

ESMF for Climate Resilience and Rural Development Project: Global Learnings & Local Solutions



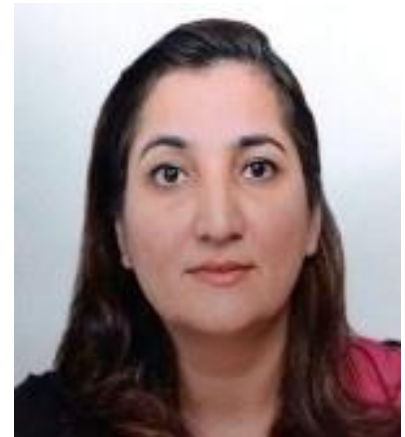
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“Scientists believe that we are the first human race to witness the impacts of climate change and we will be the last ones to do something about it.”



By Natalie Belew for [GlacierHub](#)



Glacial lakes, dammed by rocks and/or ice jams, can burst suddenly and cause catastrophic damage in nearby communities. Photo: [National Park Service](#)

PRESENTATION FLOW



Introduction



Project @ Glance



Methodology

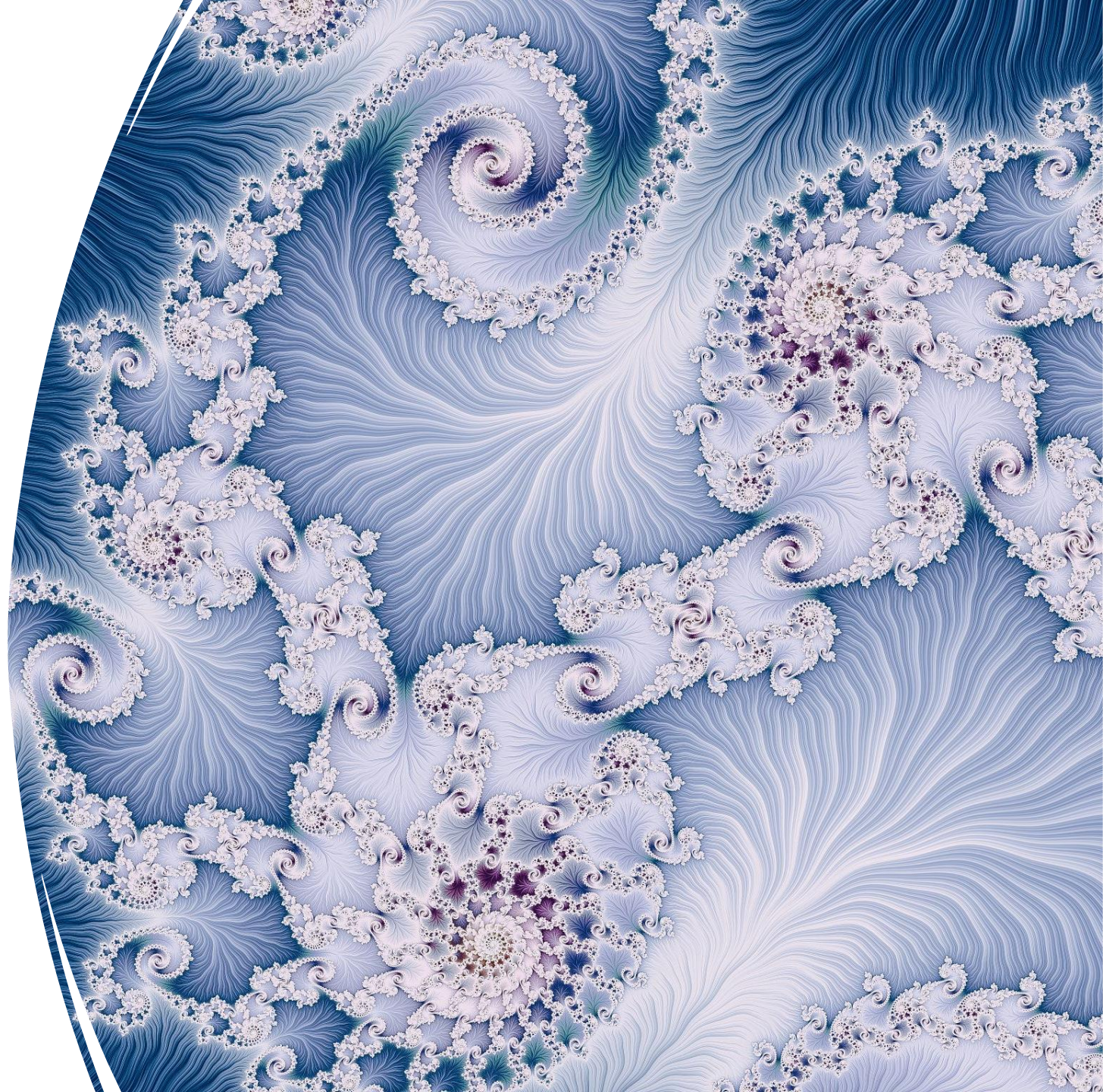


Findings

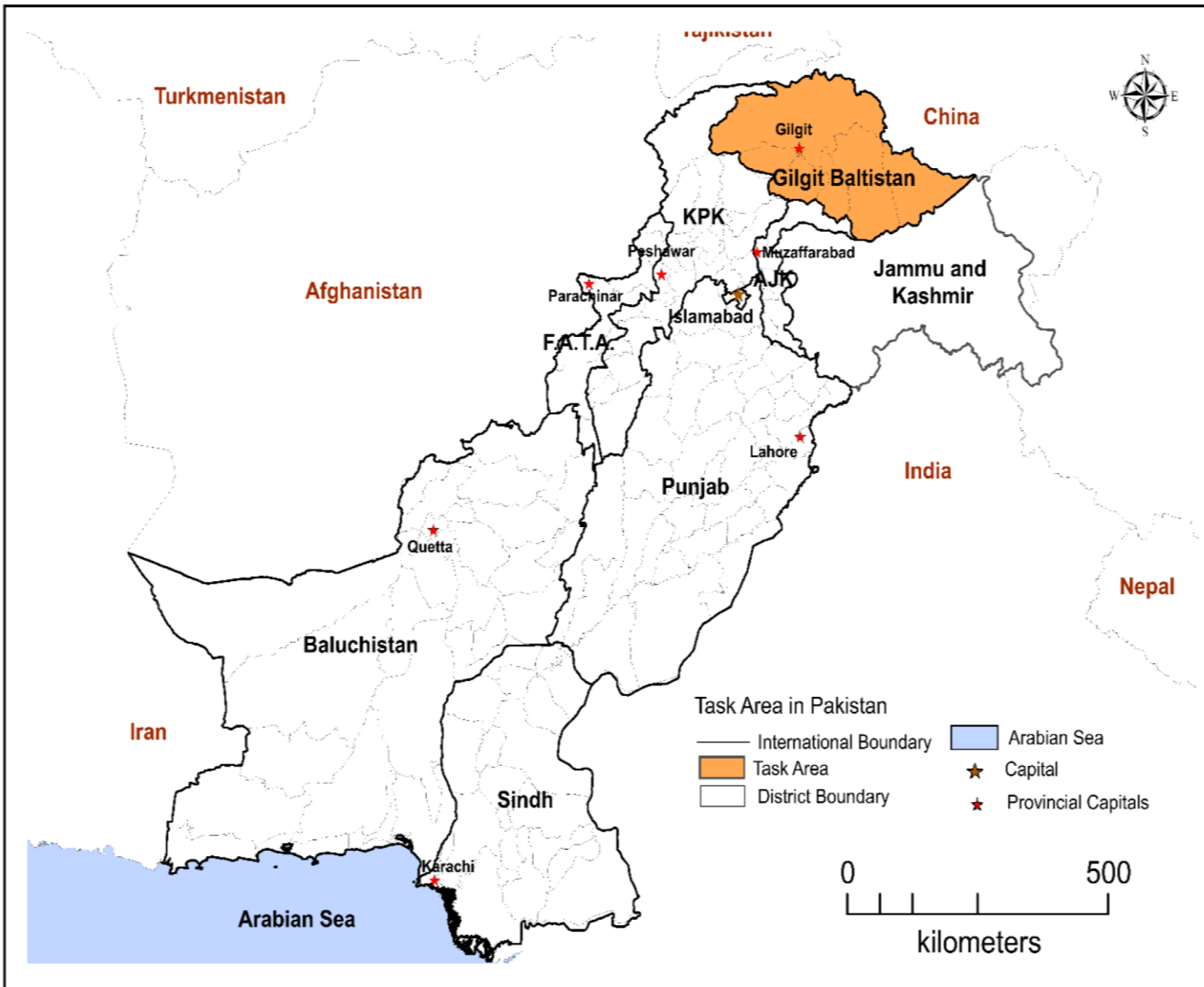


Questions and Answers

Introduction



Project Area



Gilgit Baltistan, Pakistan

Area: 72,971 square Km²

Population: 1.8 million (2017) and 18 people per square kilometres

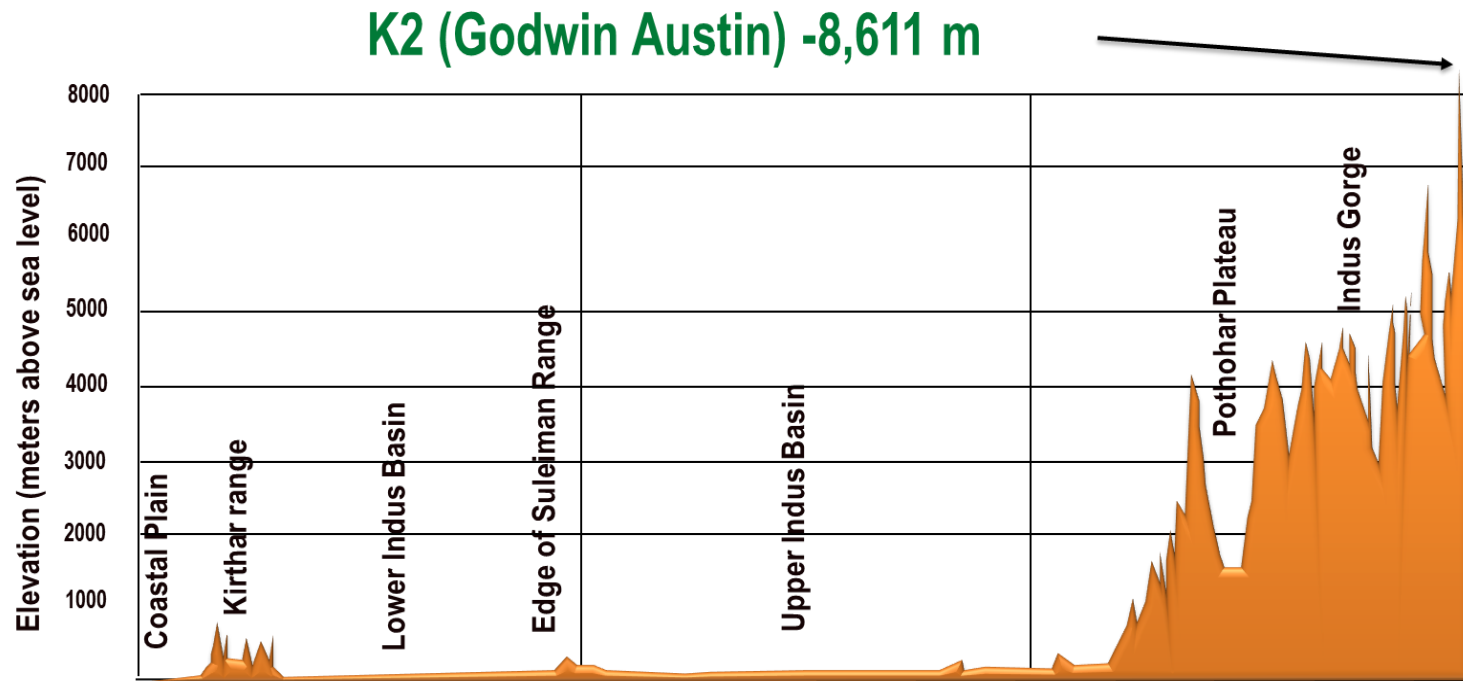
Administrative Setup: 10 Districts

Climatic Region: Moist temperate zone

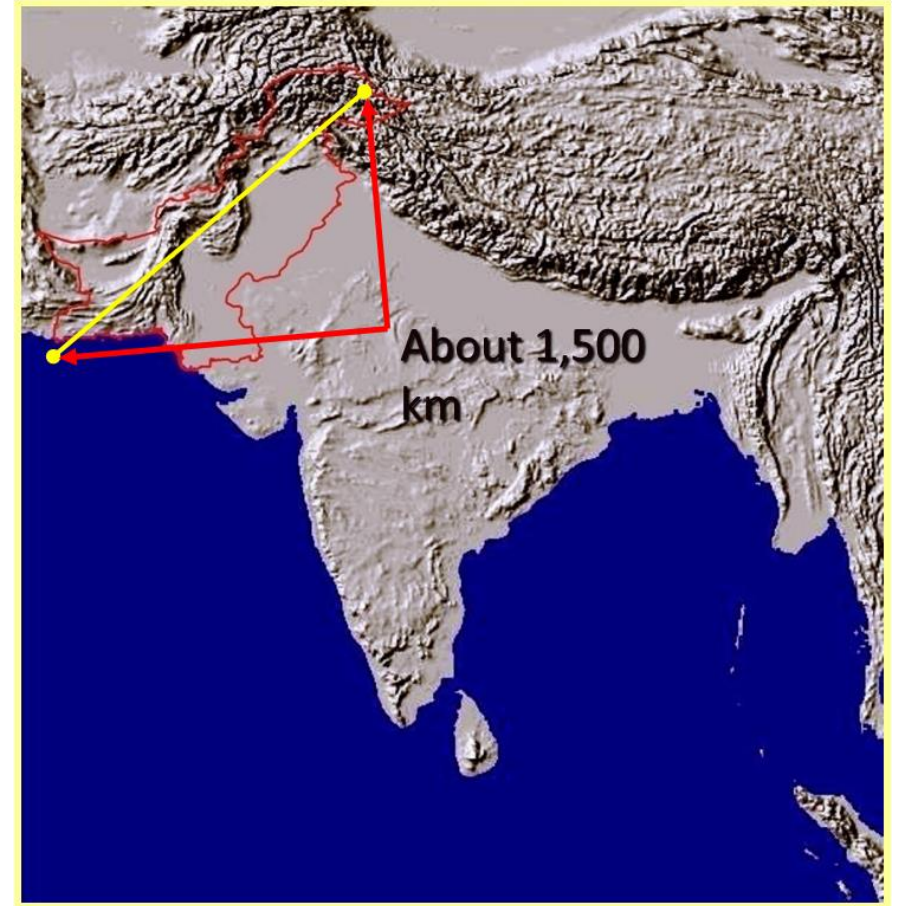
Peaks: 5 Globally significant-high peaks above 8000 m

