120,000	2,047,200
Onion	22	3,200	80,000	1,760,000
Capsicum	8.72	4,000	100,000	872,000

10. Financial Plan and Mode of Financing:

10.1. Financial Plan Equity Information:

Total estimated cost of ETI is US$120.15 million. Out of this amount, IFAD is contributing through a highly concessionary loan of US$ 67.00 million or 56 % of the cost at 0.75% interest rate payable over 30-year period with 10 year grace period. Government of Pakistan will contribute 20 % or US$ 23.63 million through its annual bock allocations for Gilgit-Baltistan PSDP. Beneficiaries will contribute 5% or US$ 6.54 million in the shape of computed value of land for irrigation and roads right of way. The remaining financial gap of 19 % or US$ 22.98 million was to be met by co- financing obtained on terms similar to IFAD loan or less for which negotiations with potential co-financiers are

at an advanced stage. The Italian Agency for Development Cooperation (AICS) through financing agreement contributing US$ 21.12 million.

The financing plan and mode of financing remain unchanged though the amount of financing in terms of PKR has increased because of the appreciation of USD vis-à-vis PKR as stated earlier. The tables indicate the amount available, spent and the balance available as of 30 June 2021. Financier wise contribution is presented in the following table.

Table 18 Financier Contribution in USD (millions) As of September 2022

Financier	Original Financing	Expenditure as of 30th Sep 2022	Balance	Per Cent Actual Exp.
IFAD Loan	67	47.86	19.14	71.43%
Co-Financier	22.98	0	22.98	0.00%
Government	23.63	8.33	15.3	35.25%
Beneficiaries	6.54	19.83	-13.29	303.21%
Grand Total	**120.15**	**76.02**	**44.13**	**63.27%**

Table 19 Financier Contribution in USD and Expenditure as of April 2024

Financier	Overall Budget	Actual Expenditure	Balance/ Forecast	Per Cent Actual Exp.
IFAD Loan	67,000,000	52,189,436	14,810,564	77.89%
AICS	21,115,000	-	21,115,000	0.00%
Government	23,630,000	9,427,283	14,202,717	39.90%
Sub Total	**111,745,000.00**	**61,616,719**	**50,128,281**	**55.14%**
Beneficiaries	6,540,000	19,829,819	2,150,000	303.21%
Total	**118,285,000.00**	**81,446,538**	**52,278,281**	**68.86%**

* Originally beneficiary contribution in kind was calculated at USD 6.54 million, however, this contribution has increased to over USD 19 million due to the revision of land award rates by the Govt of GB and this is expected to increase further by the completion of the project. AICS also contributed USD 21.12 million through a financing agreement instead of USD 22.98 million. This decreased the overall financing by USD 1.86 million making it USD 118.285 million.

Table 20 Financier Contribution in USD and Expenditure (in PKR Million)

Financier	Original Financing	Expenditure	Balance
IFAD Loan	6,867.50	8,099.85	-1,232.35
Co-Financier	2,355.45	-	2,355.45
Government	2,422.08	1,420.72	1,001.36
Sub Total	**11,645.03**	**9,520.57**	**2,124.46**
Beneficiaries	670.35	3,294.98	-2,624.63
Total	**12,315.38**	**12,815.55**	**-500.17**

10.2. Financial Plan Debt Information:

ETI will be financed through a highly concessionary loan from International Fund for Agriculture Development (IFAD), a co-financier, Government of Pakistan and beneficiaries. An amount of US$ 67 million has been made available by IFAD in its Country Programme Cycle for Pakistan. The

interest rate for this loan will be 0.75% per annum and the loan will be payable over a 30-year period with 10-year grace period. An additional loan of US$ 21.12 million has been actualized by AICS on better terms and conditions as of IFAD loan. Government will contribute US$ 23.63 million or 20% as its share to finance taxes, salaries, and part of operational costs. Beneficiaries have contributed US$ 21.97 million largely in the shape of Right of way and land for irrigation infrastructure in the 1st phase and will contribute to Extension period.

The total cost of the project—at design and per PC-1 was PKR 12,315.375 which has increased to PKR 27,362.13 million because of the appreciation of USD. However, the cost of components/sub-components has changed during implementation. The table shows the amounts of financing as per the original PC-1 and the revised PC-1:

Table 21 Component-wise Revised Budget in PKR (millions)

Financier	Original Financing	Revised Proposed	Allocation May 2024-2028
Component 1	7,486.60	16,966.68	9,480.16
Component 2	3,780.20	7,933.32	3,652.94
Component 3	1,048.58	2,462.13	1,413.48
TOTAL	**12,315.38**	**27,362.13**	**14,546.58**

10.3. Financial Plan Grant Information:

The proposed phasing of sources and uses of funds over the remaining years of the project life are adequate to sustain the project activities. The project has been able to spend the amounts released so far which demonstrates strong ability to implement the funds unspent due to the appreciation of US$ against the PKR.

Table 22 Summary of funds released and utilized till 30 Sep 2022 (PKR Million)

Financial Year	RELEASES			EXPENDITURE		
	IFAD	GoGB	Total	IFAD	GoGB	Total
2015-16	-	43.65	43.65	33.57	10.09	**43.65**
2016-17	400.17	200	600.17	186.9	109.04	**295.94**
2017-18	809.25	168	977.25	683.29	165.93	**849.22**
2018-19	1,501.90	99.99	1,601.88	1,351.82	210.24	**1,562.06**
2019-20	1,602.55	212.7	1,815.25	1,395.88	213.98	**1,609.86**
2020-21	669.16	218.93	888.09	1,002.14	220.43	**1,222.58**
2021-22	2,073.73	166.03	2,239.76	2,000.53	174.71	**2,175.25**
2021-22	676.68	47.34	724.01	410.29	49	**459.28**
2022-23	**7,733.44**	**1,156.64**	**8,890.06**	**7,064.42**	**1,153.42**	**8,217.84**

Table 23 Summary of funds released and utilized till 30 Sep 2022 (USD Million)

Financial Year	RELEASES			EXPENDITURE		
	IFAD	GoGB	Total	IFAD	GoGB	Total
2015-16	-	0.42	**0.42**	0.32	0.1	**0.42**
2016-17	3.82	1.91	**5.73**	1.92	1.04	**2.96**
2017-18	7.22	1.57	**8.79**	6.15	1.48	**7.64**
2018-19	11.04	0.59	**11.63**	10.61	1.55	**12.15**
2019-20	10.1	1.2	**11.3**	9.07	1.44	**10.51**
2020-21	4.21	1.14	**5.35**	6.22	1.39	**7.61**

2021-22	11.42	1.31	**12.73**	11.63	1.13	**12.75**
2022-23	3.08	0.22	**3.3**	1.94	0.23	**2.17**
	50.89	**8.36**	**59.25**	**47.86**	**8.36**	**56.21**

Table 24 Annual Financial Phasing (USD Million)

Sub-Components	*Revised Allocation $*	*Expenditure as of April 2024 ($)*	*Budget Allocation from May 2024 onward ($)*	*2024-25*	*2025-26*	*2026-27*	*2027-2028*
1.1 Irrigation & Land Development	37.09	21.5	15.59	*3.12*	*4.68*	*4.68*	*3.11*
1.2. Farm to Market roads	28.94	11.49	17.69	*3.78*	*5.06*	*5.31*	*3.54*
Subtotal Productive Infrastructure	**66.27**	**33**	**33.28**	***6.90***	***9.74***	***9.99***	***6.65***
B. Value Chain Development				**-**	**-**	**-**	**-**
2.1. Value Chain Fund	21.23	14.18	7.05	*1.4*	*2.12*	*2.12*	*1.41*
2.2. Social Mobilization	2.42	2.42	-	-	-	-	-
2.3. Agri Extension	3.12	1.91	1.20	*0.24*	*0.36*	*0.36*	*0.24*
2.4. Agri Research	1.88	0.86	1.02	*0.20*	*0.31*	*0.31*	*0.20*
2.5. Land Titling & Record system	2.59	0.09	2.50	*0.50*	*0.75*	*0.75*	*0.50*
Subtotal Value Chain Development	**31.24**	**19.47**	**11.77**	***2.34***	***3.54***	***3.54***	***2.35***
3. Programme Management & Policy Support	14.23	9.15	5.08	*1.02*	*1.52*	*1.52*	*1.02*
Sub Total	**111.75**	**61.62**	**50.13**	***10.26***	***14.80***	***15.05***	***10.02***
Beneficiary	6.54	19.82	2.15	*0.54*	*0.54*	*0.54*	*0.54*
Total	**118.29**	**81.44**	**52.28**	***10.80***	***15.34***	***15.59***	***10.56***

10.4 Weight Cost of Capital Information

N/A

11. Project Benefits and Analysis:

Different sets of analyses were undertaken for which crop budgets were used as a basis and aggregated at the project level and according to the type of interventions. For both WP and WOP scenarios, the same assumptions were used while calculating net benefits. The incremental benefits under the existing cropping patterns were worked on per per-acre basis and then developed into a farm household model which represents the same cropping pattern. Similarly, for the newly developed lands, incremental benefits were determined assuming that farmers would adopt the same cropping pattern and improved practices. Household level benefits and aggregation: The cropping pattern for each household was worked out under the WP and WOP scenarios and then aggregated at the project level accounting for the number of households to benefit from the project interventions.

11.1 Financial Benefits:

About 100,000 smallholder households, landless households with unemployed youth and women-headed households would be direct beneficiaries of programme interventions. Another 10,000 smallholders, daily wage workers, artisans, masons etc. will also derive direct and indirect benefits from programme interventions. Around 100 processors, value adders and other service providers along the value chain shall also benefit. The main benefits will be derived from:

- An additional 70,000 acres of newly irrigated land, increasing the local irrigated area by around 40%.
- 700 km of roads will be improved, reducing transportation costs and enabling farmers to transport more quantities with better quality
- About US$ 25 million is injected into the rural economy through labour payments for irrigation development of which around US$ 23 million shall be recovered and reinvested in the same villages for socio-economic development- in addition to labour employment generated in upgrading roads and food processing
- A range of capacity building and local processing, storage and value-addition facilities supporting a minimum of 250 Village Agriculture Cooperative Societies (VACs).
- Sustainable, market-oriented improvements in potato seeds and fruit plant production, processing and marketing systems.
- Capacity building of WM&ID, Agriculture Extension and Agriculture Research, Board of Revenue and Department of Cooperative for better service delivery commensurate with the status of a provincial agency.
- Policy formulation and reform in critical areas of water management, roads O&M, land records and titling to ensure improved service delivery, better governance and sustainability.

