Concept Note

Development of Climate Change Resilient Natural Resource Base to Support Livelihoods of Vulnerable Communities in Upland Watersheds

Pakistan | International Union for Conservation of Nature (IUCN)

8 August 2018

GREEN CLIMATE FUND

Project/Programme Title:	Development of Climate Change Resilient Natural Resource Base to Support Livelihoods of Vulnerable Communities in Upland Watersheds
Country(ies):	Pakistan
National Designated Authority(ies) (NDA):	Ministry of Climate Change, Government of Pakistan, Secretary, 3rd Floor, LG&RD Complex, G-5/2, Islamabad, Phone:+(92-51) 9224579, 9204126, Fax:+(92-51) 9204126
Accredited Entity(ies) (AE):	International Union for Conservation of Nature
Date of first submission/ version number:	*[2018-08-10] [V.1]*
Date of current submission/ version number	*[2018-08-10] [V.1]*

Concept Note

The Green Climate Fund (GCF) is seeking high-quality projects or programmes.

The Accredited Entity is encouraged to submit a concept note, in consultation with the National Designated Authority, to present a project or programme idea and receive early feedback and recommendation.

Notes
• The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days. • As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential. • The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt. • NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any. • Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF). • Further information on GCF concept note preparation can be found on GCF website Funding Projects Fine Print.

A. Project / Programme Information (max. 1 page)			
A.1. Project or programme	☒ Project ☐ Programme	**A.2. Public or private sector**	☒ Public sector ☐ Private sector
A.3. Is the CN submitted in response to an RFP?	Yes ☐ No ☒ If yes, specify the RFP: _____	**A.4. Confidentiality[1]**	☐ Confidential ☒ Not confidential
A.5. Indicate the result areas for the project/programme	Mitigation: Reduced emissions from: ☐ Energy access and power generation ☐ Low emission transport ☐ Buildings, cities and industries and appliances ☒ Forestry and land use Adaptation: Increased resilience of: ☒ Most vulnerable people and communities ☒ Health and well-being, and food and water security ☐ Infrastructure and built environment ☒ Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO2eq over lifespan)	9m tCO2eq	**A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)**	Direct beneficiaries: 0.3 million (7.4% of state population and 0.14% of total population)[2] Indirect beneficiaries:10 million (4.8% of total population)
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD59.477m	**A.9. Indicative GCF funding requested**	Amount: USD35.477m
A.10. Mark the type of financial instrument requested for the GCF funding	☒ Grant ☐ Reimbursable grant ☐ Guarantees ☐ Equity ☐ Subordinated loan ☐ Senior Loan ☐ Other: specify_____		
A.11. Estimated duration of project/ programme:	a) 5 years	**A.12. Estimated project/ Programme lifespan**	30 years
A.13. Is funding from the Project Preparation Facility requested?[3]	Yes ☒ No ☐ Other support received ☐ If so, by who:	**A.14. ESS category[4]**	☐ A or I-1 ☒ B or I-2 ☐ C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes ☒ No ☐	**A.16. Has the CN been shared with the NDA?**	Yes ☒ No ☐
A.17. AMA signed (if submitted by AE)	Yes ☒ No ☐ If no, specify the status of AMA negotiations and expected date of signing:	**A.18. Is the CN included in the Entity Work Programme?**	Yes ☐ No ☒
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	This project will reduce climate vulnerability and mitigate carbon emissions in the State of Azad Jammu and Kashmir (AJK). Climate risks in AJK include changes in temperature and temperature patterns, and changes in precipitation and precipitation patterns, causing melting glaciers, more rainfall in northern areas (including drylands and glaciers,) less rainfall in southern areas, reductions in snow maxima, and increased evapotranspiration. This will lead to increased floods and droughts,		

[1] Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy (Decision B.12/35) and the Review of the Initial Proposal Approval Process (Decision B.17/18).
[2] Total Population of AJ&K in 2017 is 4.045 million; total population of Pakistan in 2017 is 207.774 million
[3] See here for access to project preparation support request template and guidelines
[4] Refer to the Fund's environmental and social safeguards (Decision B.07/02)

	altitudinal changes in ecological and agricultural zones, changes in flowering and fruiting seasons, increased landslides and glacial lake outburst floods (GLOFs). People, natural ecosystems and agricultural land will be negatively affected. Land use change and forestry are the largest sources of emissions in AJK. Irrigation and water management, and agro-forestry, are identified in Pakistan's Nationally Determined Contributions as priorities for reducing emissions. This project will, in partnership with government and the private sector, implement selected irrigation, water management, agro-forestry, afforestation, sustainable land management, natural ecosystem management, ecological corridors and climate refugia interventions within the frameworks of Forest Landscape Restoration and Water & Watershed Management, to reduce climate vulnerability and mitigate emissions. The interventions are intended to have positive effects. Any potential negative effects of these interventions on resilience will be assessed and balanced during the full proposal design.

B. Project / Programme details (max. 8 pages)

B.1. Context and Baseline (max. 2 pages)

The proposal draws on information in the pre-feasibility study, which is attached at Annex 2.

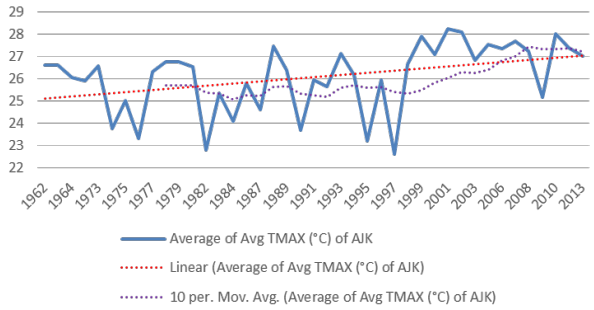
Climate change context

Pakistan is one of the top ten countries most affected by climate change according to the Global Climate Risk Index developed by Germanwatch (https://germanwatch.org/de/download/16411.pdf Pg6). Climate risks include:

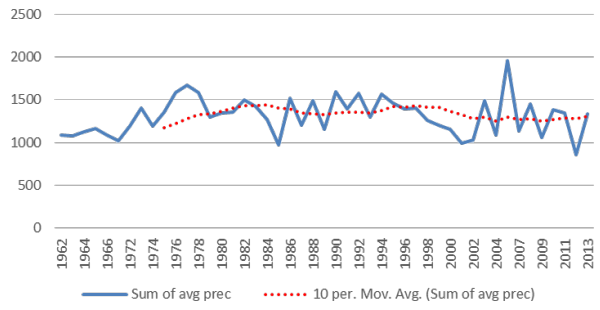
- An expected increase in temperature between 1°C to 3°C by 2100 in the central and higher emission scenarios (IPCC RCP 4.5 & 8.5)[5]
- Changes in temperature patterns
- Increases in precipitation[6]
- Changes in precipitation patterns including more rainfall in northern areas, including drylands and glaciers, and less rainfall in southern areas
- Increases in storms and strong winds

These two graphs show the trends for maximum temperature and precipitation in AJK.