Water Resources: 15000 Km², 5000 big and small glaciers, including three of the world's longest glaciers outside the polar region (Biafo, Baltoro, and Batura)

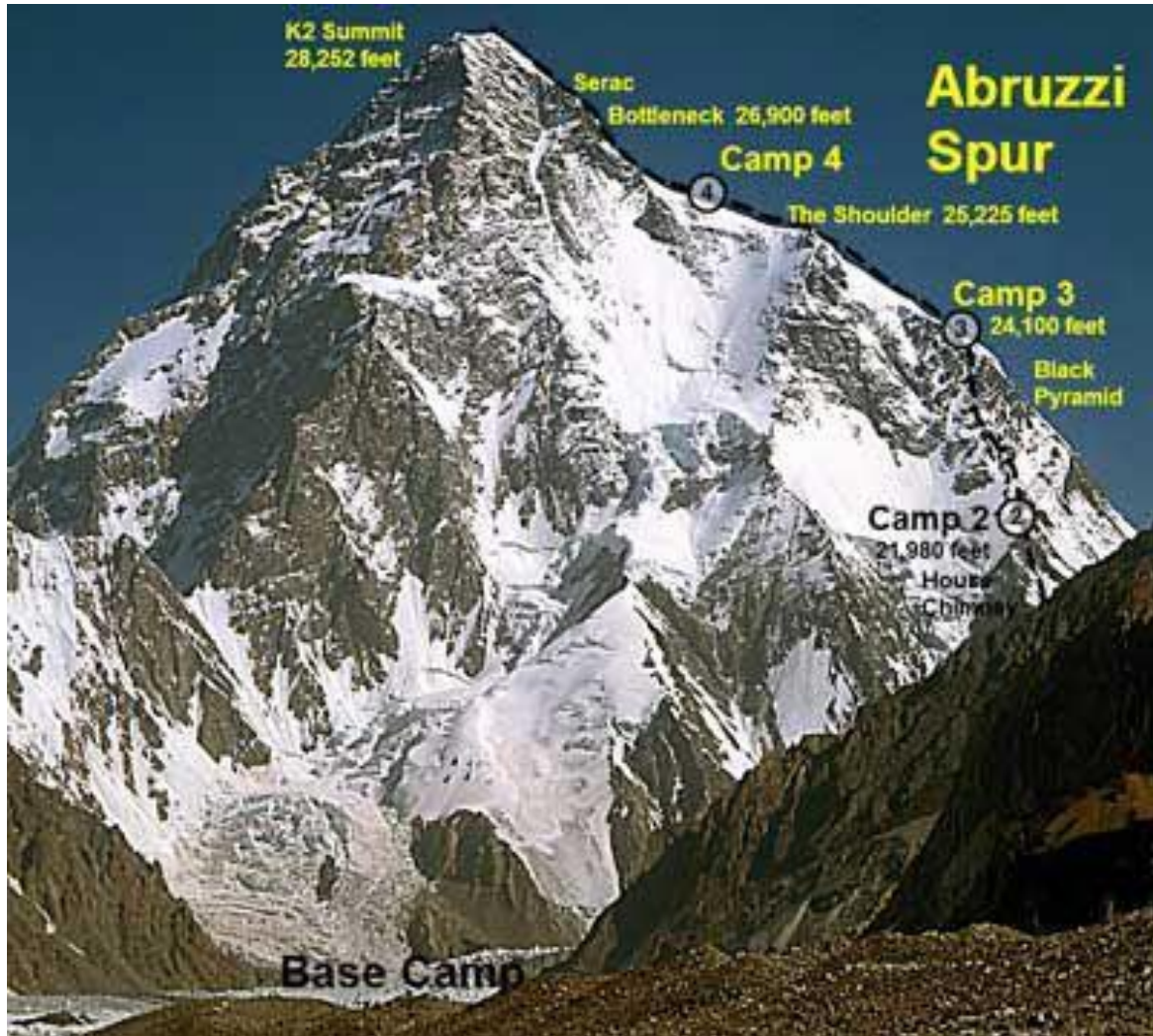
Geographic Limitations



1,500 km or 15 degrees



K 2



Challenges / Project Need

Water Supply

50 % of the population has perennial access

Sanitation

21% of the population do not have access to sanitation and 60 % to clean drinking water