ETI will generate economic benefits for different stakeholders according to the activity they are engaged in and the nature of the project intervention. The benefits that would accrue to various project beneficiaries would be either incremental or additional. In the case of value chain development activities, benefits will accrue to existing farmers through increased productivity, better quality produce, reduced losses and better prices. These would be the result of technical assistance and grants to value chain actors. ETI would assist farmers through skills enhancement in technical and managerial aspects, technological improvements, linkages development with supply chains including forward contracting, improving consolidation infrastructure and better pre-harvest and post-harvest management. The project will also encourage economies of scale through group procurement and joint marketing. In addition, the Project would support the upgrading of the rural road network to reduce transportation costs and hence enhance the competitiveness of farmers and establish market linkages. In the case of improved access to the market (through better rural roads) benefits would be in the form of lower marketing costs, reduced losses and increased volumes marketed. The irrigation infrastructure would enable farmers to produce additional volumes of agricultural produce, strengthening commercialization of value chains.

11.1.1. Financial Analysis:

Method and Approach: The ETI-GB will create an impact in the form of increased income through value chain development. At the beneficiaries' level, the project interventions will generate positive benefits in the current farming and new areas brought under cultivation. Financial analysis of the project has been conducted taking into account the likely impact of the project on the value chain operators notably farmers and aggregators. The financial analysis has been based on the existing cropping pattern for the value chain development activities as well as the new land developed under the project. For the road component, analysis takes into account the implicit benefit that would accrue to the population of the target district in the form of reduced transportation cost, reduced losses to produce that are marketed and time saving. The financial impact has been estimated and compared as “With Project-WP” and “Without Project – WOP” scenarios. The WOP scenario is the income stream during the base year while the WP scenario is the income stream during the project year-1 and afterwards.

Table 25 Value Chain Products income per household

Sr #	Value Chain	Without Project Income Household (PKR)	With Project Income Per Household (PKR)	Land Size
1	Vertical Farming	190	46,920	2.6 marlas
2	Red Bean	7,275	8,100	01 Kanal
3	Peas	5,550	22,950	1.5 kanal
4	Carrot	5,760	14,260	1 Kanal
5	Okra	2,340	13,800	1 kanal
6	Garlic	7,440	19,200	1 kanal
7	Turnip	6,360	15,600	1 kanal
8	Capsicum	6,805	26,650	1 Kanal
9	Onion	17,832	91,400	1 kanal
10	Tomato	12,320	39,030	1 kanal
11	Cucumber	6,160	34,530	1 Kanal
12	Red Chilli	37,796	90,850	1 kanal
13	Apricot	34,750	63,475	15 trees
14	Apple	37,000	74,000	24 trees
15	Cherry	26,520	43,250	12 trees

The changes in income streams are assessed concerning the project interventions taking into consideration project phasing. The Cropping Pattern and Phasing: Several cereal crops, fruit and vegetables are produced in the province. The cropping pattern of fruit in GB is given in the following.

Table 26: Cropping pattern of fruits

Fruits	Fruit Bearing Trees	Non-Fruit Bearing trees	Total Trees	Area (Acres)	Production T	Plant density	Yield/ plant - kg
Apricot	1,876,116	1,095,819	2,971,935	12,921	114,286	19.81	60.9
Apple	566,088	330,413	896,500	3,898	19,539	5.98	34.5
Grapes	193,237	77,511	270,748	1,177	5,710	1.80	29.5
Cherry	174,685	124,767	299,452	1,302	2,386	2.00	13.7
Mulberry	194,640	113,484	308,124	1,355	9,617	2.05	49.4
Almond	147,928	125,209	273,137	1,188	1,629	1.82	11.0
Pomegranate	121,363	67,370	188,733	821	3,991	1.26	32.9
Peaches	95,541	23,921	119,462	519	3,204	0.80	33.5
Pears	58,207	34,359	92,566	402	2,434	0.62	41.8
Walnut	225,292	103,307	328,599	1,429	6,577	2.19	29.2
Total	3,653,098	2,096,158	5,749,257	25,012	169,373	38.33	

Source: Agriculture Department, GB

The cropping pattern of cereal crops and vegetables produced in GB is given in the following

Table 27: Cereals and Vegetable Production in GB

Fruits	Area	Ann. Production (000 Tons)	Yield - Kg/ Acre	% of Area
Potato	21,313	134,031	6,289	17%

Tomato	760	6,455	8,493	1%
Peas	1,678	2,121	1,264	1%
Onion	548	5,381	9,828	0%
Capsicum	278	977	3,521	0%
Other Vegetables	668	2,493	3,735	1%
Wheat	42,725	36,835	862	33%
Barley	13,203	10,123	767	10%
Maize	44,215	47,010	1,063	35%
Buckwheat	2,420	1,770	731	2%
Fodders	22,195	42,478	1,914	
	150,000	289,674		

Source: Agriculture Department, GB

A total of 70,000 acres of new land will be brought under cultivation under the ETI programme through the development of irrigation infrastructure and land development in ten districts of GB. The irrigation infrastructure and subsequent land development will be undertaken in phases. The following table 24 shows phasing of land development.

Table 28: Physical Phasing of New Land Brought Under Cultivation in target Districts

Period	Core 4 Districts	All 10 Districts
Year-1		
Year-2		
Year-3		
Year-4	10%	
Year-5	30%	
Year-6	30%	
Year-7	20%	
Year-8	10%	
Year-9		10%
Year-10		10%
Year-11		20%
Year-12		40%
Year-13		20%
Total	100%	100%

The programme will upgrade rural roads in ten target districts. Two kinds of up-gradation will carry out i.e. (i) up-gradation of tracks into jeep-able status; and, (ii) up-gradation of jeep-able roads to truck-able status.

Key Parameters:

To undertake a financial analysis of the ETI, the following parameters have been used:

1. **Incremental benefits:** The financial analysis is carried out by working out the incremental benefits by comparing without project to with project scenario. Two sets of incremental benefits are considered in the analysis, i.e. those accrued in the existing area as a result of the value chain development activities, those emerging from the new area brought under cultivation and those

resulting from the improved road access.

Crop Intensity: Given the cropping zone constraints, crop intensity is assumed to be 150% concerning cereal and vegetable production. Fruit trees are in the form of scattered plantations having a very low plant density and it is likely that the same practice will continue.

2. **Phasing of Benefits:** The financial analysis assumes incremental benefits over the life of the project (13 years) and for eight subsequent years after the project completion. Phasing of new fruit plantations assumes full benefit at the ninth year of the plantation while benefits from vegetables will be at the current level after three years while growing on the newly developed land. Benefits from the existing fruit plantation are assumed to increase as a result of an increase in yields (resulting from an increase in productivity and reduction in losses) and an increase in prices (as a result of quality improvement). Such increase is more pronounced in the apricot, cherry, apple, tunnel farming, open fields vegetable production such as red beans, onion, garlic, capsicum, peas, carrot and other high-value crops along with seed potato value chains as these would be focused during the extension period. The total improvement in yield modelled is 25% in the case of potatoes and 30% in the case of apricots over the project life. Other crops are assumed to witness yield increases of up to 15-25% over the project life.

Key Assumptions:

The following are the key assumptions used in the financial analysis of ETI.

- **a.** Financial Prices: The financial prices of inputs and products used in the analysis were gathered from local markets in GB, at the farm and in consultation with stakeholders, including government departments. The data on wage rates was obtained from farmers, enterprises and government line departments. In addition, inputs required in farming such as seed, fruit plants, fertilizers, pesticides, machinery use, transportation and farm gate prices of outputs were obtained from farmers in different valleys. The average prices of 2014 have been used in the financial analysis.
- **b.** Wage Rates: Much of the increased labour requirement will be met from the family labour however the prevailing wage rates in the area are used in the financial analysis. Instead of wage earning as part of farming, the household benefits are worked out in the form of net benefits from the farming activities rather than wages. However, in the case of labour opportunities created in infrastructure development, road construction and land development the ongoing wage rate (PKR. 1200/day) is considered in the analysis.
- **c.** Opportunity Cost of Capital: The opportunity cost of capital of 13% is used in the financial analysis.
- **d.** Benefits of rural roads: rural roads are expected to generate benefits for the rural population in terms of reduced transportation costs, time-saving and reduction in losses. Since no traffic studies have been conducted, the analysis takes into account benefits to the end users rather than transporters in this analysis. Both inward and outward good transportation are taken into consideration and at the same level. In addition, it is assumed that 50% of the losses will be reduced and the resulting product will be marketed.

11.1.2. Financial returns: Based on the crop budgets, financial returns were worked on a per-acre basis for all the crops that are part of the existing cropping pattern. The incremental benefits were assumed to be higher in the case of targeted value chains of apricots and potatoes compared to other value chains. The financial analysis using benefits to the farm households and other value chain actors exhibits the feasibility of the proposed project, its scope and targets. Through the project, an incremental increase in the income of rural households is expected to a significant extent. In addition to increased income, there will be increased labour opportunities through the project-supported activities. The increased labour work can easily be accommodated given the current level of engagement of family labour. The financial return per household as a result of the project is estimated

at USD. 321/household in the case of the value chain development component, ranging from USD305 – 719/household in the case of irrigation and new land development intervention and ranging between USD 13 to USD 201 in the case of rural roads up-gradation component. From the point of view of the financial benefits to beneficiary households, the project intervention is attractive.

11.1.3. Financial Rate of Return: The analysis of ETI shows the Financial Internal Rate of Return (FIRR) at 38.41%. At the component level, the FIRR for the value chain development component is 45.76%, that of irrigation and land development at 36.07% and of road up-gradation at 32.97%. The Net Present Value (NPV) of ETI was noted to be USD 132.99 million. This shows the investment is feasible at the project level.

11.1.4. Sensitivity Analysis – Financial: The sensitivity analysis was carried out under different project scenarios. The FIRR was reduced from 38.41% to 20.28% in case the project benefits are delayed by three years. Moreover, when project benefits are decreased by 20%, the FIRR reduces to 32.19%, reduced to 33.27% if project costs are enhanced by 20%, reduces to 27.48% in case project costs increase by 20% and benefits are reduced by 20%. In case of project benefit being delayed by five years, FIRR reduces to 14.08%. The sensitivity analysis shows that the project investment will remain feasible even if conditions change as assumed. Interest Rate in Pakistan averaged 12.48 percent from 1992 until 2015 (Source: www.tradingeconomies.com/ State Bank of Pakistan).