Figure 1: Average of TMAX (°C) in AJK



Annual avg prec in AJK



These climate risks lead to a range of climate impacts on natural ecosystems, agricultural land, and people. The effects and impacts of climate change were identified using information from the Pakistan Meteorological Organization (PMD), local communities and experts of line departments and NGOs. Such events have been witnessed on regular basis at local level during the last 50 years. Annex 2 contains detailed graphs of changes in AJK. Local observation shows that there are clearly observable changes in the climate patterns.

Climate impacts include:

- Increased frequency, duration and intensity of floods: major flood have occurred in 1958, 1988, 1992, 1998, 2010 and 2014
- Increased frequency, duration and intensity of droughts: major droughts have occurred in 1962-63, 1966-1971, 1985, 2000-2004, 2009 and 2012.
- More favourable conditions for invasive species

[5] Burhan Ahmad and Shahid Mahmood (2017). Observed, Simulated and Projected Extreme Climate Indices over Pakistan, Hamburg, Diplomica Publishing GmbH, http://www.anchor-publishing.com/document/371678/
observed-simulated-and-projected-extreme-climate-indices-over-pakistan. ISBN 978-3-96067-672-0.
[6] ibid

- Increased frequency of landslides
- Increased frequency of glacial lake outburst floods (GLOFs)
- Increased heat stress

These impacts affect water resources, forests, fisheries, agriculture, ecosystems (and the ecosystem services they provide) and biodiversity, as well as people directly. IUCN notes that some of these effects are also highly likely to be caused, and exacerbated, by land degradation in AJK.

The pre-feasibility study includes details of, and references to, some of the most significant effects, which in summary include:

- Loss of life and property. More than 1200 people lost their lives due to the unprecedented heat wave in Karachi in 2015. During the 2014 floods in AJ&K, 56 people lost their lives, and 111 were injured, affecting 120 villages, completely destroying more than 4,000 houses and partially damaging about 24,000 houses.
- Rainfall influences the pattern of earthquake activity in the Himalayas , where the 2005 AJ&K earthquake took more than 46,000 lives with about 33,000 injured affecting 59% villages and cities in 5 districts.
- Melting glaciers
- Reductions in snow maxima (minimal effect on available land, but significant reduction in stores of freshwater)
- Drying-out of water sources and wetlands – over 90% of agriculture is rain-fed, which means climate-related changes in rainfall directly affect the majority of the state's agriculture.
- Reduced water quality
- Changes in species composition of forests, grasslands and wetlands
- Increase in incidence of pests and diseases
- Physical damage from floods, landslides and GLOFs . The floods in 2010, 2012 & 2014 caused losses of over US$18 billion with over 38 million people affected, 3.45 million houses damaged and over 10 million acres of crops destroyed.
- Expansion of the range and abundance of invasive species
- Changes in altitudinal zones for agriculture and natural ecosystems including flowering and fruiting times
- Increased evapotranspiration
- Increased forest fires

Policy context

Pakistan's long-term vision is to build a climate resilient society and economy by ensuring that climate change adaptation is mainstreamed in economically and socially vulnerable sectors (National Climate Change Policy 2012.)

The Ministry of Climate Change, Government of Pakistan, has developed a National Adaptation Plan (NAP) in collaboration with UNEP, which creates a framework of action to guide implementing agencies on mainstreaming medium and long-term climate change adaptation efforts into policies, strategies and programmes. It provides capacity support for a coordinated approach within and among different levels and tiers of government. Along with the NAP, sectoral and sub-national adaptation plans will also be prepared which will enable prioritizing adaptation needs and allocating corresponding financial resources. The NAP has been submitted to the Green Climate Fund, but preparation of the sub-national plan for Azad Jammu and Kashmir has not yet been initiated.

Physical, biological and geographic context

The area of the State of Azad Jammu and Kashmir is 13,297 km2. It is divided into 10 districts. The State can be broadly divided into four physiographic regions Northern Dry Mountains, Central Highlands, Southern Uplands and Southern Lowlands. A Map is included at Annex 1.

Economic and social context

The population of AJK is 4.045 million with a growth rate of 2.4% annually. The population density is 304 persons per sq. km. The literacy rate is 74 percent.

The estimated per capita income is USD847. Agriculture, livestock rearing and services are the main activities however average family income from agriculture and livestock remains largely of subsistence value. A significant proportion of the population has emigrated to the Middle East and Europe, consequently, foreign capital remittances also form an important part of household income. The unemployment rate is 14.4%.

Rain-fed agriculture is predominant with a small contribution from land irrigated by means of small diversion channels. The cultivatable agricultural area is 172,821 ha (13% of total geographical area), out of which 92% is rain-fed. Of the cultivable land, 69,602 ha are double cropped (40%) in the summer (Kharif) and winter (Rabi) seasons but only 18,712 ha (11%) area is under irrigation. Of the total area under trees and rangeland, only 153,648 ha (12%) is under productive forests.

51% of farmland is cultivated while the remaining 49% is grassland. Although a vast majority of the farms are owner operated

(72%), some farms are jointly managed by the owners and tenants (25%), and only 3% are totally tenant operated. Over 80 percent of the owner operated and owner-cum-tenant operated farms are fragmented which adversely affect the possibilities for land improvement. Due to land inheritance and the existing tenure system, the on-farm interests of owner operators are declining with the result that there is little hope for long term investment in land for sound management practice.