Energy Access

No access to clean energy in far fledge/ off-grid communities

Natural Hazards

Non Engineered Houses

Climate Change

GLOF and Infrastructure Adaptation

Sabah

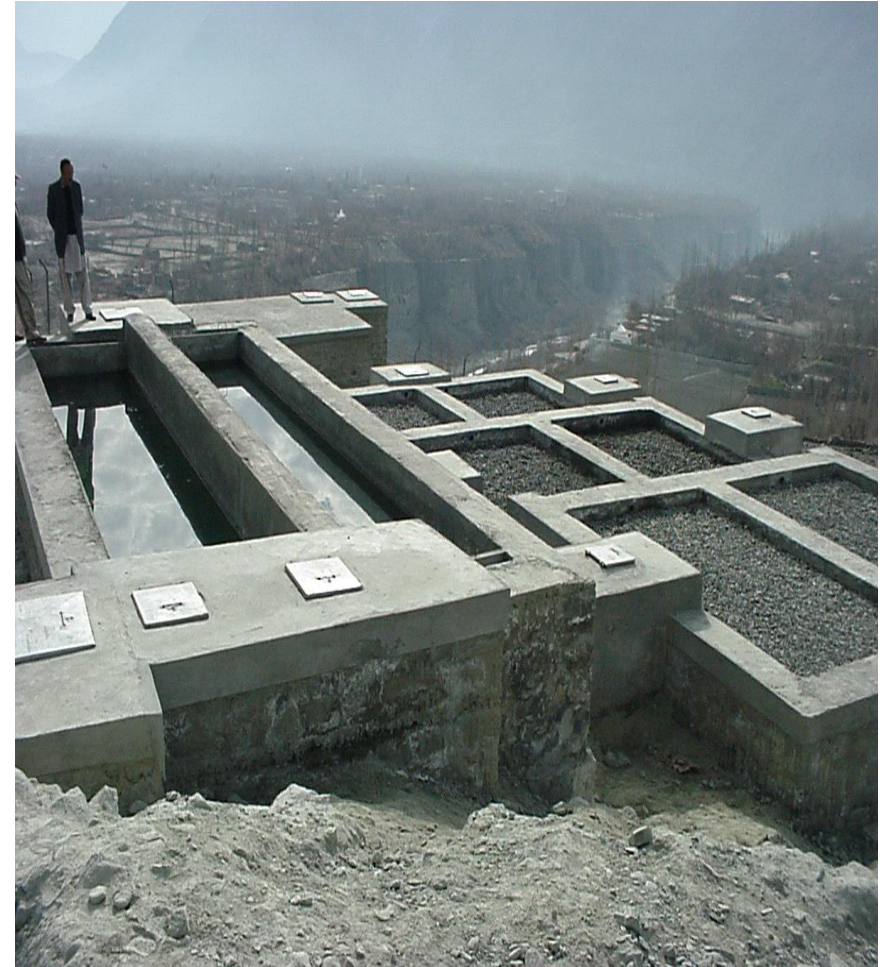
Source: Government of GB





Project @ Glance

| | |
|----------------------------|--|
| Title | Rural Development & Climate Resilience Project |
| Scope | <ul style="list-style-type: none">• Improve drinking water, and sanitation facilities• Energy-efficient housing• Decentralized electricity in off-grid areas |
| Location | Astore, Diamer, Ghanche, Ghizer, Gilgit, Hunza, Kharumng, Nager, Shiger, Skardu |
| Consultant | Geres France |
| Duration | 6 Years |
| Financing | Community Share, GOP (AFD Loan), AKDN |
| Executing Agency | Government of Gilgit Baltistan with AKF as executing agency |
| Implementing Agency | AKRSP AKAH |



Project Components

WATER & SANITATION

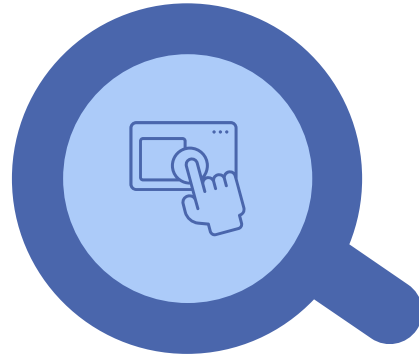
Drinking water supply scheme
– 117 Villages

Collective sanitation Model –
30 villages

ENERGY EFFICIENCY AND SEISMIC RESISTANT HOUSING

200 New construction
Rehabilitation program

Structural retrofitting of
existing structures



MICROHYDEL ELECTRICITY

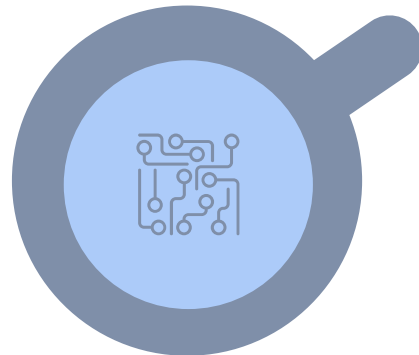
8 micro-hydel units in the
province

32 MW capacity

PROJECT DELIVERABLES

SUSTAINABILITY

Mainstreaming climate
change and Gender
Social mobilization and
governance
Private sector engagement
Financial inclusion



Sustainable Technology Selection



Upflow roughing filter for Sewerage Waste Treatment



Tyrolean weir technology for micro hydel at Water Streams at low flow of 10 m³ /sec



Water Storage and Water Supply from nearby water streams(lower energy consumption)