11.2 Social benefits:

ETI will be implemented through a community-centered participatory approach with gender and poverty aspects mainstreamed in all aspects of programme planning and implementation. The main social benefits envisaged under ETI are as follows:

- **a.** The programme will establish a minimum of 250 village agriculture cooperative societies. Women will be encouraged to be members of all organizations and their management bodies while 20 exclusive women producer groups will be also established. Around 30% of all organization members are expected to be women.
- **b.** The poorest and women-headed households will be exempted from the 50% payback.
- **c.** Youth will be given particular attention by creating employment opportunities and engaging in income-generating activities.
- **d.** Nutrition awareness and training will be an important part of community mobilization and organization activities to reduce malnutrition and stunting by 15% by the end of the programme period
- **e.** 45,000 households will come out of poverty by the programme's end
- **f.** 50% of households and value chain operators in target districts will have increased their agriculture income by 25% leading to improved living standards and access to social services.

11.3 Additional Benefits: The project will work with relevant institutions in the public sector (Water Management & Irrigation Department-WM&ID, C&W Department , Agriculture Research, Agriculture Extension, Board of Revenue, Department of Cooperative and Gilgit Baltistan Rural Support Programme (Formerly Diamer Poverty Alleviation Programme-DPAP), private sector institutions and civil society organization. The project will create capacity within the provincial government and its institutions concerning value chain development, and project management and will upgrade the infrastructure of selected institutions. The project will encourage mainstreaming of participatory development approaches in government decision-making, participatory monitoring and capacity for social mobilization. The proposed activities will generate additional employment (mainly daily-wage labour) opportunities primarily for the rural unskilled labour in the value chains, irrigation infrastructure, rural roads' up-gradation and land development. The direct transfer of cash

and increased incomes would contribute to poverty reduction and enable them to invest in farming and other rural enterprises

- **Employment generation (direct and indirect):** ETI will adopt a participatory and labor-intensive approach to ensure the generation of maximum local employment generation activities. The direct and indirect employment generation due to ETI investments is estimated to be 6.948 million people/days during thirteen years of implementation with the following breakup:
- **Irrigation and Land Development:** 3 million person/days of skilled and unskilled wage opportunities during the construction of irrigation channels and land development equivalent to 70,000 acres.
- **Roads:** 3.6 million persons/days of skilled and unskilled wage labour opportunities will be created during the construction of 700 km of roads and 300 meters of bridges.
- **Value Chain Development:** 348,000 person/days of wage labour opportunities will be created under the value chain development component including harvesting, hauling, sorting/grading, packaging, processing, transportation etc.
- **Others:** ETI will also create several long-term employment opportunities for the educated and skilled men and women in the GB region in the shape of incremental staff for the line departments, Value Chain Technical Assistance Team and PCU and RCUs' staff. Total number of such staff would be 256 with around 60% technical staff and 40% support staff.

11.4. Environmental impact:

The potential environmental challenges and risks for ETI Programme implementation can be summarized as follows:

- **a.** There is insufficient detail and data on climate change challenges and risks in the Programme area
- **b.** Development of a large new irrigated area of 70,000 acres would lead to extraction of water at the cost of lower riparian's
- **c.** Flood irrigation practices in large new areas may lead to soil run-off and land deterioration
- **d.** Destabilization of slopes due to New Construction:
- **e.** Vulnerability of New Irrigation infrastructure to Flashfloods/Glacier Movement:
- **f.** High intensity/market-led Agriculture leading to the use of harmful chemicals and pesticides:

11.4.1. Features Built-in Programme Design to Address Risks: Several safeguards have been built in the design and programme approach to mitigate/address the identified social and environmental risks. These features are:

The total extraction of water for 70,000 acres of new land will be no more than 0.8 MAF during the year. This is a minuscule proportion of the 103 MAF system flow calculated in the Provincial Water Accord (1991) of Pakistan. That too for an area which is now giving up on thousands of hectares of land for the construction of the new Diamer-Bhasha Dam that would be the largest water reservoir for down-strem irrigation users in Pakistan.

Provincial Government will be supported to develop and adopt a provincial water policy covering issues of water allocation rights, water usage including water efficiency, water user fees and management, irrigation schemes management etc. The policy will also cover the introduction and gradual adoption of efficient irrigation practices and help the government funnel resources and manpower for the introduction and implementation of water-efficient practices and technologies.

Appropriate safeguard features will be built in the design and construction of the irrigation channels and roads along the slopes, including support structures like breast walls, retaining walls, use of

HDP pipes in unstable zones, cross drainage etc. to reduce to minimum the possibilities of destabilizing the slopes and starting any slides. The engagement of independent consultants for irrigation and roads will ensure quality designs and construction.
Irrigation off-take structures will be designed to mitigate the effects of flash floods and glacial movement. Where appropriate, flexible structures, instead of rigid structures, will be provided to enable the community to adjust them each watering season as per ground conditions.
GB is traditionally an area known for organic production and that's where it gets the most premium for its products. Programme will build on this strength and provide support to local marketing companies and groups of producers to obtain organic certification through adoption of full organic practices and thereby minimizing the chances of resort to chemical fertilizers and pesticides.

11.4.2. Programme Environmental Category: Based on the foregoing, ETI Programme is fit to be assigned a category "B" status as per IFAD ESRN Guidelines. No additional study in this regard is required at this stage. During implementation the IFAD Social and Environmental assessment procedures has been customized and adopted to undertake initial environmental and social assessment of the individual schemes.

11.5 Clean Development Mechanism

CDM does not apply to the ETI project as it does not guarantee carbon credit in lieu of the plantations and vegetation cover that is the after consequence of the project. However, given the scale of the interventions in bringing new lands under irrigation as well as safeguarding interest of the small land holders through increase in their land holdings as well as agricultural income it exhibits a perfect example of climate responsive public investment.

The programme aims to harness gravity flow water to bring in 70000 acres of land under irrigation which almost make up one third of the arable land of the region. Through development of agricultural value chain and investing in agri business and consolidating them through legal entities of Village Agricultural Cooperative Societies it provides safeguard against the negative impacts of climate change to small farmers. It also serves as a migrative measure against the climate change as the programme caters for human development through capacity building and training sessions. Though these measures members farmers become well aware of the consequences of the hazards associated with climate change and provide them with the knowledge and capability to cope with it.

11.6 Economic Analysis:

Method and Approach: Owing to the diversity of the project components, different methods are used to do the economic analysis. The major economic benefits that will ensue to the project beneficiaries are those entailed in the three major interventions i.e. new land development as a result of developing irrigation infrastructure, up-gradation of rural roads and value chain development. In addition to economic benefit at the beneficiary's level, the project envisages capacity building and institutional strengthening impacts. The economic analysis uses the export and import parity prices worked out for all the major inputs and outputs. The analysis also uses a shadow wage rate factor of 0.6 for unskilled which gives a shadow wage rate of PKR. 1,200 per day. The net present value (NPV) and economic internal rates of return (EIRR) have been worked out using a discount rate of 12% and a benefit span of 34 years including 13 years of the project implementation period.

Key Assumptions: The benefit of the ETI is expected under the three project components. These include (i) value chain development; (ii) irrigation infrastructure and land development; and, (iii) improving market access through up-gradation of rural roads. The project will also strengthen the institutional capacity of the departments concerned, which will enable them to provide services to the value chain and implement development projects more effectively as an indirect benefit of the

project. While these are to some degree considered in farm budgeting, these indirect benefits of institutional capacity building are not comprehensively included in the economic analysis. Moreover, there would be additional social benefits of the program which are not included in the analysis as well. The major components and relevant economic benefits are briefly discussed in the following paragraphs.

Value Chain Development: ETI will assist in value chain development with a focus on two value chains (apricot and potatoes) and other value chains subsequently targeted from MTR onwards. The target areas under the value chain development component are all seven districts in GB. The economic benefits are expected to be generated as a result of the project efforts to promote more optimal use of input, better practices, value addition and alternative (joint) ways of marketing and acquisition of inputs. Benefits that will be generated from this component include increased productivity, reduced losses and increased prices.

Irrigation infrastructure and land development: The project will undertake the development of 70,000 acres of additional land by providing irrigation infrastructure and assistance for land development. A total of 1 acre of new land area will be available to beneficiary households for cultivation. The new land area will enable farmers to produce additional crops and fruit and will enhance family income. This component includes the recurrent cost of O&M which will be met and arranged through the 50% cost recovery planned to be undertaken by the communities benefiting from the schemes. For land developed an average of PKR. 27,070 will be generated in three years (PKR. 9,690 per crop or year).

Improved Market Access through Road Upgradation: The economic analysis for road up-gradation will adopt the indirect benefit analysis approach as there is no credible data available on the traffic volumes, and vehicle operating costs. The benefits included in the analysis include; (i) reduced transportation cost of produce from and to the project areas; (ii) reduced losses; and, (iii) time-saving. Other social benefits such as access to education, health and other services are not included in the analysis. The following are the key assumptions used in the economic analysis:

(a) Road Situation: The project intervention will upgrade two types of roads i.e. tracks and jeep-able roads. Tracks will be widened, and their surfaces will be improved to make these fit for using jeeps whereas jeep-able roads will be widened and their surfaces will be improved to make these truck-able. A total of 700 km of new roads will be constructed as well as 300 meters of bridges. The conditions of these roads need up-gradation that will result in reduced transportation costs, reduced losses and saved time.

(b) Transportation Cost: The current cost of transportation in the area where road up-gradation will take place will be reduced substantially by half of the cost of goods transported.

(c) Reduction in Losses: In most cases losses are due to poor road access to markets and thus perishable products do not reach the market. Because of this, farmers usually do not market a significant quantity leaving it to be wasted at the farms. Due to improved access, 50% of the current level of wastage will be channelled to the market generating additional revenues for the farm households.

(d) Time-Saving: The up-gradation of rural roads will result in time savings of more than 50%. The analysis assumes that 30% of the population would be travelling 15 times per year, and would realize savings of 5 hours per trip (worked out based on PKR. 1,200/day which is the ongoing daily wage rate).

Economic Benefits: The economic benefits to the households of the ETI project are attractive. The economic benefits of value chain development are estimated at USD235.79 per household on average and for the irrigation and land development component in the range of USD279.75 and USD859.23 being lower in the first year and increasing subsequently. In the case of the rural road up-gradation component, the average estimated economic benefit per beneficiary household ranges

between USD12.99 and USD215.81/beneficiary household. Given the level of economic benefit to each household, the proposed programme seems feasible and an economically viable investment.