Poor, vulnerable and socially excluded groups are more likely to be affected by climate change as they often live in marginal areas, and depend directly on natural resources and ecosystem services which will be affected by climate change.

Interventions by the government, while valuable, do not fully consider the aspects of resilience to climate change and associated disasters. This is due to limited availability of financial and technical resources and this has, in turn, resulted in loss of previous investments as a result of extreme climate events, floods and related disasters. This scenario would continue without GCF funding. GCF funding opens up the possibility of an alternative scenario which will add climate resilience to government investments and demonstrate and guide government institutions and communities towards climate resilient development. This will safeguard investments against climate change which will in turn help the social and economic uplift of communities including women.

Addressing resilience: Climate risks, impacts and nature-based intervention options

The following table shows the relationship between climate effects and impacts, and the nature based solutions proposed. The proposed solutions were selected after consultation with sectoral experts of AJK line departments and with further verification during consultation workshops at regional levels. These workshops were attended by line departments, NGOs, academia and media.

Effects	Impacts	Nature-based and other intervention options	Rationale for interventions[7]
Increased frequency, duration and intensity of floods	Loss of life Physical damage Reduced water quality Changes in species composition of forests, grasslands and wetlands	Forest Landscape Restoration (including afforestation, agro-forestry, sustainable land management, natural ecosystem management, ecological corridors and climate refugia) Wetland protection and management: Declaring some wetlands as Ramsar sites in AJ&K Grassland management (e.g. adapting seasonal livestock movements to climate change projections – can be used to naturally rehabilitate grasslands, which can reduce run off, increase infiltration, increase carbon sequestration and storage, and increase livestock productivity)	Attenuates rainfall and run-off Improves absorption of rainwater Protects soil biodiversity Maintains overall ecosystem functionality Maintains populations of important species Wetlands act as natural water storage mechanisms
Increased frequency, duration and intensity of droughts	Loss of life Reduced water quality Reduced water quantity Changes in species composition of forests, grasslands and wetlands	Forest Landscape Restoration (including agro-forestry, sustainable land management, natural ecosystem management, ecological corridors and climate refugia) Wetland management Water demand management Application of efficient irrigation systems Improved soil moisture and fertility management (including sowing crops on ridges, micro-catchments for rainwater harvesting, reducing tillage operations, introducing low	Retains water in the landscape for longer periods Wetlands act as natural water storage mechanisms Protection of soil biodiversity Maintenance of overall ecosystem functionality Improves efficiency of water use

[7] Note: measures can mitigate the impact (e.g. rehabilitation of hydrological functions, or SLM) and help people to cope with the impact (e.g. irrigation or soil moisture and fertility management). These will be further elaborated in the detailed project design

		delta horticultural crops like potato and nitrogen fixing crops in crop rotation) Grassland management (e.g. adapting seasonal livestock movements to climate change projections – can be used to naturally rehabilitate grasslands, which can reduce run off, increase infiltration, increase carbon sequestration and storage, and increase livestock productivity)	
More favourable conditions for invasive species	Degradation of habitats Degradation of agricultural land and pasture Displacement of native species Reduced yields Increased risk of fire	Invasive species control programmes including management, prevention, removal and awareness	Invasive species removed or controlled in-situ Reduced risk of introduction by people
Increased frequency of landslides	Physical damage	Bio-engineering Sustainable land management (particularly in micro-catchments) including stabilising soil, increasing infiltration, increasing moisture storage, increasing food productivity, and capture and storage of carbon Afforestation Grassland management (e.g. adapting seasonal livestock movements to climate change projections – can be used to naturally rehabilitate grasslands, which can reduce run off, increase infiltration, increase carbon sequestration and storage, and increase livestock productivity)	Stabilises land Harvests rainwater, preventing water-induced landslides
Increased frequency of glacial lake outburst floods (GLOFs)	Physical damage	Protection of glacier lakes on susceptible/vulnerable sites Forest plantation in low lying glacier areas Establishment of nurseries of forest plants of high altitude such as Betula, Corylus, Acer Awareness raising of local communities near glacier areas Early warning system for GLOFs	Protecting communities from expected GLOFs Reduce glacier melting
Increased heat stress	Degradation of habitats, agricultural land and pasture Displacement of	Introduction of heat-tolerant varieties Relocation to cooler zones Disease control measures Pest control measures	Maintains productivity of ecosystems, agricultural land and pasture Prevents disease Prevents pest incursion Prevents and/or control fire

	native species Reduced yields Increased risk of fire Increased risk of pests and disease	Fire control measures Seasonal livestock movements safe guarded and under improved management	

Pakistan's long-term vision is to build a climate resilient society and economy by ensuring that climate change adaptation is mainstreamed in economically and socially vulnerable sectors (National Climate Change Policy 2012.)

The Ministry of Climate Change, Government of Pakistan, has developed a National Adaptation Plan (NAP) in collaboration with UNEP, which creates a framework of action to guide implementing agencies on mainstreaming medium and long-term climate change adaptation efforts into policies, strategies and programmes. It provides capacity support for a coordinated approach within and among different levels and tiers of government. Along with the NAP, sectoral and sub-national adaptation plans will also be prepared which will enable prioritizing adaptation needs and allocating corresponding financial resources. The NAP has been submitted to the Green Climate Fund, and preparation of the sub-national plan for Azad Jammu and Kashmir has not yet been initiated.