Energy conservation products for homes

Potential locations



Wastewater treatment at Aliabad



Helipad at Aliabad



Energy-Efficient Housing and Water Supply

Project Area Sensitivities

Households: 199,864

Temperature: -17 C to 43 C

Earthquake Zone: Entire area

Energy: low access and high cost

Unemployment: 70% of households

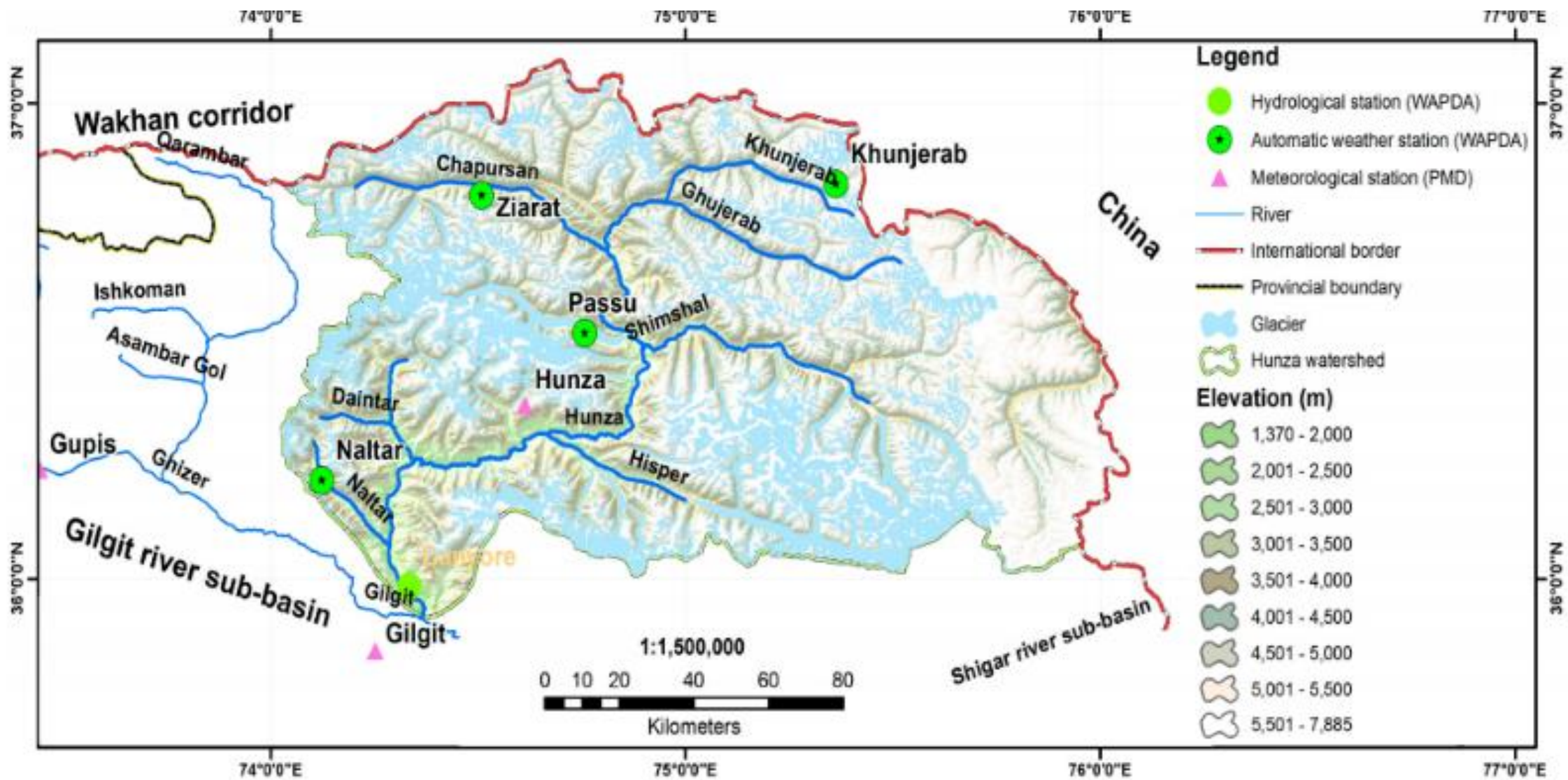
Per Capita GDP: 2,722 USD

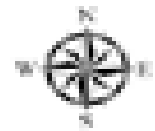
Biodiversity: 5 National Parks, 2 wildlife sanctuaries, 6 game reserves, and 48 Community Controlled Hunting Areas. A number of threatened species and Protected Forest.

Glaciers: 5000 big and small glaciers

Land Use: 90 % mountainous, 4 % forested, and 4.2% cultivable land

Air Quality: Poor in Winters





Mountains in Gilgit Baltistan

| | | |
|--------|--------|--------|
| 8611 m | 7925 m | 7665 m |
| 8125 m | 7852 m | 7285 m |
| 8068 m | 7821 m | 7273 m |
| 8047 m | 7795 m | 6889 m |
| 8035 m | 7788 m | 6262 m |
| 7952 m | 7742 m | |



■ Gilgit Baltistan ★ Important Cities

PROTECTED AREAS & INDICATOR WILDLIFE SPECIES IN GILGIT-BALTISTAN



- Musk Deer
- Black Bear
- Wild Ass
- Peregrine Falcon
- Chukar

- Himalayan Ibex (15,000)
- Astore Markhor (2,075)
- Markopolo Sheep (80 - 140)
- Blue Sheep (6,900)
- Ladakh Urial (250)
- Brown Bear (92)
- Snow Leopard (200)

CCHA's Key:
District wise:

HUNZA

- 01 Misger
- 02 Chupursan
- 03 KVO
- 04 Raminji
- 05 Sukhtarabad
- 06 Passu
- 07 Hussaini
- 08 Khyber
- 09 Shimshal
- 10 Gulkin

NAGAR

- 13 Bar
- 14 Sikandarabad/Jaffarabad
- 15 Gulmet/Minapin
- 16 Hoperi/Hisper

GHIZER

- 17 Yasin
- 18 Ishkoman
- 19 Qurumber
- 20 Sherqilla

GILGIT

- 23 Bagrote
- 24 Julial/ Barmas/ Sakwar
- 25 Kargah
- 26 Sai
- 27 Haramosh
- 28 Tannir

SHIGAR

- 31 Hudur
- 32 Khiner
- 33 Gais
- 34 Goherabad
- 35 Thore

SKARDU

- 37 Thak/ Niat
- 38 Bunur/ Gini
- 39 Nanga Parbat
- 40 Astore
- 41 Rupal
- 42 Mir Malik

ASTORE

- 43 Tannir
- 44 SKB/ Basho
- 45 Hussainabad/ Gole
- 46 Narfi/ Ghoru
- 47 Hoshey
- 48 Kanday/ Sailing

SKARDU

- 44 SKB/ Basho
- 45 Hussainabad/ Gole
- 46 Narfi/ Ghoru
- 47 Hoshey
- 48 Kanday/ Sailing