Economic Rate of Return: The overall Economic Internal Rate of Return (EIRR) of the project was originally estimated at 30.47% for the base case. Based on the calculations in Table 19 the component-wise EIRR for the revised project are: (i) 16.78% for the value chain development component; (ii) 38.07% for the irrigation and new land development; and (iii) 34.57% for the road up-gradation component. The present net value (NPV) of the programme's net benefit stream, discounted at 13%, was noted to be PKR. 89.77 million.

Table 29: Economic Rate of Return

Year	A: Project Cost	B: O & M Costs	C: Total Cost	Total Benefits	Net benefits/ (deficit)
2015-16	37.98		37.98		(37.98)
2016-17	257.47		257.47		(257.47)
2017-18	738.82		738.82		(738.82)
2018-19	1,358.99		1,358.99		(1,358.99)
2019-20	1,400.58		1,400.58		(1,400.58)
2020-21	1,063.64		1,063.64		(1,063.64)
2021-22	1,892.47		1,892.47		(1,892.47)
2021-22	399.57		399.57		(399.57)
2022-23	2,000.00		2,000.00		(2,000.00)
2023-24	2,000.00		2,000.00		(2,000.00)
2024-25	3,033.76		3,033.76		(3,033.76)
2025-26	4,854.02		4,854.02		(4,854.02)
2026-27	2,427.01		2,427.01		(2,427.01)
2027-28	1,431.37		1,431.37		(1,431.37)
2028-29	388.89	7,132.49	7,521.38	7,508.13	(13.25)
2029-30	0	7,132.49	7,132.49	10,511.38	3,378.89
2030-31	0	7,132.49	7,132.49	15,016.26	7,883.77
2031-32	0	7,132.49	7,132.49	15,016.26	7,883.77
2032-33	0	7,132.49	7,132.49	15,016.26	7,883.77
2033-34	0	7,132.49	7,132.49	15,016.26	7,883.77
2034-35	0	7,132.49	7,132.49	15,016.26	7,883.77
2035-36	0	7,132.49	7,132.49	15,016.26	7,883.77
2036-37	0	7,132.49	7,132.49	15,016.26	7,883.77
2037-38	0	7,132.49	7,132.49	15,016.26	7,883.77
2038-39	0	7,132.49	7,132.49	15,016.26	7,883.77
2039-40	0	7,132.49	7,132.49	15,016.26	7,883.77
2040-41	0	7,132.49	7,132.49	15,016.26	7,883.77
2041-42	0	7,132.49	7,132.49	15,016.26	7,883.77
2042-43	0	7,132.49	7,132.49	15,016.26	7,883.77
2043-44	0	7,132.49	7,132.49	15,016.26	7,883.77
2044-45	0	7,132.49	7,132.49	15,016.26	7,883.77
2045-46	0	7,132.49	7,132.49	15,016.26	7,883.77
2047-48	0	7,132.49	7,132.49	15,016.26	7,883.77
2049-50	0	7,132.49	7,132.49	15,016.26	7,883.77

	23,284.58	**114,119.92**	**165,934.47**	**228,247.15**	**122,377.72**

Sensitivity Analysis: The sensitivity analysis was undertaken, assuming different scenarios and their likely impact on the overall effect on the economic viability of the project. The result of the analysis indicates that a delay in the programme implementation by three years reduced the EIRR by nearly half (from 30.47% to 16.19%). The reduction of incremental benefits by 20% reduces the EIRR to 25.28% while the increase in cost by 20% will reduce the EIRR to 26.18%. An increase in total programme costs by 20% and a simultaneous decrease of 20% in economic benefits would reduce EIRR to 21.18%. The sensitivity analysis shows that the programme investment will remain viable in the assumed scenarios.

The analysis of economic benefits and costs undertaken at various discount rates shows that the project is feasible at a discount rate of up to 30%. The NPV becomes negative at a discount rate of 31%. However, it is very unlikely that the discount rate will go as high as 31%.

Table 30: Sensitivity Analysis of NPV, BCR and NPW at Various Discount Rates

Discount Rates	Cost	Benefits	NPV	B/C R	NPW
10	79.94	211.21	131.28	2.64	1.64
14	69.56	149.45	79.93	2.15	1.15
18	61.36	108.22	46.86	1.76	0.76
20	57.89	92.84	34.97	1.60	0.60
22	54.74	80.03	25.28	1.46	0.46
31	43.67	43.42	-0.25	0.99	-0.01

The Programme is an economically viable proposition and feasible under different sensitivity and therefore should be considered worth implementation.

12. Implementation Schedule:

12.1 Table 31: Implementation Schedule/Gantt Chart:

Sub-component	Year 2015-2022	Remaining Target	2022-23 (Oct-June)	2023-24	2024-25	2025-26	2026-27	2027-28	Total
A. Economic Infrastructure									
1.1 Irrigation and Land Development (Acres)	40,000	20,000	1,266	3,671	6,384	6,288	1,692	700	70,000
1.2 Farm to Market Road (KM)	385	215	15	40	70	60	20	10	700
Bridges (Meters)	191								
2.1 Value Chain Fund (Grants)	4,336	1580	-		800	530	150	100	5,916
Value Chain Partnership (4Ps)	13	32			20	5	5	2	45
Processing Facilities	8	62			50	6	6		70
2.2 Social Mobilization		-							-
Village Producer Groups (VPGs)	29	-							29

Village Agriculture Cooperative Societies	162					25	25		162 212
District Associations		10					10		10
Regional Associations	3	-							3
2.1 Agri Extension		-							-
Private Plant Nurseries	24	-	26						50
Training (p/days)	400		500	500	400	360			2,160
2.4 Agri Research									
Green Houses (Nos)	4		--	--	--	--	--	--	4
Screen Houses (Nos)	7		--	--	--	--	--	--	7
Potato Seed Stores	2		2	3	--	--	--	--	7
Training (P/days)	575		575	1,075	1,000	1,000	--	--	4,225
Potato Seed Prod. (tons)	--		1,000	3,000	5,000	7,000	9,000	--	25,000
2.5 Land Titling									
Provincial Land Law	1		--	--	--	--	--	--	1
Land Record Cells	8		--	--	--	--	--	--	8
Land Titles (acres)	2,500		12,500	17,500	17,500	--	--	--	50,000
3. Programme Management									
Estab. Of PCU									
Estab of RCUs	1		--						1
Baseline Survey	3		--						3
Recruit: of VCTAT	1		--						1
Engagement of SMP	1		--						1

12.2 Result Based Monitoring (RBM) Indicators:

Summary of main outcome and results indicators is as in following matrix:

Development Goal and Objectives	Outcome Indicators
Goal: Improve income and reduce poverty and malnutrition in rural areas of Gilgit Baltistan region	- 45,000 HHs decrease in population below poverty line (poor households reduced by 15% compared to 2014 baseline) - Child malnutrition reduced by 10% from 2014 Baseline
Development Objective: Increased Agricultural income and employment for at least 100,000 rural households in the region	- At least 100,000 rural households' benefit - 50% of GB HHs have increased their agriculture income by 25% - Target HHs show an increase in their household assets by 10% - 35% increase in sales value and volume by the end of programme life in potato and apricot - 25% increase in agriculture production and productivity

Outcome 1: 100,000 households increase their production, productivity and sales in key agriculture commodities	- 50,000 hhs have expanded their agriculture landholding by at least one acre through new irrigated land - 60,000 hhs increase their sales to private sector partners and local markets through collective contracts through VACs. - The existing and new crop area is linked with the main road network through 400 km of new roads - 70% of the farmers in each target valley are members of farmers cooperatives, including at least 1/3rd women members - Over 30% of farmers engaged with VACs marketing/ economic activities - Over 30% of farmers trained in pre and post-harvest practices for selected value chains.
Outcome 2: A sustained and community-driven development approach established that is pro-poor and youth/gender and nutrition-sensitive	- 220 village social and economic development plans prepared with the participation of the poor and women and implemented - 10% of land titles provided for newly development land to women and poor/landless - The amount of funds recovered against 50% repayment modality - 40% of repayment funds invested in villages including activities favouring women, poor and youth - 40 youth groups established, trained and provided tool kits. - 40 youth groups engaged in land development - 220 village agriculture cooperative members trained in productive activities, at least 50% of women.
Outcome 3: Agri-business actors invest in local production, processing and value addition to improve marketing of local food products	- 220 producer-buyer contracts established by VACs and working satisfactorily - A Value Chain Support Fund was established and expended on a matching grant basis benefitting at least 250 enterprises and farmer cooperatives. - 220 village agriculture cooperatives formed (30% women) and 4 valley-level associations established and engaged in a contractual relationship with private sector buyers - Incremental quantities and value exported compared to baseline
Outcome 4: Government and private agriculture services are sustainably improved, and outreach expanded	- 50000 farmers served by agriculture services - Amount of potato seed, and fruit planting material delivered with results (Target: 12,000 tons of

	potato seed and 100,000 plants of improved varieties) - 150 adaptive trials and training conducted with the number of farmers covered (Target: 100) - Certified seed system functional and varieties certified - 108 incremental staff recruited, and number of inputs (agriculture, research, livestock) packages delivered with numbers of farmers covered
Outcome 5: The government formulates and enforces Policies and Regulations	- Interim Land Title Policy and Provincial Land Law promulgated by the end of the Programme. - Provincial and district land record offices established by the end of the Programme - Land titles provided for newly developed land - Provincial water Policy formulated and applied - Provincial Roads Master Plan prepared and O&M system with a source of funding notified - Rules for the operation of revolving funds established with Tissue Culture Labs, Agriculture Extension and Livestock Department developed and notified.

12.3 Implementation Plan: Same as above

12.4 M&E Plan: Planning, Monitoring and Evaluation and Learning Framework:

The AWP&B has been the key planning document for the programme activities and its outcome. The planning format will follow the programme's logical framework with clearly spelt-out monitoring indicators that can be easily measured and reported for Monitoring & Evaluation. Programme results will be measured at output & outcome levels and will be measured against indicators provided in the programme logical framework. The system will be guided by IFAD Results and Impact Management System (RIMS).