Addressing emissions: Greenhouse gas emissions and priority interventions

Pakistan's greenhouse gas emissions profile is dominated by energy and agriculture, as shown in the following table (amounts shown in MT CO2-equivalent):

Sectors	1994	2008	2012	2015
Energy	85.8	168.47	171.44	185.97
Agriculture	71.63	125.97	162.86	174.56
Industrial Processes	13.29	18.54	19.59	21.85
Land Use Change & Forestry	6.52	9.29	9.67	10.39
Waste	4.45	7.24	10.55	12.29
Total	181.7	329.51	374.10	405.07

Although firm data is not available for the State of Azad Jammu and Kashmir, estimates have been made as follows, which may be further elaborated during the preparation of the full proposal:

Sectors	1994	2008	2012	2015
Energy	Negligible			
Agriculture	1.41	2.49	3.21	3.44
Industrial Processes	0.05	0.07	0.08	0.09
Land Use Change & Forestry	1.99	2.99	3.31	3.57
Waste	0.09	0.14	0.21	0.24
Total	3.54	5.70	6.81	7.34

Pakistan's high priorities for emissions mitigation in the agriculture sector were identified in the nation's Nationally Determined Contributions (NDCs) policy document submitted to the UNFCCC in 2016. High priority actions include:

- Improve Irrigation and Water Management. Please note these two options can be differentiated but are identified and presented together in Pakistan's NDC policy. Pakistan notes they have high emission reduction potential in AJK and are prioritized in numerous strategy and policy documents. They have high sustainable development benefits and the cost is reasonable, but need to be carefully implemented to ensure they do not pose other risks such as exacerbating water shortages. Using more effective irrigation measures can enhance carbon storage in soils through enhanced yields and residue returns. However, some of these gains may be offset by carbon dioxide from energy used to deliver the water or from N2O emissions from higher moisture and fertilizer nitrogen inputs. Mostly drip/ micro sprinklers/ bubble irrigation will be applied which requires a small increase in the use of energy but up to 80 percent saving of water in irrigating crops. Efficient irrigation will result in increase in crop growth or carbon sink/sequestration as well as saving water. Other benefits include reduction in water evaporation and deep percolation losses in crop growth, less favourable conditions for the onset of diseases, more efficient use of agricultural chemicals, and reduced leaching of nitrogen. Land leveling energy usage requirements and soil erosion risks are reduced with drip irrigation. Any additional energy required is provided by solar photovoltaic sources.
- Implement agroforestry practices. Implemented through plantation of multipurpose and fast growing tree species, in conjunction with a range of sustainable land management practices. High emission reduction potential. Included in some strategy/policy documents. High sustainable development benefits. Cost is reasonable. Activities could include sowing low delta crops on ridges, contour cultivation, mulching, low tillage, in partnership with the Agriculture department of AJ&K. Ecosystem services that would also arise, as well as emissions reductions, from these actions include soil and water conservation and regulation, watershed management, conservation of biodiversity, non-timber forest products, ecotourism, water provision (for human/animal uses and food production), river bank and soil erosion control, water

retention, and community livelihood improvement.

There may be conflicts between some emissions related actions, and forest landscape restoration and sustainable land management related actions. For example, irrigation is a priority for emissions reduction, but may have negative effects for sustainable land management. These potential conflicts will be resolved and managed during the full proposal design phase.

Barriers

The main barriers identified in the pre-feasibility study include:

- Lack of institutional capacity in planning, designing, and resource mobilization of climate change initiatives;
- Lack of knowledge and awareness of the consequences and impacts of climate change, and therefore lack of preparedness
- Inadequate financial resources;
- Lack of incentives or structure for private sector to invest
- No coherent or effective land use planning policies, including lack of cross-sectoral interaction;
- Unwillingness of farmers to adopt climate change resilience practices;
- Lack of coordination between natural resource management agencies/departments

B.2. Project / Programme description (max. 3 pages)

The proposed project focuses on a selection of nature-based solutions within the agreed IUCN Green Climate Fund priorities of Forest Landscape Restoration and Water & Watershed Management, to respond to the climate resilience and emissions mitigation priorities of Pakistan, and the state of Azad Jammu and Kashmir. Project interventions will be focussed on addressing the risks at identified climate vulnerable sites, according to vulnerability studies and field consultations with relevant stakeholders, and locations for priority interventions for emissions mitigation.

Theory of change

Problem statement

1. Changes in the global climate caused by human-induced greenhouse gas emissions cause a variety of climate risks, including changed temperature and temperature patterns, and changed precipitation amounts and patterns.
2. Reducing vulnerability to climate change requires participation of men, women, poor and other disadvantaged groups.
3. Changes in the climate cause negative impacts on ecosystems, ecosystem goods and services, and people, making them vulnerable to climate change. These impacts include increased droughts, increased floods, increased landslides, increased impacts of invasive species and diseases, increased heat stress, changed flowering and fruiting seasons, and changed altitudinal zones for habitats, species and crops.
4. Land degradation and unsustainable land management exacerbates the impacts of climate change.
5. Climate impacts directly and negatively affect people. The impacts also negatively affect ecosystems and the goods and services they provide, which consequently affects the people who depend on them.
6. Limited knowledge and awareness of the effects and impacts of climate change mean vulnerable people are not well prepared to respond, making them more vulnerable.
7. AJK needs to make a contribution to meeting Pakistan's commitments on greenhouse gas emissions reductions, focussing on priority interventions that are appropriate for the state.

Project Rationale

1. Carefully selected land use and policy interventions can reduce the vulnerability of AJK to climate change impacts by focussing on, and addressing the risk to, climate-vulnerable sites
2. Targeted land use and policy interventions, in line with nationally agreed priorities, can reduce greenhouse gas emissions
3. This project will use a range of specific field-based interventions to reduce the vulnerability of people and ecosystems to climate change in vulnerable sites, and reduce greenhouse gas emissions.
4. Interventions will be designed within the frameworks of Forest Landscape Restoration, and Water and Watershed Management, applying the principles and practices of Sustainable Land Management, protecting the supply of ecosystem services and products, including water, biodiversity, productivity, soil health, and protecting against physical damage
5. Sustainable Land Management in the context of global goals for Land Degradation Neutrality (LDN) will ensure the productivity of agriculture and pasture is sustained, and that climate impacts are not exacerbated
6. The role of wetlands as a functional part of the landscape, particularly in the context of storing water as a way of ameliorating floods and droughts, will be important components of interventions. The project will promote the declaration of some alpine glacier lakes in Neelum valley of AJ&K, such as Chitta Katha lake located at ≈4,100 meters and Ratti Galli lake at ≈3,700 metres, as Ramsar sites.
7. Investment in private sector incentives, including market development and access, and capacity building, will enable vulnerable people to make best use of goods and services from resilient ecosystems and agricultural land, improving their resilience to climate change.
8. Investment in facilities, capacity building, learning and support will help vulnerable people be better prepared for the