SHIGAR

- 46 Narfi/ Ghoru

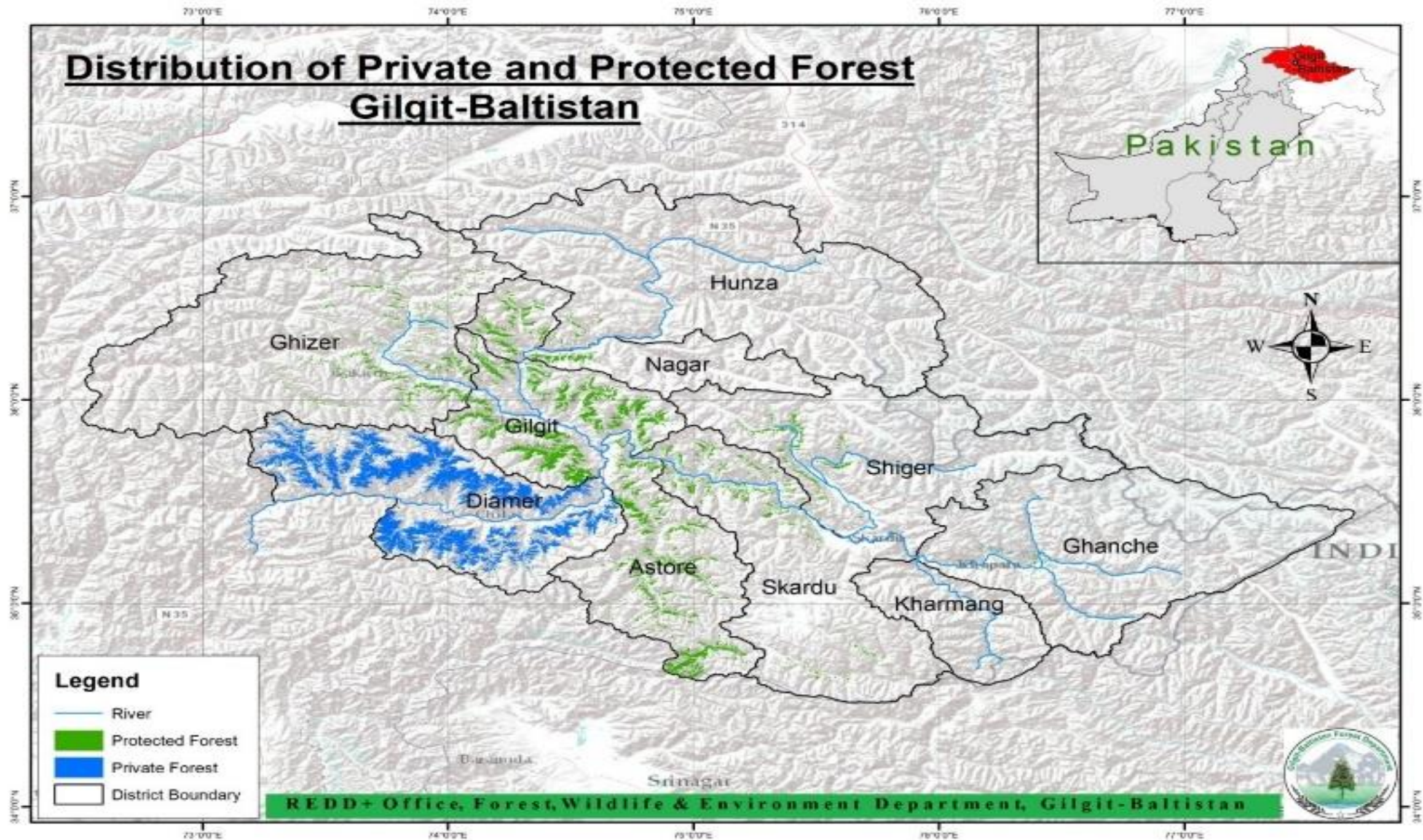
GHANCHE

- 47 Hoshey
- 48 Kanday/ Sailing



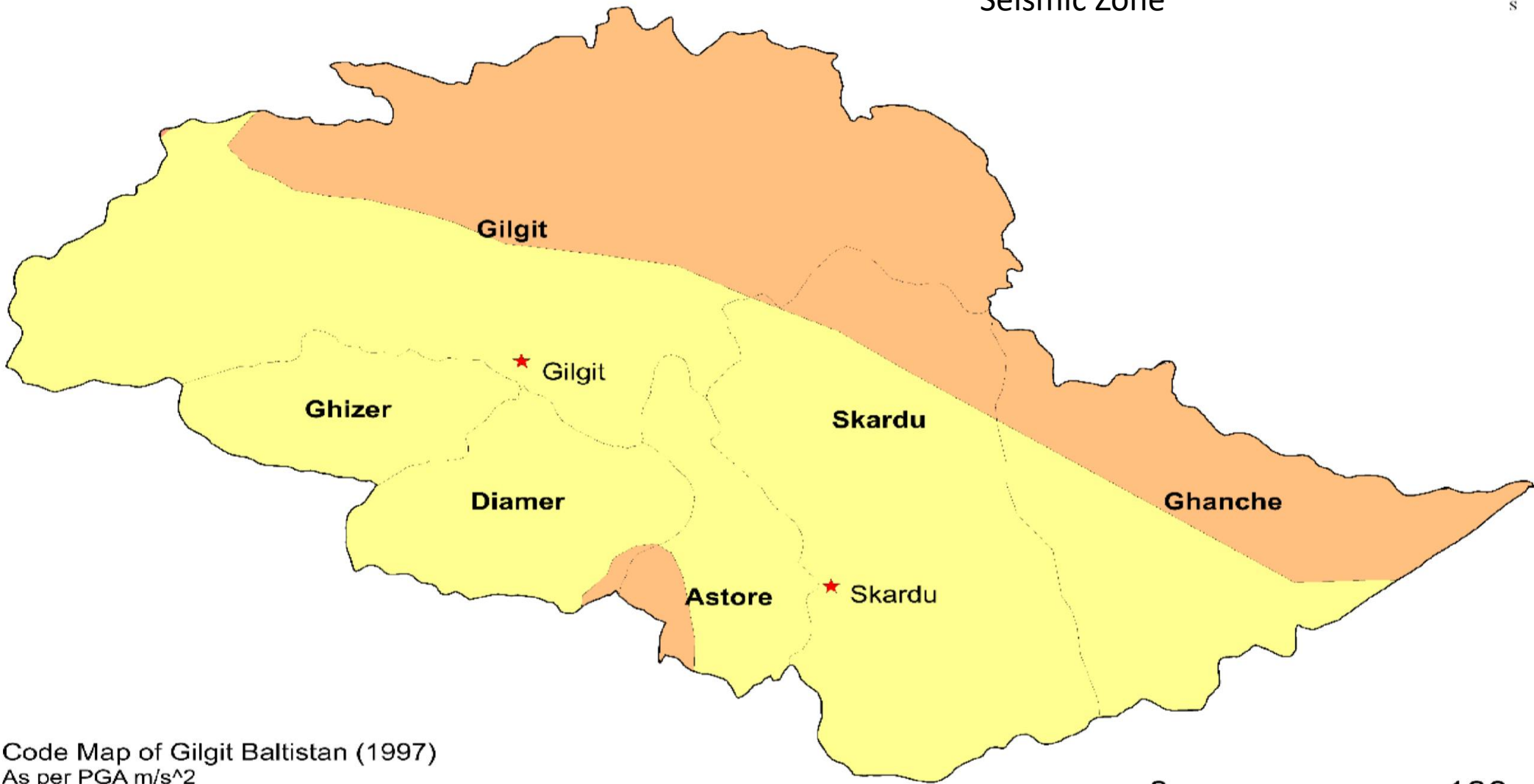
1:1,250,000

Distribution of Private and Protected Forest Gilgit-Baltistan



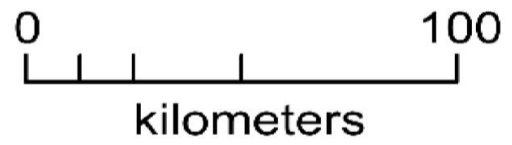


Seismic Zone



Code Map of Gilgit Baltistan (1997)
As per PGA m/s²

- Zone 3
- Zone 2B



Compliance Requirements

- The World Bank
- Agency De France Environment and Social Standards
- Gilgit Baltistan Environmental Protection Act
- National and Local applicable Legislations



World Bank Environmental and Social Standards

| ESS | Subject | ESS Applicability |
|--------|---|-------------------|
| ESS 1 | Assessment and Management of Environmental and Social Risks and Impacts | ✓ Yes |
| ESS 2 | Labour and Working Conditions | ✓ Yes |
| ESS 3 | Resource Efficiency and Pollution Prevention and Management | ✓ Yes |
| ESS 4 | Community Health and Safety | ✓ Yes |
| ESS 5 | Land Acquisition, Restrictions on Land Use and Involuntary Resettlement | ✓ Yes |
| ESS 6 | Biodiversity Conservation and Sustainable Management of Living Natural Resources | ✓ Yes |
| ESS 7 | Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities | No |
| ESS 8 | Cultural Heritage | ✓ Yes |
| ESS 9 | Financial Intermediaries (FIs) | No |
| ESS 10 | Stakeholder Engagement and Information Disclosure | ✓ Yes |