The overall responsibility for the M&E activities lies with PCU/RCUs. The Planning, Monitoring and Evaluation System (PME) has been put in place and is operational. The PME has been made part of an overall Information, knowledge management and communication system which is providing timely and accurate information on implementation progress and feedback for management decision-making. During the extension period it will also show progress against planned programme results. All indicators will be disaggregated according to gender and socio-economic status to the extent possible to enable a proper assessment as to whether the programme is reaching its intended target beneficiaries, poor households, smallholders, women and vulnerable groups.

Structure and Components: The Programme PME system will consist of simple planning formats with a limited number of key monitoring indicators that can be easily monitored and reported by all levels of implementation with time and cost efficiencies. The programme will use simple processes, structures and instruments including simple computer-based software with multiple user interfaces at all levels to ensure that important M&E information is available to all stakeholders promptly. The design will be aligned with Government/P&D monitoring and reporting structures for foreign-funded projects to minimize duplication of effort. Baseline information will be made the basis for all measurements of programme outcomes and impacts. Knowledge management and communication will be closely linked and aligned with the PME framework for effective feedback and knowledge

sharing. All staff involved with the PME system at different levels will be provided adequate training including farmers' organizations and other private sector partners.

PCU's AWP/B will be an enabling umbrella plan for all components. The exact scheme and VACs wise business plans will be prepared once the VACs and scheme have been identified and all necessary preparatory steps completed. At VACs level, commodity-specific business plans will be prepared in detail covering all aspects of value chain development for that commodity including private sector partnerships, need/use of Value Chain matching funds, training requirements and assistance needed from extension and research entities.

Monthly, quarterly and annually monitoring reports will be generated through different applications and tools as well as field visits by the monitoring team to assess progress on the infrastructure schemes.

Annual Planning & Progress Reviews: PCU will convene annual planning and progress reviews involving all stakeholders to take stock of existing progress and constraints and plan for the next year AWP/B. This will be in addition to quarterly planning and review sessions for review of progress and planning for next quarter. Seasonality of implementation is a major factor in GB and all annual and quarterly planning will particularly focus on ensuring readiness to maximize the use of short summer seasons in the area for maximum progress. Programme internal planning and review processes would be backed by regular IFAD supervision and implementation support missions.

Learning and Knowledge Management: Learning and knowledge management (KM) is a key feature of the programme. Systematic knowledge management and learning will be used as a means to make the programme more effective and efficient, enable it to review and simplify processes, adapt much faster to emerging lessons, and achieve greater impact. The main purpose of KM processes within the programme is to ensure that the knowledge generated is systematically identified, analyzed, documented and used to improve performance. Key features of the knowledge management approach in ETI include:

- Preparation of a programme-level KM strategy by PCU, in line with IFAD policy on KM, during the first year of implementation. The strategy will focus on the processes that will be involved in building a robust KM system in the programme.
- A programme website will be completed within the first year of implementation and used as a knowledge-sharing tool, and also linked to the IFAD Asia website. The KM team will extensively document and share knowledge generated in the programme. The QRM forums will be used as potential KS venues for capturing lessons learned and best practices leading to the development of related knowledge products.
- Key information from M&E studies, reviews and exposure visits, lessons and best practices will be disseminated through knowledge products such as newsletters, publications, case studies and reports, etc.
- IFAD Country Office and AICS will facilitate the Programme in lesson learning and exchange of experience between ETI and other IFAD and AICS-funded projects in the country in areas of common interest and approach. LAMP in Punjab and GLLSP in Balochistan offer important knowledge and lessons in the engagement of social mobilization approach for smallholders and value chain and marketing development for small producers. SPPAP, Punjab offers excellent poverty-targeting approaches.

Impact and Outcome – Key Performance Indicators (KPIs) / Tangible Outcome / Deliverables

Input	Output	Outcome		Targeted Impact
		Baseline Indicator	**Targets After Completion of Project**	
- Construction of irrigation and land development schemes to bring 70,000 acres of land under cultivation command - Construction of 700 KMs of Farm to market road - Construction of 200 Meters of bridges - Formation and support to 220 Village Agriculture Cooperative Society - Support to various value chain actors in production, productivity, processing, branding and marketing of 20 4Ps - Formation of Provincial and Regional Farmers Association -Strengthening and support to line department in land titling, Water Policy, Road Master Plan and O&M Policy	- 70, 000 acres of land brought under Command. - 700 KMs of Farm to market roads - Construction of 200 meters RCC bridge constructed - 220 Village Agriculture Cooperative established -20 4Ps identified and supported - Policies on GB Water, Road & land titling formulated	- Average Landholding 0.6-0.8 acres - Disconnected potential lands - Access through pony tracks - Informal Farmers enterprise - Absence of policies on Water, land and roads	- Outcome 1: 100,000 households increase their production, productivity and sales in key agriculture commodaties 50,000 hhs have expanded their agriculture landholding by at least one acre through new irrigated land - 60,000 hhs increase their sales to private sector partners and local markets through collective contracts through VACs. - Existing and new crops areas is linked with the main road network through 400 KM of new roads - 70% of the farmers in each target valley are members of farmers cooperatives , including atleast 1/3rd women members - Over 30% of farmers engaged with VACs marketing /economic activities - Over 30% of farmers trained in pre and post	- Improve income and reduce poverty and malnutrition in rural areas of Gilgit Baltistan. - No of poor households reduced by 15 % compared to 2014 baseline - Child malnutrition reduced by 10% from 2014 baseline.

			harvested practices for selected value chains - Outcome 2 : A Sustained and community driven development that is pro poor and youth/gender and nutrition sensitive. - Outcome 3: Agri business actors invest in local production, processing and value addition to improve marketing of local food products.	

12.5 Risk Mitigation Plan:

Main risks identified that may have a bearing on programme progress along with mitigation measures are reflected in the following matrix:

Risk	Likelihood	Mitigation Measures
GB is a newly created province, and institutional capacities may still not be up to the level for effectively implement a large donor funded programme	Medium	Appropriate external consultancy support has been provided in programme design to augment local capacities. There is existing experience within the region for donor funded programme implementation through previous IFAD funded NADP and other FAO, UNDP and JICA funded projects.
A number of private and public sector entities along with social mobilization partners and value chain fund manager are involved in implementation running the risk of inadequate coordination, conflicts and lack of synergies	Medium	A high profile and high-powered Steering Committee is being proposed at the Provincial Level with Chief Secretary of the province heading it and representation from all implementing partners including Farmers Organizations. This is being backed up by Programme Coordination Committee and Regional Coordination Committees for day to day coordination and trouble shooting. A long term Value Chain Technical Assistance team is also being proposed to provide effective support to FOs, private sector and value chain service providers
Programme/GoGB may not be able to attract sufficient number of qualified and competent staff for the key programme positions	High	The key programme positions have been kept open to private sector candidates with market based salaries to attract quality manpower from both public and private sectors

High turnover of programme staff and government implementing agencies' staff, as experienced in recent past in other programmes, may affect programme progress adversely	High	It is being made part of the Financing Agreement conditions that key programme staff would be recruited in transparent and competitive manner and in consultation with IFAD and once recruited, the key staff would stay with programme for at least three years.
Programme is setting ambitious targets for irrigation expansion (70000 acres) for completion in four years and 700 km of valley roads which may be difficult to attain	Medium	Irrigation development is essentially an up scaling of a tried and tested approach in the area since 1980s with well-established SOPs and guidelines by AKRSP, WM&ID and Local Government. A number of additional measures are also being included in programme design to support realization of these targets Consultancy services for survey, design and supervision of programme-funded roads is being proposed. Full payment of costs for irrigation schemes without any community contribution would also help faster execution.
Innovations like recovery of half of the irrigation scheme costs from the beneficiaries have never been tried before and may result in poor progress in the largest component of the programme	Medium	The risk is being addressed through a very strong social mobilization based approach, reinvesting the recovered funds for further social and economic development of same communities, provision of additional financial support for land levelling and crop production. Expansion of irrigated area is a priority demand in all localities and with promise of production of high value crops, people are willing to pay part of the costs. In old regime, communities have been contributing in excess of 40-50% in forms of unpaid labour. Programme would be paying full cost of labour and materials and thereby contributing US$ 25-30 million directly into communities household incomes
Land laws and land titling is not very clear in GB and may result in disputes for newly developed land, deprive the needy and weak from allocation of their share, clear land titles and ownership etc.	Medium	Programme will assist provincial government to promulgate an updated law for land ownership and titling, and issue an interim regulation to protect the rights of the beneficiaries on programme funded schemes. ETI will also support the government in establishing computerised land records and title issuance cells that will start their work with ETI funded programmes
Larger than norm Government counterpart funding and GB	High	Risk will be mitigated through appropriate provisions in the Financing Agreement

dependence on federal government releases may result in delayed or inadequate provision of counterpart funds		binding the government for timely release of funds. In any case, counterpart funding is the first call on Government releases.
GB has a varied landscape in terms of women empowerment and access and women in many areas may not be able to access programme activities and benefits in an equitable manner	Medium	A number of measures have been incorporated in design and approach to ensure active participation of women. These include female social mobilization staff, 20 dedicated women VACs, priority to women headed households in land allocation, special training provisions for women etc.
Financial management/ fiduciary risk: inherently high due to the remote location and weak capacities at decentralised levels.	High	Risk mitigation measures will include recruitment of qualified financial staff under performance-based contracts, quarterly financial reporting, issuance of payments to implementing partners based on certified statements of expenditure subject to internal and external audit and regular joint monitoring of ETI-GB accounts by the PCU, IFAD, GOGB and EAD, each within the context of its remit.

12.6 Disaster Risk Reduction Plan:

The Disaster Risk Reduction (DRR) strategies are inbuilt features of the programme across in its three core components and in all activities undertaken through various sub-components. Gilgit-Baltistan's mountainous terrain and susceptibility to climate-induced hazards such as glacial lake outbursts, landslides, and floods necessitate embedding resilience into the programme design, its interventions and in communities and VACs to minimize risks, make interventions and its benefits resilient and sustainable. By embedding various DRR strategies, ETI-GB will not only enhance the resilience of infrastructure and agriculture but also safeguards livelihoods and fosters sustainable development in the face of climatic and natural adversities.

DRR strategies focus on climate-resilient construction methods for irrigation systems and roads. For irrigation infrastructure and farm to market roads, the designs will ensure incorporation of mitigative measures based on hazard risk vulnerability assessments and topographic surveys to minimize risks and damages to infrastructure such as from land slide, rockfall, avalanche, flashfloods, water losses, soil erosion, and sedimentation. These infrastructures will be constructed to endure landslides and seasonal flooding, ensuring uninterrupted flow of water, connectivity and access to markets.