effects of climate change

Outcomes and indicators

Outcomes	Indicators
1. The supply of ecosystem goods and services from freshwater and forest ecosystems is maintained 2. The supply of goods and services from agricultural land is maintained 3. Communities are better prepared to respond to climate change 4. Emissions avoided/reduced in excess of business as usual for land use and forestry	2,100 hectares area of crop land under improved sustainable land management practices 10% increase in soil organic carbon 17,000 hectares of forests and forest landscapes restored (integrated with agriculture, farm forestry and horticulture where necessary) 3 wetland sites protected and managed3 wetland sites restored or rehabilitated and managed 2 wetland sites declared as Ramsar sites20 institutions and 500 people with improved capacity 200 communities demonstrate increased social mobilization and preparedness for the impacts of climate change 50 water demand management measures in place 100 irrigation systems made more efficient 4 improved policy regulations supporting climate resilience and emissions mitigation 3,000 hectares of forest plantation by the private sector Private sector nurseries producing 6.5 million forest plant saplings

Components and activities

The project interventions have been grouped into four inter-related components, guided by the overall approaches of Forest Landscape Restoration (including sustainable land management); Wetland conservation, protection and management; Water demand management; and Policy, planning, capacity and preparedness.

The table below identifies the priority interventions for each component, and the resilience and emissions priorities they address. There may be conflicts that need to be resolved for some intervention types such as irrigation, which may cause negative effects for resilience while meeting emissions priorities. These will be resolved during the full design process.

The proposed interventions were selected by the proponents and partners based on their suitability for meeting the requirements for resilience and mitigation of emissions, as well as meeting the local needs and challenges of adapting to climate change and reducing emissions. Further details of specific interventions, their locations, partnerships with local organisations and the private sector, and the decision processes for selection, will be addressed in the full project design.

Component	Interventions	Resilience priorities addressed	Emissions mitigation priority addressed
1) Forest Landscape Restoration	1.1 ROAM (Assessing landscape restoration opportunities at the landscape level)	Erosion Runoff Water quality Floods Landslides Loss of productivity	Forestry Soil carbon (not an NDC identified priority, but a contribution)
	1.2 Management and protection of key sites		
	1.3 Forest restoration including natural forest regeneration		
	1.4 Measures to address land degradation , including soil health, through sustainable land management		
	1.5 Farm/village/social forestry		
	1.6 Sustainable agriculture and horticulture		
2) Wetland conservation, protection and management	2.1 Wetland inventory and priority management and restoration sites identified	Floods Water quality Water quantity Droughts	n/a
	2.2 Wetland management plan development and implementation		

	2.3 Declaring wetlands as Ramsar sites		
	2.4 Wetland restoration		
3) Water demand management	3.1 On-farm water management and rainwater harvesting	Floods Water quality Water quantity Droughts	Irrigation and water management (as per NDC priorities)
	3.2 System for payment for ecosystem services		
	3.3 Awareness and community engagement		
	3.4 Increase efficiency of irrigation systems		
4) Policy, planning, capacity and preparedness	4.1 Policy and regulation development	Creates enabling conditions and addresses barriers for all climate risks and impacts Allows strategic coordination and planning of interventions	Allows strategic location of emissions reductions activities, balancing against possible negative effects on resilience efforts
	4.2 Knowledge management and information sharing		
	4.3 Social and gender inclusion mechanisms and processes		
	4.4 Engagement of farmers and communities to increase and improve preparedness		

The private sector will have an important role to play in these proposed interventions, including forest plantations, plant nurseries, soil erosion control and agricultural related activities. In addition to government line departments, NGOs like AJK Rural Support Program, National Rural Support Program, Islamic Relief and Pakistan Red Crescent Society have also supported communities in such interventions. The project will encourage private sector interventions including forest plantations on private lands and development of forest nurseries for provision of forest plants to the public and the Forest Department and other project initiatives. It is expected that private companies will also initiate ecosystem conservation and agriculture related activities as the project will provide them such opportunities.

Activities consistent with regulatory and legal framework

The proposed activities are fully consistent with the current regulatory and legal framework in Pakistan and the State of Azad Jammu and Kashmir.

Accredited entity credentials and implementation arrangements

Many international donor funded projects in Pakistan have been led by, coordinated or contributed to by IUCN. IUCN is an international union of members, expert commissions and secretariat staff, bringing a wide range of skills and expertise. Examples of previous projects directly relevant to this proposal include Integrated Hill Farming Project, Integrated Land Management Programme, Neelum Jhelum Community Development Program, Reforestation programs, Bhimber Upland Rehabilitation and Development Project, and Suketar Watershed Management Project.

For this proposal IUCN, as the GCF accredited entity, will act as the Implementing Agency, and will be responsible for:

- Accountability to the Green Climate Fund
- Accounting for co-financing from partner agencies
- Supervision of the executing agency, the Environment Department, Government of Azad, Jammu and Kashmir. The Environment Department serves as the focal department for climate change and environment related international conventions and forums. The Ministry of Climate Change, Government of Pakistan will provide support. The Environment Department will support relevant departments as implementation partners.
- Oversight of the project management arrangements, including:
  - Project Board/Project Steering Committee: The Secretary, Ministry of Climate Change (MOCC), will be the Chairman. The Board will have representation from State departments, relevant research/academic institutions, and NGO AJK Rural Support Program (AJKRSP) and provides overall guidance to project management and approves budget and work-plan. It will meet at least twice a year. The Project Management Unit (PMU), housed in the Climate Change Centre, will serve as the Secretariat of the Board.
  - Project Management Committee (PMC) The Project Management Committee, headed by Additional Chief Secretary (Dev) will be established to coordinate engagement of relevant stakeholders. It will oversee plans, progress and budgets and provide guidance for the project's consistency and synergy with the other on-going development projects.
  - Project Management Unit (PMU) will be headed by Secretary, Environment Department or his/her nominee, as the National Project Director. It will be established under the Climate Change Centre to ensure timely attainment of project objectives and results and maintain long-term vision and direction. It will provide oversight to project financing, spending, staff recruitment, contracting services, under the supervision of IUCN as the accredited entity.