Methodology- Framework Approach

Site Visit & Data Collection

Finding Sensitive receptors



2

Stakeholder Engagement

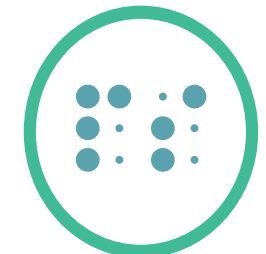
Communities and institutions



4

Mitigation

Generic Sector-specific Mitigations



6

1



Categorize

Project Categorization for further studies

3



Impact Assessment

Sector-specific impacts assessment

5



Recommendations

Recommendations

Stakeholder Engagement ESS 10



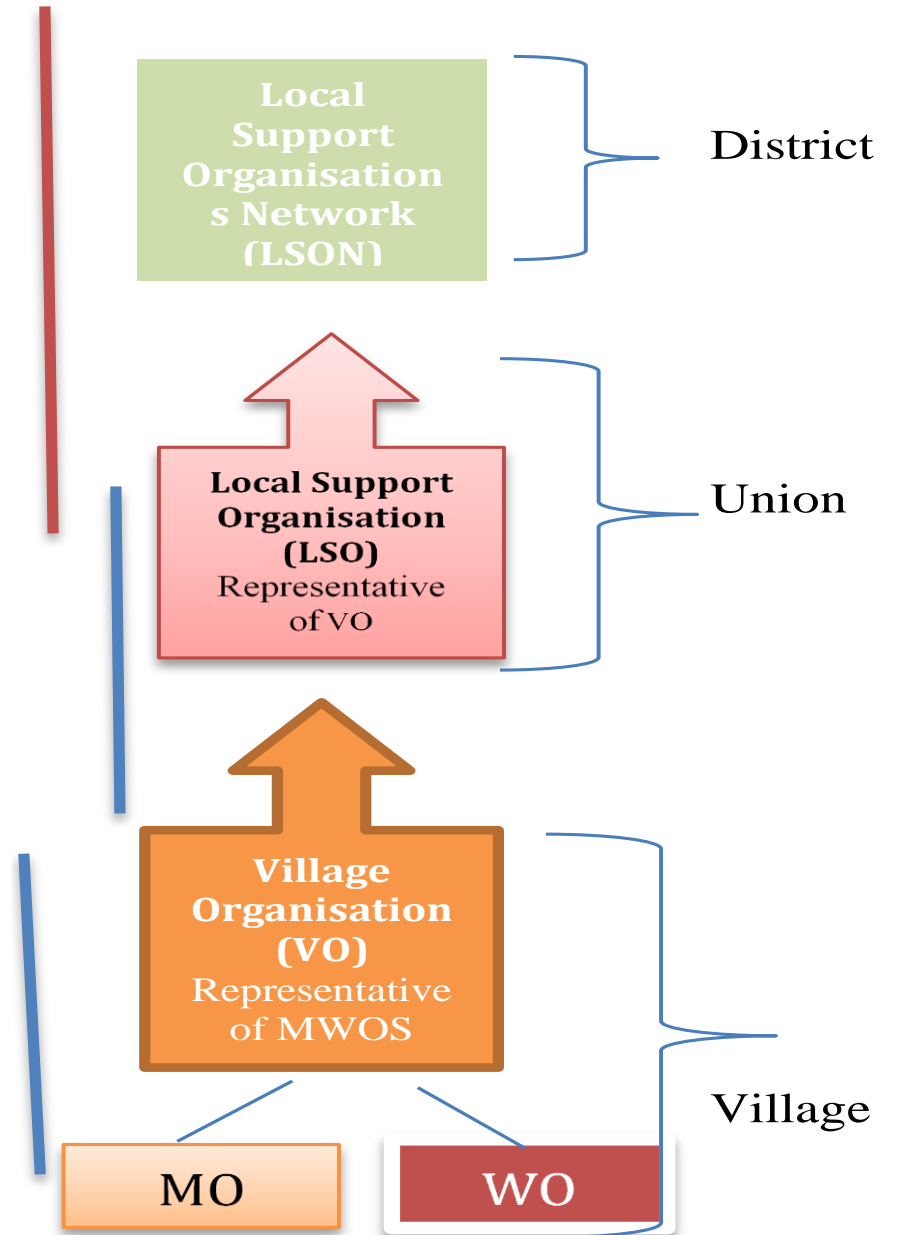
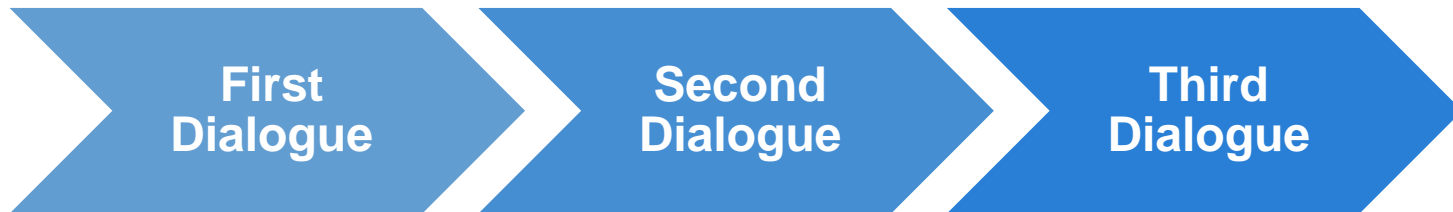
Community and Institutions



Stakeholder Engagement Plan

- Communities
- Institutions
- Government
- Private Entities
- Non-profits
- Civil Society
- Academia

Three-tier dialog Process



Findings



Sub Projects Screening – further EIAs ESS1

| # | Project Components | Gilgit Baltistan EPA | World Bank |
|------|--|--|------------|
| 1. | Drinking Water Supply and Sanitation Schemes, Sewerage Network and Treatment Schemes | IEE is required for water supply and treatment projects with a total cost of less than Rs.25 million. EIA is required for costs above 25 Million. | ESMP |
| 1. 2 | Energy efficient and seismic resistant housing | None | ESMP |
| 1. | Decentralized electricity | IEE is required for hydropower projects of less than 50 MW capacity. | ESMP |

Environmental and Social Impact

| RDCRP Components | Environmental Impacts | Ecological Impact | Socioeconomic Impacts |
|---|--------------------------|-------------------|-----------------------|
| Drinking-Water Supply Sanitation and Treatment | | | |
| Construction | Moderate Negative | Low Negative | Low Negative |
| Operations | Low negative | Negligible | High Positive |
| Energy Efficient and Seismic Resistant Housing | | | |
| Construction | Negligible | Negligible | Negligible |
| Operations | Negligible | Negligible | High Positive |
| Micro-hydel Power Supply | | | |
| Construction | Moderate Negative | Moderate Negative | Low Negative |
| Operations | Moderate to Low negative | Moderate | High positive |

Carbon Footprint

| Project Component | Carbon Emissions | Result |
|--|------------------------------------|---------------|
| Energy Efficient Seismic Resistant Housing | 50,000 ton CO ₂ eq/ yr | Reduction |
| Micro-Hydels | 8800 ton CO ₂ eq/ yr | Increase |
| Water and Sanitation | 48 ton CO ₂ eq/ year | Increase |
| Net | 34950 ton CO ₂ eq/ year | |