The Support Services for Value Chain Development component enhances agricultural resilience by integrating climate-smart practices and capacity-building initiatives. Farmers and VACs are trained in adaptive cropping techniques and water management to withstand erratic weather. Diversification of crops and addition of promising value chains is part of strategy to enhance agriculture income of farmers but also to ensure food security and resilience of the communities. The Value Chain Fund prioritizes investments in production, processing, technologies like cold storage and other value addition activities that mitigate losses during extreme events.The Programme Coordination Unit (PCU) oversees the incorporation of environmental risk assessments into planning. Policies will be advocated to regulate sustainable water usage and establish frameworks for early warning systems, operation and maintenance and disaster preparedness at the community level. Partnerships will be established with concerned line departments, local and international organizations to enhance capacity for rapid response and adaptation.

12.7 Procurement Plan:

The Procurements under ETI would be made in accordance with IFAD Procurement Guidelines. Any national/local directive, regulation or process that is contrary to IFAD Guidelines shall be of no consequence as far as the Programme financed procurement is concerned. The Programme would use different procurement processes like single source selection, direct contracting national competitive bidding or international competitive bidding depending on the type, urgency and size of the procurement. The implementing partners\co-financiers would also procure goods and services, delegated to them, for the Programme following IFAD Procurement Guidelines, federal PPRA & GBPPRA. A consolidated annual procurement plan will be prepared at the PCU level based on the annual work plan and budget (AWPB). The procurement methods to be used are the following:

a. For vehicles, goods, office equipment and publication of materials:

i. For contracts estimated to cost more than USD 100,000 (or equivalent),– national competitive bidding;

ii. For contracts estimated to cost more than USD 5,000 but less than USD 100,000 (or equivalent) – national shopping, requiring quotations from at least three reputable suppliers.

iii. For contracts valued below USD 5,000 (or equivalent) - direct contracting.

b. For technical assistance, workshops, training and studies – quality-based selection or single-source selection The contracts valued at USD 80,000. or more would be subject to national competitive bidding, and for such contracts, all documents on bidding, evaluation and contract award would be submitted to IFAD for prior review and provision of 'no objection'. Contracts valued at less than USD 200,000 would be subject to post-review during supervision missions; however, PCU would submit two copies of the signed contract to IFAD, together with the analysis of the respective bids and the recommendations for the award, immediately after the contract signature.

c. In accordance with the IFAD Procurement Handbook, International Competitive Bidding will be the mandatory method of procurement for contracts above the following value:

- Goods: Above USD 100,000
- Works: Above USD 1,000,000
- Services: Above USD 100,000

d. Review of Procurement by IFAD/AICS: Award of any contract costing USD 200,000 or equivalent or more shall be subject to prior review by the Fund. However, this threshold may be modified by the Fund during the course of Programme implementation.

e. Contracts Register: PCU, and all implementing agencies dealing with procurement of goods and services under ETI, shall maintain a Contracts Register, however PCU is maintaining these record on IFAD OPEN/ ICP.. All contracts, whether requiring IFAD prior approval or not, shall be listed in the Register of Contracts with the dates of approval. Two conformed copies of each and all awarded contracts to be financed – in part or in full – from the proceeds of the financing must be submitted to IFAD. A record of the contracts awarded within a calendar month must be submitted to IFAD using a duly completed Form C-10. All records of amendments will also be maintained according to the prescribed procedure as well as all required forms to be submitted with each WA for which payments against the contract are being made.

f. Grants: As per IFAD guidelines the threshold for value chain grants is not defined, however it is always allowed.

g. Community Procurement: The civil works related to irrigation schemes, land development and leveling, and farm to market road construction/rehabilitation are carried out by the communities themselves, with technical and financial support from ETI-GB. The design and costing of each scheme is initially agreed between ETI-GB, the Water Management Department (WM&ID) and the concerned community. A Scheme Management Team is formed with full consensus of the beneficiary community who is entrusted with the works. A maximum 25% advance is provided to

the SMT in order to initiate the work. ETI-GB then provides the financing on the basis of the quality and quantum of work completed, as certified by WM&ID and ETI-GB engineers. Throughout the works, ETI-GB/WM&ID provide site engineers to support and supervise the construction work, while the community keeps a record of all procurement, labor and material provided/used in the construction."

h. Procurement for soft loan-Untied Component (AICS)

Works: If the estimated amount is greater than 200,000. Euro procurement activity will be carried out in accordance with IFAD procurement guidelines and annex-IV of the financing agreement, where publication of tender notice will be floated on AICS websites and AICS prior approval will be mandatory. If the estimated amount is less than 200,000. Euro then AICS prior approval is not required.

Goods & Services:

If the estimated amount is greater than 135,000. Euro procurement activity will be carried out in accordance with IFAD procurement guidelines and annex-IV of the financing agreement, where publication of tender notice will be floated on AICS websites and AICS prior approval will be mandatory.

If the estimated amount is less than 135,000. Euro then AICS prior approval is not required.

i. Procurement for soft loan-tied Component (AICS)

Goods & Services:

If the estimated amount is greater than 135,000. Euro procurement activity will be carried out in accordance with IFAD procurement guidelines and annex-IV of the financing agreement, where publication of tender notice will be floated on AICS websites and AICS prior approval will be mandatory.

If the estimated amount is less than 135,000. Euro then AICS prior approval is not required.

Works:

If the estimated amount is greater than 200,000. Euro procurement activity will be carried out in accordance with IFAD procurement guidelines and annex-IV of the financing agreement, where publication of tender notice will be floated on AICS websites and AICS prior approval will be mandatory.

If the estimated amount is less than 200,000. Euro then AICS prior approval is not required.

13. Management Structures and Manpower requirement:

13.1. Management Structure and Manpower information

Federal Level and Provincial Level:

Economic Affairs Division (EAD) is the designated coordinating and executing agency at Federal level for all foreign development assistance. The IFAD loan will be negotiated by EAD, together with the Ministry of Finance and Government of Gilgit-Baltistan representative. Joint Secretary WB/IFAD will be the designated focal person for all programme related loan signing and approval processes, coordination and periodic progress reviews at the federal level. Being a multi-sector programme, and based on the past experience of similar multi-sector programmes financed by IFAD and other donor agencies, the Planning & Development Department would be the implementing department for the programme. The Planning and Development Department will perform this task through two key institutions: a Programme Steering Committee (PSC) at the provincial level and a Programme Coordination Unit at the implementation level.

Programme Steering Committee:

Programme Steering Committee (PSC) will be established for provincial level coordination, policy directions, and regulatory activities, approval of AWP&Bs, progress review and overall programme

oversight and accountability. GoGB will notify Programme Steering Committee (PSC). PSC will be headed by the Chief Secretary and will consist of the following members:

1. -Additional Chief Secretary Dev. /Secretary Planning & Development
2. -Secretary, Finance Department
3. -Secretary WM&ID
4. -Secretary, Agriculture Department
5. -Secretary, C&W Department
6. -Secretary Cooperative Department
7. -Representative of the Economic Affairs Division
8. -Representative of the Ministry of Planning Development and Reforms
9. -Programme Coordinator ETI-GB

The Programme Coordinator will act as Secretary to the PSC. PSC will meet at least twice a year, once for annual review of the preceding year and approval of next year annual workplan and budget and once for the mid-year review. More meetings of PSC may be convened if the situation is so warrants.

Programme Coordination Committee: Headed by Programme Coordinator and one representative each from implementing partners, as well as representatives of P&DD, the Committee will be the main planning, coordination and review forum for the day to day implementation of programme's approved AWP/Bs and strategies. The Committee will meet once every quarter to review progress of the previous quarter and approve plans for the next quarter and inter-alia decide on any emergent issues and challenges. The Committee may also have emergent ad-hoc meetings to decide on matters of immediate importance.

Senior Management Forum: The Senior Management, led by Programme Coordinator and comprising sections head along with the Regional Programme Coordinator, will form the Senior Management Forum (SMF) to provide overall direction to programmatic and reviewing & addressing challenges that may impact program success.

Programme Supervision: The Programme will be directly supervised by IFAD through fielding of Implementation Support and Supervision Missions led by the IFAD and composed of various experts, consultants or other IFAD HQ staff whose profile will be determined on a case-by-case basis upon analysis of Programme specific needs at the time of each mission. At least two supervision missions will be organized each year to assess overall progress and performance, gaps and constraints, with particular attention on fiduciary aspects, private sector linkages, and identify the necessary implementation support requirements. Ideally, at least one Supervision Mission per year should be organized at the same time as the PSC meetings, so as to allow the IFAD to attend these meetings as an observer.

Key Implementing Partners: The key implementing partners in the Programme will be:

Department of Agriculture (DoA): Directorates of Extension, Research Department of Agriculture will be responsible for implementation of Programme activities related to their mandates.

Directorate of Extension: Extension Directorate is headed by a director and has seven district offices headed by Deputy Directors and field presence consisting of Assistant Directors and field assistants. Programme will assist the Directorate in recruitment of incremental staff to address current staffing gaps. The Directorate staff at provincial, district and field levels will be responsible for pre-harvest, post-harvest and crop management related training of the farmers for the identified value chains and also assist the farmer organizations in establishment of farmer operated nurseries for quality fruit plants. The soil-testing lab in Gilgit will also be made fully functional.

Directorate of Research will be primarily responsible for effective management of its three tissue culture labs for production of quality seed for potato crop to enable farmers to produce 25,000 metric tons of certified seed potato, farmer training and monitoring for potato seed multiplication, coordination and linkages with private and public sector potato seed buyers, promotion of valley based storage and sorting facilities and introduction of better varieties of vegetables. Capacity for

seed certification will be fully developed at Gilgit and Skardu offices of Federal Seed Certification Department. Necessary incremental staff will be provided to enable the Directorate to effectively fulfil its mandate under ETI.

Directorate of Water Management will be responsible for the identification/implementation of irrigation schemes. The directorate will be primarily responsible for identification of potential lands for development and their ownership status, establishment of Scheme Management Team (SMT) together with ETI-GB for the implementation of schemes including survey, design and cost estimation of the schemes, agreement on implementation and cost recovery mechanism for each scheme and future O&M arrangements of the schemes. After completion of the scheme, WM&ID will take over all completed schemes. In doing so, the Water Management Directorate will work in close collaboration with both PCU and RCUs. The department will engage additional incremental staff as per Programme provisions, equipment, vehicles and position them as per targets fixed for each district. WM&ID will develop/formulate and approve the Water Policy for Gilgit-Baltistan.