The unit will ensure that the GCF guidelines are strictly followed and adhered to in line with IUCN's accreditation conditions.

- NGOs and Community-Based Organisations (CBOs) to support field implementation AJKRSP will implement the community support activities through CBOs. The CBOs will be engaged as partners for their active participation in planning, implementation and monitoring.

- Contracting and sub-contracting arrangement with executing agencies
- Implementation of Environmental and Social Safeguards according to the IUCN Environment and Social Management System (ESMS)

The project will run for five years. A detailed timetable will be developed as part of the design of the full proposal.

Financial and operational risks and mitigation measures

As the Accredited Entity, IUCN will direct the project management, implementing and executing entities on appropriate environmental and social safeguards using IUCN's Environmental and Social Management System (ESMS.) This system includes standards for biodiversity, involuntary resettlement, cultural heritage and access.

Risk	Mitigation
Negative social impacts include the risk of women and the poor being excluded as public and other official meetings are mostly dominated by men and local powerful actors	Focused discussions have been held with women and poor in the target villages during the pre-feasibility study phase to elicit their views and concerns embrace cultural diversity and gender equity. Further consultations and engagement will take place during the design of the full proposal.
Site selection and design of project interventions are either inappropriate or not affordable	The project has provisionally included interventions focused on diversifying livelihoods and improving incomes, and this will be developed further during the proposal development period.
Local communities voluntarily opt to focus on activities that yield an immediate return rather than climate change resilient forestry, agriculture and conservation activities	Early engagement and awareness raising about appropriate activities will be undertaken in the proposal development phase. A participatory approach will be taken to better understand the goals and priorities of farmers. Where there are different priorities between community members, negotiation and conflict resolution measures will be used. Where there are contested resource rights, appropriate government and community-based conflict resolution and clarification activities will occur. Issues of weak tenure and gender inequality present a risk, and will need to be mitigated when designing interventions
Displacement of threat, such as protecting forests displaces timber harvesting to non-target sites	Environment safeguarding processes will be followed to ensure that relevant and appropriate actions are identified to avoid these risks. The principles and practices of Land Degradation Neutrality will be used to mitigate against this risk
Lack of political and administrative buy-in	The proposal has, and will be further, developed with the full involvement and integration of political and administrative bodies. The policy, capacity and preparedness component will ensure elected representatives and officials are full involved and bought in to the project. It is acknowledged that the political environment is subject to change, and this risk will need to be kept under review as the full proposal is developed and once the project is underway.
Limited availability of local technical expertise	This is a potentially serious risk. As well as an experienced project leader, who will ensure that government staff are motivated and have adequate access to technical support and training, national capacity will be strengthened

	through close engagement between IUCN and Ministry of Climate Change. A cadre of experienced consultants and available international IUCN staff and IUCN Commission experts will need to be available to full gaps should they arise. Succession and contingency plans will be developed as part of the full project design.

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

Overall Project Results for mitigation and resilience

Provisional estimates of the number of beneficiaries have been made, and these will be refined and confirmed during the proposal development phase. They are:

- Expected beneficiaries more resilient to climate change
  - Direct beneficiaries: 0.3 million
  - Indirect beneficiaries: 10 million (2.12 million up-stream and 7.88 million down-stream)

The costs and benefits of forest landscape restoration are known to be site-specific, as are the likely carbon emissions reduced or avoided. Provisional estimates, which will be refined and confirmed during the proposal development phase, are:

- Estimated total tonnes of CO_2 eq to be avoided or reduced per annum: 1.5 million tCO_2eq over the life of the project (0.3 million tCO_2eq per annum) and 9 million tCO_2eq over 30 years.

Project results aligned against GCF Investment Areas for mitigation and resilience

Forestry and land use

- Contribution to low-carbon development pathways by avoiding or reducing CO_2 equivalence through:
  - Enhancement of forest carbon stock,
  - Reduced deforestation and
  - Reduced forest degradation,
  - Improved management of land and forest areas

Health and well-being, and food and water security

- Climate change resilient agriculture, farm forestry and horticulture within the contact of forest landscape restoration, leading to increased resilience of health and wellbeing, and food and water security;
- Increased climate change resilience and enhanced livelihoods of the communities including women, children, older people, disables and poorest of the poor.
- More efficient use of water through implementation of demand management and efficient irrigation systems

Ecosystem and ecosystem services

- Protected areas will be better managed and more resilient to climate change.
- Natural and modified freshwater and forests resources will be utilised more sustainably.
- Wetlands will be protected, managed and restored and declared as Ramsar sites

Project results aligned against GCF Investment Criteria

Paradigm shift

- Potential for scaling-up and replication (e.g. multiples of initial impact size)

  Income obtained from income generating project activities, capacity build through training and awareness raising will motivate the communities for replication of project activities. The State will continue replication of the demonstrated activities by making its Climate Change Centre an integral part of its P&DD and supporting climate change resilient sectoral activities from its own sources and with the support of Federal Government, other donor agencies, private sector organizations, NGOs and local communities.

- Potential for knowledge and learning

  The project would result in creation of significant amounts of knowledge, learning and awareness which would provide learning opportunities especially in the areas of ecosystem services and the multiple benefits of land rehabilitation. A knowledge platform and training institutes on climate change resilience, forest landscape restoration, and agriculture/farm forestry/horticulture within the context of forest landscape restoration, would also be supported.

- Contribution to the creation of an enabling environment: The enabling environment created through standards, capacity building and awareness raising will support replication of the project.