Communication & Works Department: Communication & Works Department will take over the completed FMRs, Bridges and will be responsible for its operation and maintenance. The department will develop and approve the Provincial Road Master Plan and O&M Policy for Gilgit-Baltistan. For maintenance, a pool of machinery and equipment will be provided by the programme, the procurement process for the purchase of machinery and equipment will be done by C&W department in close coordination with ETI-GB.

Value Chain Development Fund Management Committee: The Value Chain Fund is aimed at meeting the financing needs of Village Agriculture Cooperatives (VACs) and individual entrepreneurs and product-specific groups like Women Milk Marketing Groups. It will also be a facilitating instrument for providing any viability gap funding. The Fund will operate on a matching grant-basis. A Committee will be constituted within PCU to oversee the management of Value Chain Fund management and disbursement. The Committee will be headed by Programme Coordinator, Lead Value Chain, Director Finance ETIGB, Rep of Agriculture Extension, Agriculture Research, Planning and Development Department, Cooperative Department, private/corporate sector representatives, and a representative from Farmers Organizations as members. The Committee will consider matching grant requests from Farmers' Groups/Associations and local entrepreneurs for value chain development of the commodities targeted by the Programme. The book-keeping for the fund will be the responsibility of PCU finance wing. The proposal vetting/scrutiny, district shares in the fund and ceilings for individual proposals and disbursement procedures will be detailed in Grant Manual.

Village Agriculture Cooperative Societies: All village-level value chain interventions particularly business development, agriculture extension, private sector linkages, etc. will implemented through the active involvement of organized Village Agriculture Cooperatives (VACs). Village will be identified and selected based on value chain potential after detail assessment and survey. The programme will support the mobilization and registration of these VACs. These VACs will be registered with the Cooperative Department. Subsequently, a bankable business plan for each VAC will be developed based on the potential ETIGB will technically and financially support the VACs to execute the business plans. A dedicated office for each VAC will be established for each VAC with the provision of the required Human Resources. The Agriculture Extension Department will be engaged for technical assistance and capacity building of the VACs. The Cooperative Department will perform the function of regulatory oversight, Audit and AGM of the societies. The programme will promote a hierarchy of VACs and associations starting with VACs would be subsequently organized and federate into Regional Farmer Organizations.

Private Sector Partners: Promotion of partnership with private sector will be a cornerstone of the Programme approach and will be pursued through implementing partners and partner government extension and research agencies. Partnerships will be pursued both with local private sector entities as well as down-country buyers. In addition to partnerships for the sale of local products, other

partnerships will also be developed for the provision of services and inputs, marketing, contract farming, potential private sector service providers and processors, and local transporters for the provision of specialized transport for high-value products/crops.

13.1.2 ETI Programme Management Structure and ToR

Programme Coordination Unit, ETI

The PCU will be based in Gilgit with three Regional Coordination Units (RCUs) located at Gilgit, Skardu and Diamer. The PCU will be responsible for overall management, implementation coordination, financing, procurement, monitoring, knowledge management and evaluation. All PCU staff will be recruited through competitive process and both public and private sector qualified candidates with appropriate experience will be eligible for selection through a high-powered selection committee notified by the provincial government. Selection against key positions will be based on written tests and interview and subject to IFAD concurrence. All positions will be open to male and female candidates and female candidates will be encouraged to apply. Apart from suitability, a candidate's commitment to stay on the programme for at least three years would be a primary consideration.

The PCU Staff will consist of the following:

- **Programme Coordinator (PC)**
    - Deputy Programme Coordinator/M&E Coordinator (1)
    - Communication and Media Officer (1)
    - Assistant to PC (1)
    - M&E Officer (1)
    - M&E Assistant (1)
- **Director Finance & Admin (1)**
    - Manger Finance (1)
    - IT Administrator (1)
    - Manager Admin & HR (1)
    - Admin Assistant (1)
    - Account Assistants (2)
    - Procurement Officer (1)
    - Procurement Assistant (1)
- **Lead Value Chain (1)**
    - Business Development Officer (1)
    - Value Chain Officer (1)
    - Grant Officers (2)
- **Infrastructure Specialist (1)**
    - Resident Engineers (1)
- **Gender and Poverty Manager (1)**
    - Gender and Poverty Officer (1)
    - Gender and Poverty Assistant (1)
- **Support staff for PCU will include:**
    - Computer Operators (3)
    - Receptionist (1)
    - Office cum Logistic helper (1)
    - Drivers (3)
    - Security Guard/Chowkidars (2)
    - Naib Qasid/office boy (3)

- **ETI-GB Cell P&DD**
    - Programme Officer (1)
    - Program Assistant (1)

REGIONAL COORDINATION UNITS:
Three Regional Coordination Units (RCU) will be established for field level coordination, management and monitoring of Programme activities. **One RCU office will be established in Gilgit** for Gilgit, Hunza Nagar and Ghizar districts, **one in Skardu** for Skardu, Kharmang, Shigar and Ghanche districts and **One in Diamer** for Diamer and Astore districts. The RCU will be headed by the Regional Coordinator who will also act as M&E and Knowledge Management Incharge and will include essential staff related to main areas of programme operations and management.
The Regional Staff for three offices will Include:

- Regional Coordinator (3)
- Admin & Finance Manager (3)

- **Support Staff for RCUs:**
    - Assistant to Reg Coord (3)
    - Admin & Finance Assistant (3)
    - Resident Engineers (4)
    - Business Development Officers (2)
    - Social Mobilization Coordinator (4)
    - Social Mobilizer (6)
    - M&E Officers (3)
    - M&E Assistant (3)
    - Value Chain Officers (3)
    - Field Finance Controller (3)
    - Drivers (7)
    - Naib Qasid/Office boy (5)
    - Security Guard/Chowkidar (1)

Terms of Reference of Key PCU and RCU Staff
Programme Coordinator (PC)
The PC will be responsible for the overall management and coordination of the programme activities. These include the provision of strategic guidance for programme implementation, principal accounting officer for the programme and overall coordination and team building. S/he will also be Secretary to the Programme Steering Committee (PSC), which is chaired by the Chief Secretary of GB Province.

Responsibilities

I. The timely establishment of PCU includes completion of recruitments, account opening and operation and management of PCU in an effective and efficient manner.
II. Establishment of sound management systems within the programme for planning, coordination, reporting, financial management, M&E and troubleshooting in line with IFAD financing agreement and programme documents
III. Develop an effective media management and communication strategy for the programme and efficient dissemination of all programme purposes and activities within and outside programme area.
IV. Be responsible for the overall management of the programme and of the PCU and RCU staff.
V. Lead the preparation of the annual work plan and budget (AWPB) and associated Procurement Plan and ensure is timely submission to relevant forums and approvals.
VI. Ensure the effective and efficient utilization of programme funds and other resources

according to the AWPB and Procurement Plan through supervision and monitoring.

VII. Ensure that progress, audit and other reports are produced and submitted to the appropriate parties on a timely basis.
VIII. Ensure effective targeting of the poor and the vulnerable in target villages/valleys and mainstreaming of gender in the programme, achievement of gender impacts as planned, and identifying and managing any gender-related risks.
IX. Ensure the timely dissemination of programme experience and results to relevant stakeholders within the learning community.
X. Ensure effective linkages, liaison and networking with other implementation partners and service providers either working in the programme area or potentially concerned with programme activities and with other relevant interventions.
XI. Establish effective for public-private sector interaction and promotion of private sector linkages with the provincial, district and valley level levels farmers or any other beneficiary groups.
XII. Represent the programme at relevant functions and meetings.
XIII. Implement the decisions of the PSC; and
XIV. Perform any other duty relevant to the programme as may be assigned by the PSC.

Qualifications

I. A highly qualified person with ample knowledge of implementing foreign/loan funded projects/programmes and multi sector coordination to be selected on competitive basis.
II. Master's degree or higher qualification in Agriculture, Economics, public administration, Business Studies, or other relevant field.
III. At least 10-15 years' experience at management level, preferably relating to projects/programmes with focus in agricultural production, marketing or business development;
IV. Demonstrated recent experience in planning and implementing a large rural development programme/programme aiming at reducing rural poverty with particular focus on increasing the competitiveness and inclusiveness of value chains, including agricultural value chains;
V. Demonstrated Experience in ability to liaise with a wide range and levels of organizations Government, Donors, private sector, NGOs, and community institutions.
VI. Demonstrated creativity, willingness to innovate, think systemically and design catalytic approaches to programme activities.
VII. Commitment to serve in challenging areas
VIII. Strong communications skills (oral, written, presentation)

Director Finance & Admin (DF)

Reporting to the Programme Coordinator, the DF shall lead the coordination of the overall financial functions. DF will be assisted by Two Accounts Officer and two Account Assistants

Responsibilities

I. Develop and put into operation the programme financial management system in accordance with the IFAD Guideline;
II. Manage programme funds effectively and efficiently, ensuring that programme accounts, disbursements and replenishment procedures are executed in accordance with the provisions of the Financing Agreement and the relevant financial guidelines of Government.
III. Conduct training of implementation partners' and service providers' staff to ensure that they carry out financial reporting and procurement in accordance with multilateral donor guidelines;

IV. Ensure accurate costing for the AWPB;
V. Prepare regular financial progress reports.
VI. Prepare annual financial reports for internal and external auditing in compliance with the provisions of the Financing Agreement. and any specific IFAD reporting requirements.
VII. Assist the PC in preparing the Completion Report and in conducting programme completion and financing closing activities as per the Financing Agreement.
VIII. Undertake any other duty assigned by the PC.

Qualifications:

I. Director Finance will be a BS-18 or equivalent officer selected from open market on competitive basis.
II. Degree in Commerce, Finance or Business Administration; At least 8 years' experience at management level in financial management of government- donors funded development programmes;
III. Experience in financial management/accounting in a government ministry/department and donor-funded programmes.
IV. Computer literate, especially in specialized accounting packages;
V. Good working knowledge of accounting, policies and procedures;
VI. Good working knowledge on financial control;
VII. Strong management and communication skills.

Lead Value Chain (LVC)

Reporting to the PC, the LVC shall coordinate the programme activities for value chain development and support. He will be assisted in his tasks by a Lead Value Chain. LVC will be the PCU counterpart and focal person for the Value Chain Technical Assistance Team.

Responsibilities

I. Under the guidance of the Programme Coordinator and together with the Technical Assistance Team and other stakeholders particularly private sector representative, carry out Value Chain analysis of each of the programme districts to identify constraints and opportunities.
II. Based on the value chain analysis, and in collaboration with VCTAT prepare, valley/union council, district and provincial level Value Chain strategy and action plan.
III. Identify, plan and implement capacity building of farmer's organization for entrepreneurial and business skills.
IV. Facilitate linkages between business model stakeholders including private sector processors, distributors, local promoters and farmer organizations.
V. Facilitate and Promote contract farming ventures between private sector and farmers organizations.
VI. Promote women's access to markets
VII. Guide stakeholders on the identification, planning, implementation, monitoring and evaluation of value chain support activities.
VIII. Ensure adequate synergies between the programme components particularly with VCTAT for Value Chain Development Fund.
IX. Monitor the development of innovative business models and, in collaboration with the Knowledge Management and Communication Officer and the Planning and Monitoring Manager, ensure related knowledge management, including the identification of policy lessons, and participate in developing the Programme Learning System;
X. Guide the preparation and implementation of the various value chain related studies;
XI. Contribute to the preparation of the AWPB and progress reports;

XII. Undertake any other duty assigned by the PC.

Qualifications

I. LVC will be a BS-18 officer, or equivalent hired from private sector.
II. Master's degree in agriculture, Agribusiness, Rural Development or a related discipline from a recognized university.
III. At least 8 years working experience in a similar field, 3 of which in senior management position;
IV. Demonstrated professional experience in Identification and development of guidelines for specific value chains, Managing the consultative process during the identification of specific value chains, Developing specific analysis on bottlenecks affecting development of value chains and Conducting Training need assessment for the promotion of specific value chains.

Procurement Officer (PO)

Reporting to the PC, will be assisted by One Procurement Assistant.

Responsibilities

I. Develop and put into operation the programme procurement system and procedures;
II. Ensure that all procurement of goods and services are in compliance with the provisions of the Financing Agreement and IFAD procurement guidelines;
III. Ensure administrative management of service provider and other procurement contracts.
IV. Ensure proper use and conservation of programme assets.
V. Preparation of annual programme procurement plans in collaboration with other members of the PCU and implementing partners and submitting same for approval by the IFAD and PSC along with the AWPB.
VI. Prepare regular procurement progress reports.
VII. Coordination of procurement of programme works goods and services at the central level and assist/supervise decentralized procurement as appropriate.
VIII. Ensuring the preparation and advertisement of TORs and tender and contract documents for specific procurements according to GOP and Donor-funded procedures.
IX. Participation in relevant tender committee meetings at the Lead Agency and assisting with the preparation of committee reports.
X. Review and advise on tender evaluation reports prepared by the Counties and other implementing agencies and making necessary follow-up.
XI. Maintaining high quality procurement files and contract registers for review by supervision missions and auditors.
XII. Preparation of regular financial and procurement progress reports.
XIII. Undertake any other duty assigned by the PC.

Qualification

I. PO will be a BS-16 or equivalent officer or a private sector candidate with appropriate experience in administration and procurements of goods and services and will be recruited on competitive basis.
II. Master's degree in administration or related field.
III. At least 8 years' experience at senior management level in administration with at least three years' experience with procurement of civil works, goods and services for GoP/donor funded programmes;
IV. Comprehensive knowledge of Public Procurement Regulations/PMRA rules is a must.
V. Strong computer and communications skills (oral, written, presentational)

Deputy Programme Coordinator/M&E and Knowledge Management Manager (KMM)

Act as Programme Coordinator in absence of programme coordinator. Reporting to the PC and working very closely with the other managers the MKM will coordinate the establishment and operation of M&E system and an integrated programme Learning and Communication and Strategy System. The system will link five functions: output and outcome M&E, IFAD Results and Impact management System (RIMS), M&E, learning and adaptation for continuous improvement of performance; internal (PCU) and external (stakeholders) communication; innovation and experimentation; and information management.

MKM will be assisted by three Divisional Monitoring Officers placed at DCUs, One KM officer and One Communication Officer and two assistants.

Responsibilities

i. Development and implementation of the programme M&E and Learning and Communication System and Strategy;
ii. Develop associated Management Information System for managing data and information for overall monitoring, and for the collection and analysis of data on programme achievements and impact, based on a set of gender disaggregated indicators in line with the programme logical framework and stakeholders' information needs;
iii. Organization and supervision of focused baseline surveys at the beginning of the programme;
iv. Coordinating the preparation and monitoring the implementation of the AWPB.
v. Ensuring that all participating institutions keep records on their activities and feed this information into the Programme Learning System.
vi. Developing a simple reporting system for monitoring programme activities and preparing regular reports on implementation progress, performance and impact of operations;
vii. Set up term of reference and conduct studies to assess the impact of the programme.
viii. Organization of training on M&E for members of the PCU, implementing partners and counties, and providing technical backstopping to implementing agencies for preparing the AWPBs and for compliance with reporting requirements;
ix. Develop and implement processes and guidelines for systematic capture of knowledge, good practices and innovation, and the sharing and use of same to improve programme implementation, including in the development of the AWPB;
x. Support advocacy efforts through providing evidence of programme impact gathered through the M&E system;
xi. Provide assistance/guidance in implementing the Programme Learning System;
xii. Coordinate surveys and case studies to assess achievements and outcomes of KCEP activities;
xiii. Develop a multi-stakeholder communication strategy along the seasonal performance of the programme including a portal for web-based feedback of beneficiaries, private sector partners and county administrations.
xiv. Coordinate the dissemination of the findings from the impact assessment studies.
xv. Foster partnerships for broader knowledge-sharing and learning;
xvi. Oversee communication support to awareness raising and sensitisation of programme participants.
xvii. Contribute to the preparation of the AWPB and progress reports;
xviii. Undertake any other duty assigned by the PC.

Qualifications

i. Master's degree in economics, Agricultural Economics, Rural Development, Communications or other relevant field.
ii. At least 8 years' relevant work experience, in M&E, knowledge management and communication;
iii. Demonstrated professional experience in Developing and implementing comprehensive M&E and communication and visibility plans, Developing website whose purpose is to document the programme profile and the periodic reporting to results and to provide a forum for stakeholders feedback during the implementation period, Writing reports, articles and or pamphlets depicting programme interventions and results;
iv. Proficiency in the use of databases, modern information and communication technology (ICT) in development, and other computer applications;
v. Demonstrated skills in quantitative and qualitative analysis and data management;
vi. Demonstrated experience in designing and implementing successful communication and knowledge management strategies for sustainable development, or in planning and implementing strategies at management level;
vii. Experience in analysing complex programmes or policies;
viii. Strong computer and communications skills (oral, written, presentation)

Infrastructure Specialist (IS)

Reporting to the PC, the IS will oversee the implementation of the civil works related interventions of the programme. S/he will be a BS-18 equivalent officer hired from private sector on competitive basis.

IS will be assisted by Two Resident Engineers at PCU (BS 17 equivalent) at PCU and Three Resident Engineer placed at RCUs.

Responsibilities

i. IS will be responsible for review of infrastructure design and cost, supervision and monitoring of the programme Infrastructure activities.
ii. Ensure that the design team/contractors have carried out environmental assessment of the programme infrastructure activities.
iii. Prepare on a timely basis monthly, quarterly and annual progress reports highlighting work plans, progress, key issues, achievements and corrective actions taken.
iv. Review the tender documents for the studies, supervision and construction
v. Monitor the work of consultants, contractors and departments including bidding and qualification processes report on quality, efficiency and progress to the PC;
vi. Contribute to the preparation of the AWPB and progress reports;
vii. Provide assistance for detailed design and supervision of any community level infrastructure.
viii. Undertake any other duty assigned by the PC.

Qualifications

I. IS will be equivalent of BS 18/Executive Engineer level and will be recruited from private sector
II. Bachelor's degree in civil engineering from a recognized institution.
III. At least 8 years relevant work experience in irrigation, farm to market road and community based infrastructure.

Regional Programme Coordinator /M&E Incharge (RPC)

The RPC will report to PC and will be responsible for the overall management, coordination and

monitoring of programme activities at the regional level.

Responsibilities

I. Establishment of systems for planning, coordination, reporting, financial management, M&E and trouble-shooting at the district level
II. Be responsible for the overall management and coordination of the programme activities in the district and of the RCU staff
III. preparation of the divisional annual work plan and budget (AWPB) and associated Procurement Plan;
IV. Ensure the effective utilization of programme funds and other resources according to the AWPB through supervision and monitoring;
V. Ensure mainstreaming of gender in the programme, achievement of gender impacts as planned, and identifying and managing any gender-related risks;
VI. Ensure the timely dissemination of programme experience and results to relevant stakeholders within the learning community;
VII. Ensure adequate linkages, liaison and networking with other implementation partners and service providers either working in the district or potentially concerned with programme activities and with other relevant interventions;
VIII. Establish effective fora for public-private sector interaction and promotion of private sector linkages with the district and valley level farmers or any other beneficiary groups.
IX. Represent the programme at relevant functions and meetings;
X. Perform any other duty relevant to the programme as may be assigned by the PC.

Qualifications

I. A BS-18 officer or equivalent candidate from Private sector will be eligible to apply.
II. Master's degree or higher qualification in Agriculture, Economics, Business Studies, or other relevant field;
III. At least 8 years' experience at senior management level preferably relating to programmes/programmes with focus in agricultural production, marketing or business development;
IV. Demonstrated recent experience in planning and implementing of rural development programme/programme aiming at reducing rural poverty with particular focus on increasing the competitiveness and inclusiveness of value chains, including agricultural value chains;
V. Demonstrated Experience in ability to liaise with a wide range and levels of organizations Government, Donors, private sector, NGOs, and community institutions).
VI. Demonstrated creativity, willingness to innovate, think systemically and design catalytic approaches to programme activities.
VII. Strong communications skills (oral, written, presentation).

14. Additional Projects / Decisions Required

15. Certificate:

Certificate

i. Certified that the project proposal has been prepared by professional expert in accordance with the instructions provided by the Planning Commission/ Ministry of Planning, Development & Reform for the preparation of Revised PC-I by following rules, procedures and policy of the government.

ii. Certified that the information/data provided in the PC-II is correct and authentic. The cost estimates have been correctly assessed and have neither been underestimated nor overestimated.

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