Sustainable development

- Economic co-benefits
  - Estimated total number of jobs created through direct activities related to the project, and better and more efficient

use of ecosystem goods and services: 10,000
- Estimated amount of foreign currency savings: US$0.5 million annually
- Amount of government's budget deficits reduced: Negligible

- Social co-benefits
  - Improved access to education to about 40,000 children with 30% female contribution, through climate change preparedness activities
  - Improved regulation or cultural preservation of population of about 50,000 peoples by reducing their migration to bigger towns and cities, as a result of improved and more efficient use of ecosystem goods and services
  - Improved health and safety of about 100,000 people due to better nutrition and more availability of health, better drinking water, sanitation and hygiene measures. Currently, the source of drinking water is mostly springs. Better ecosystem management will provide more clean water in these springs. The role of better sanitation and hygiene measures particularly in rural areas can be taught during capacity building workshops.
- Environmental co-benefits
  - Improved soil quality in about 200 villages due to reduced siltation, soil and water erosion.
  - Improved biodiversity of fauna and flora, particularly by increased population of about nine threatened species of flora like hazelnut (*Corylus spp.*); Bhoj patar (*Betula utilis*); Himalayan yew (Taxus *baccata*); maple (*Acer accuminatum*; & *Acer caesium*); Pasherr (*Parratiopsis jacquemontiana*); oak (*Quercus ilex*); tarambba (*Fagopyrum esculentum*) and fauna such as musk deer mainly due to reduced deforestation and forest degradation.
- Gender-sensitive development impact
  - Proportion of men & women in jobs created: Beneficiaries will include at least 30% women, ensure by the implementation of social and gender inclusion measures
- Relationship to SDGs (include results.)
  - SDG 1: Targeting the poor as its priority target groups: About 25 per cent of the population of project areas is poor and the project will target these as a priority to increase and sustain their productivity from agriculture, forest and water resources.
  - SDG 2: Reducing hunger, supporting to achieve food security and improved nutrition and promote sustainable agriculture: Sustainable agriculture including horticulture and forest management will improve food security.
  - SDG 5: Supporting gender equality and empowering women and girls: Project beneficiaries will include at least 30% women.
  - SDG 8: Promoting sustained, inclusive and sustainable economic growth, productive employment and decent work: The project will result in increased job opportunities
  - SDG 12: Targeting sustainable production patterns: The project will promote sustainable production patterns
  - SDG 13: Taking urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy: Climate change mitigation is among the benefits of the project.
  - SDG 15: Protecting, restoring and promoting sustainable use of terrestrial ecosystems: The project will demonstrate sustainably managing forests, combating desertification, halting and reversing land degradation and biodiversity loss.

Needs of recipients

The proposed project interventions will reduce climate change vulnerability of the people and environment in the State. Pakistan has a large balance of payments deficit which is a strain on the country's finances. Exports are half of its imports (46% in 2016) and the trade deficit in 2016 was 9% of the GDP[8]. With a debt of about 62% of its GDP (IMF, 2015), it is difficult for the government to invest in climate change mitigation or adaptation. However, the need for investment to tackle climate change vulnerabilities of the State and downstream communities and regions in Pakistan is urgent. The State is entirely dependent on grants from the federal government for development capital and current expenditures as it does not have a revenue base of its own.

Climate change is a new issue for the State. Climate change impacts are being witnessed and awareness started to increase during the floods and landslides in 2010, 2011 and 2014. A Climate Change Centre has been established under P&DD with the support of the Asian Development Bank. The Climate Change Policy for the State has been drafted but departments of the State administration need institutional strengthening and improvement in implementation capacity.

Country ownership

- This proposal is has coherence and alignment with the Pakistan's national climate strategy and priorities for mitigation and adaptation
- The National Climate Change Policy 2012 is the overarching guideline for climate change initiatives. The activities

[8] CPEC AND Pakistan's Balance of Payment, http://www.southasiaathudson.org/blog/2016/12/20/cpec-and-pakistans-balance-of-payments

proposed in the project are fully in conformity with the National Climate Change Policy 2012.

- Stakeholders were consulted during the preparation of this proposal. The project design was shared with the relevant stakeholders during two consultative workshops held at Muzaffarabad on 24th January 2017 and 14th February 2017. The project was also discussed during workshops in Rawlakot and Mirpur on 22 March 2017 and 24 March 2017, respectively. Individual meetings were also held with relevant departments to take their inputs for the project initiatives

Efficiency and effectiveness

- The financial rate of return of the project is estimated to be 17% and 6% with and without project inputs for a period of 30 years. This will be refined and confirmed during preparation of the full project proposal,
- It estimated that the project interventions will result in carbon sink or CO_2 removals of about 9 million tCO_2 equivalent over a period of 30 years. This will be refined and confirmed during the preparation of the full project proposal.

C. Indicative financing / Cost information (max. 3 pages)

C.1. Financing by components (max ½ page)

Please provide an estimate of the total cost per component and disaggregate by source of financing.

Component	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
1. Forest Landscape Restoration	33.000m	18.000m	Grant	15.000m	Grant	Forest, Wildlife & Fisheries Department
2. Wetland protection, management and restoration	14.477m	9.477m	Grant	5.000m	Grant	Agriculture, Irrigation & Environment Department
3. Water demand management	12.000m	8.000m	Grant	4.000m	Grant	Agriculture & Irrigation Department
Indicative total cost (USD)	59.477m	35.477m		24.000m		

C.2. Justification of GCF funding request (max 1 page)

With debt of about 62% of its GDP, Pakistan is among the most indebted countries in the world. This very high level of indebtedness places serious constraints on the Government's ability to finance or borrow to invest in climate change adaptation and mitigation. However, there is a great need for investment to adapt to the increased occurrence of climate change impacts in Pakistan, as well as establish a pathway for low carbon development. Government budgets are stretched and domestic public finance is not available at the scale required to affect a long-lasting solution.

The project targets highly vulnerable rural populations in remote areas in the State that are prone to climate change risks, more than half of whom are women and dependent on subsistence agriculture. Given the small size in population, socio-economic standards and remote location of these communities threatened by climate change risks, there is very little incentive for Pakistan's private sector to invest in these types of interventions. The key constraints to private sector development in Pakistan are weak regulatory structures, poor property rights protection and contract enforcement, ineffective policy and legal framework for private sector investment.

Other sources of finance are also not available or easily accessible. Pakistan, therefore, needs GCF funding to effect a transformational change towards reducing vulnerability to the effects of climate change as well as securing a low carbon development pathway.

Forest related activities (mostly in State forests) and flood management activities will not result in cost recovery. However, the financial models for activities to promote sustainable agriculture including irrigation, farm forestry, horticulture and livestock show that sufficient revenues will be generated for the activities to be self-sustaining for beneficiary smallholder farmers. Issues around whether they can be self-sustaining from both financial and environmental perspectives will need to be addressed through a in the way the agriculture sector invests, with greater emphasis on protecting environmental services, which will need to be enabled by relevant policy frameworks.

A grant from the GCF is critical because the State and national government does not have the resources to initiate the activities which will reduce GHG emissions and increase climate change resilience.

A primary concern is the loss of existing government investments because they do not include climate resilience measures. Examples include:

- Sector agencies at the State and local levels operate largely on sector specific interventions without considering climate resilience measures, due to lack of resources, technical knowledge and low motivation of the government. Interventions such as data collection, forest trees seedling production, and plantation establishment are often implemented without climate resilience measures. Limited soil conservation measures, fire control measures, wetland protection and management, on-farm water management, rainwater harvesting, increase efficiency of irrigation systems, awareness raising, training, community engagement and policy regulation support for climate resilience are often absent from such sector specific investments, putting them at risk.
- Multi-sector coordination operates at a basic level, if at all. The focus of the sector institutions is on infrastructure and other development activities without an emphasis on the integration of climate change resilience, conservation and sustainable natural resources management considerations into their respective sector planning processes in watersheds. As such, these investments are at risk.
- The Forest department in particular is likely to continue making and implementing forest management plans which do not consider sustainable forest management, carbon sequestration and restoration of ecosystem goods and services.
- Communities are not well prepared to respond to climate change and associated disasters. Therefore investment in community development is at risk of climate change and associated disasters and may result in potential loss of government investments.

GCF funding will address these concerns by adding climate resilience and carbon mitigation measures to existing government investment. Approaches such as Forest Landscape Restoration (FLR), funded by GCF, will add value to existing forest management investments, climate-proofing them. Improvement of the management of protected areas and introduction of innovative mechanisms like PES and REDD+ to improve conservation of globally significant biodiversity, funded by GCF, will add to existing government investment, climate proofing these ecosystems and the goods and services they provide. Climate-proofing on-farm water management, including increased efficiency of irrigation systems, and rainwater harvesting, funded by GCF, will be additional to existing government and private investments, adding climate resilience and emissions mitigation features to such investments. Developing ways of increasing soil productivity, sustainable agriculture and horticulture as per sustainable land management, using GCF funding, will add resilience and safeguard these investments against climate change while improving emissions reductions. Using GCF funding to ensure wetlands conservation, protection and management is climate proofed will add to the value these important ecosystems bring to increasing overall resilience against climate change for the people of AJK.

The level of concessionality can be seen by the proportion of grant requested to co-financing is 68% to 32%, demonstrating a significant commitment from co-financers. The requested GCF grant of $35.477m therefore represents a cost of:

- $3.94 per tonne of carbon removed or avoided (over 30 years)
- $118 per direct beneficiary
- $3.47 per indirect beneficiary

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

The Climate Change Centre at the State level will be fully embedded and able to run effectively after the close of the project because financial resources will be allocated under the State ADP. The expected operating and maintenance cost of Climate Change Center will be around Rs.20.0 million annually, including salaries of staff, operational costs of the Center and capacity building activities, which would be met by the State governments. The project has considered four key aspects of sustainability:

Institutional sustainability

The project builds primarily upon existing institutional structures and mandates of the government agencies. Capacity building is expected to be institutionalized and continued after the project.

Financial sustainability

The project will support community level actions to disseminate appropriate mechanisms for financing on-the-ground watershed management activities. Steps will be taken to avoid building any dependencies on external inputs amongst the local stakeholders. The financial sustainability of the project's impacts will be further assured by the project's focus on a business-based approach. The ideal situation is to develop the business aspect of the project into activities so that in the long-term, these same activities will become self-supporting and independent of external funding.

Social sustainability

The capacity building activities, networking and continuous field-level presence by the management agencies (state, private and civil society) will help achieve social sustainability of the project. The strong focus on building local knowledge, capacities and incentives and ensuring gender equity are expected to lead to social sustainability. The primary social impacts of the project will relate to the potential impacts the project may have on vulnerable community stakeholders like women, the poor and other traditionally marginalized groups.

Gender and social inclusion issues, including tenure, will be addressed during project design and using IUCN's Environmental and Social Management Framework and standards.

Environmental Sustainability

The primary purpose of this project is to achieve environmental sustainability in the State through the implementation of climate change resilient development and low-carbon development. Therefore, the majority of the environment impacts are positive. Where there may be negative environmental impacts, or interventions where the positive and potential negative impacts need to be balanced, such as irrigation (positive for emissions, potentially negative for sustainable land management), care will be needed during the design of the full proposal.

C.4 Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

Project ideas for GCF were discussed and shortlisted in the second board meeting of GCF-Board Pakistan held on 18th April 2016. The Accredited Entity (AE) i.e. IUCN is the member of the GCF-Board Pakistan. The project ideas were further shortlisted into a single proposed project in a meeting of Ministry of Climate Change, Government of Pakistan (NDA) with major stakeholders in the AJ&K held on 14th February 2017 in Muzaffarabad, AJK.

The board decided that IUCN would be requested to act as the Accredited Entity for this proposal. The Ministry in collaboration with the National Rural Support Program also organized a stakeholder consultative workshop on GCF on March 13-14, 2017 in Muzaffarabad. Stakeholders were consulted during the preparation of the project.

The project design was shared with the relevant stakeholders during two consultative workshops held at Muzaffarabad on 24th January 2017 and 14th February 2017. The project was also discussed during workshops in Rawlakot and Mirpur on 22 March 2017 and 24 March 2017, respectively. Individual meetings were also held with relevant departments to take their inputs for the project initiatives.

During the preparation of funding proposal, extensive stakeholder consultations will be held. Local communities, other local stakeholders and State level stakeholders including government departments and NGOs will be involved in consultations for project design and development.

D. Supporting documents submitted (OPTIONAL)

☒ Map indicating the location of the project/programme

Included at Annex 1

☐ Diagram of the theory of change

☐ Financial Model

☒ Pre-feasibility Study

Included at Annex 2

☐ Evaluation Report of previous project

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents?
Yes ☒ No ☐

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes ☒ No ☐

Annex 1: Map of Azad Jammu and Kashmir