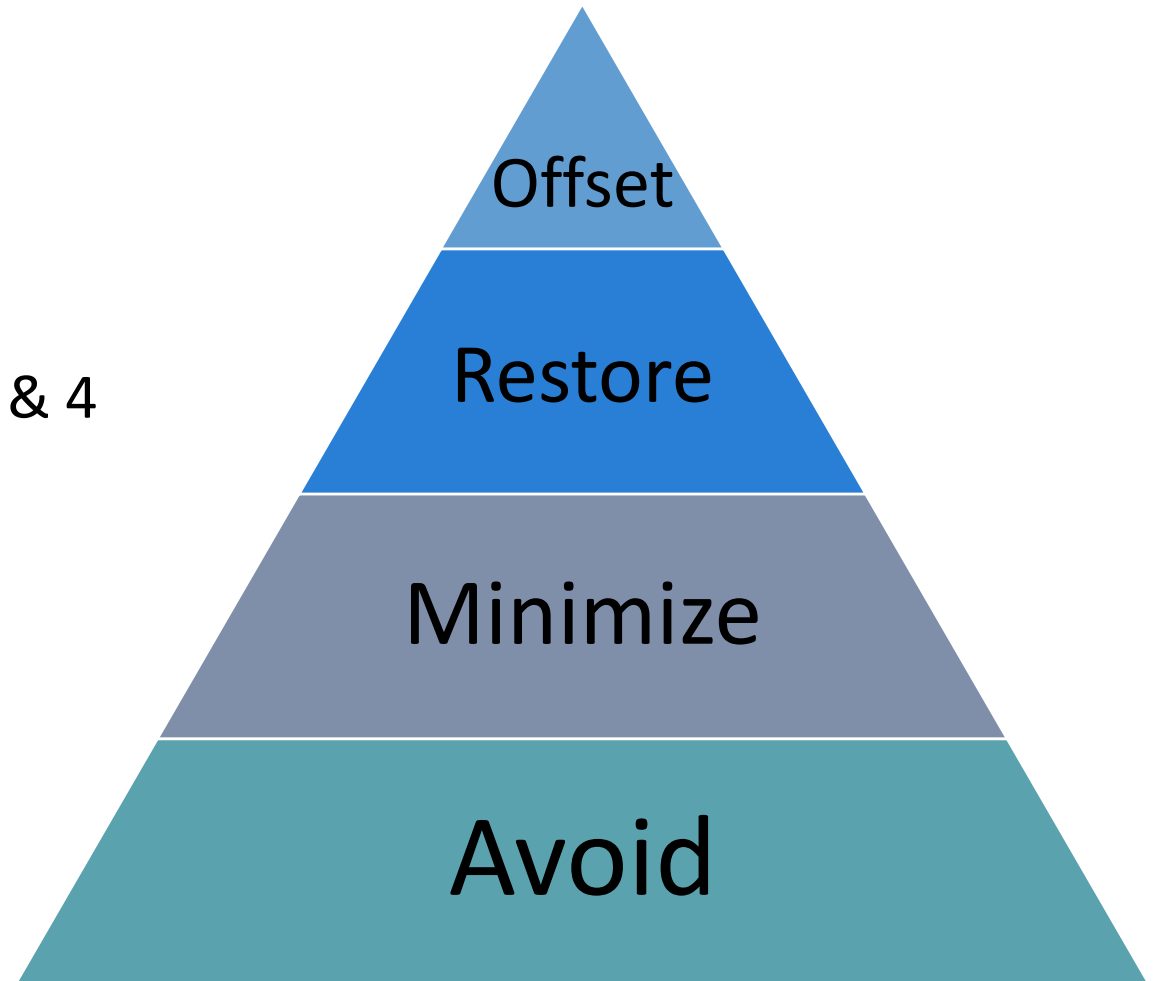
Without Mitigation

Mitigation Measures



Generic Construction Phase Mitigation

- Environmental Management Plan - ESS 3
- Socioeconomic Management Plan - ESS 8
- Ecological Management Plan - ESS 6
- Health and Safety Management Plan - ESS 2 & 4



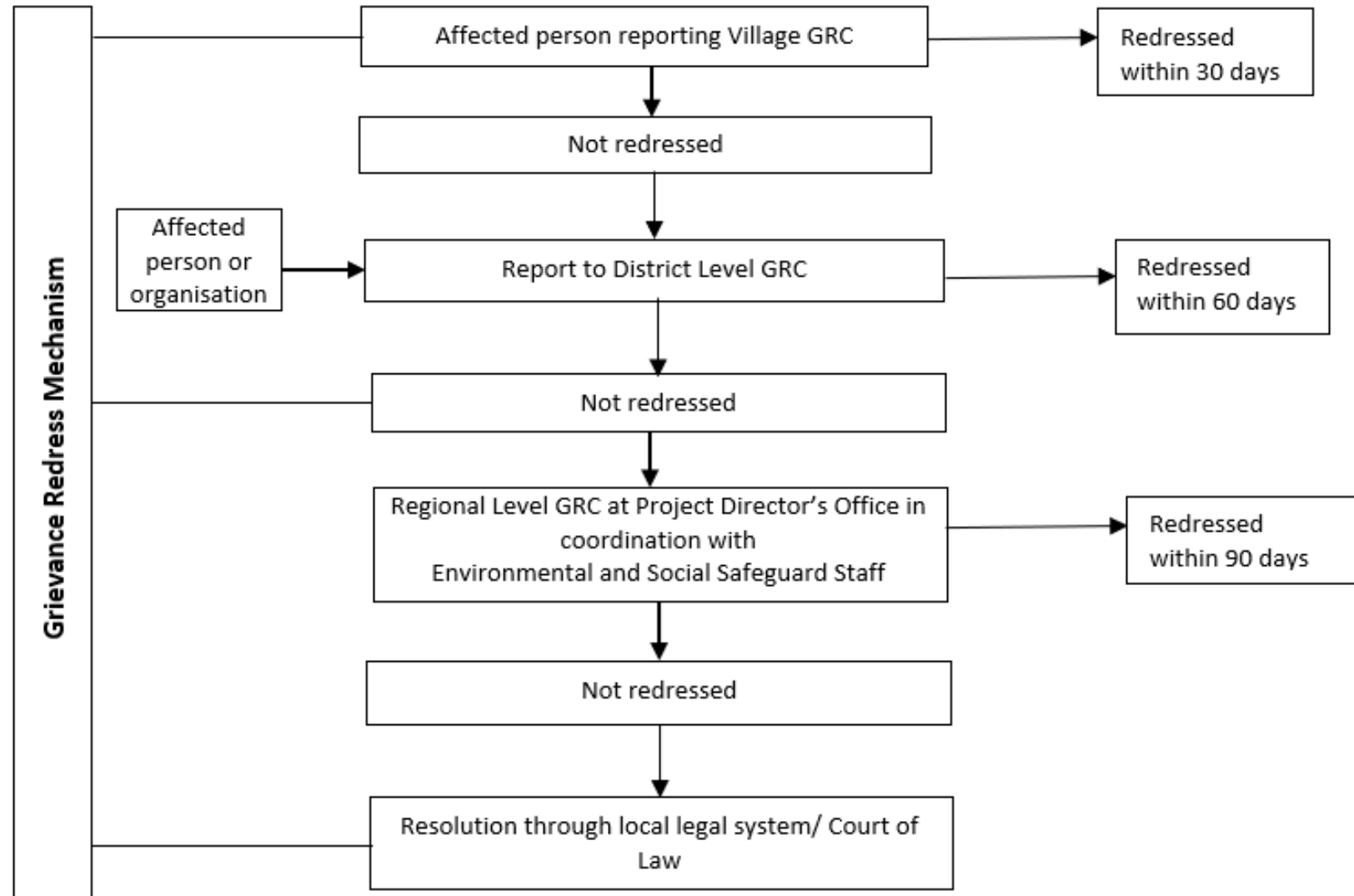
Land Acquisition & Resettlement Action Plans - ESS5



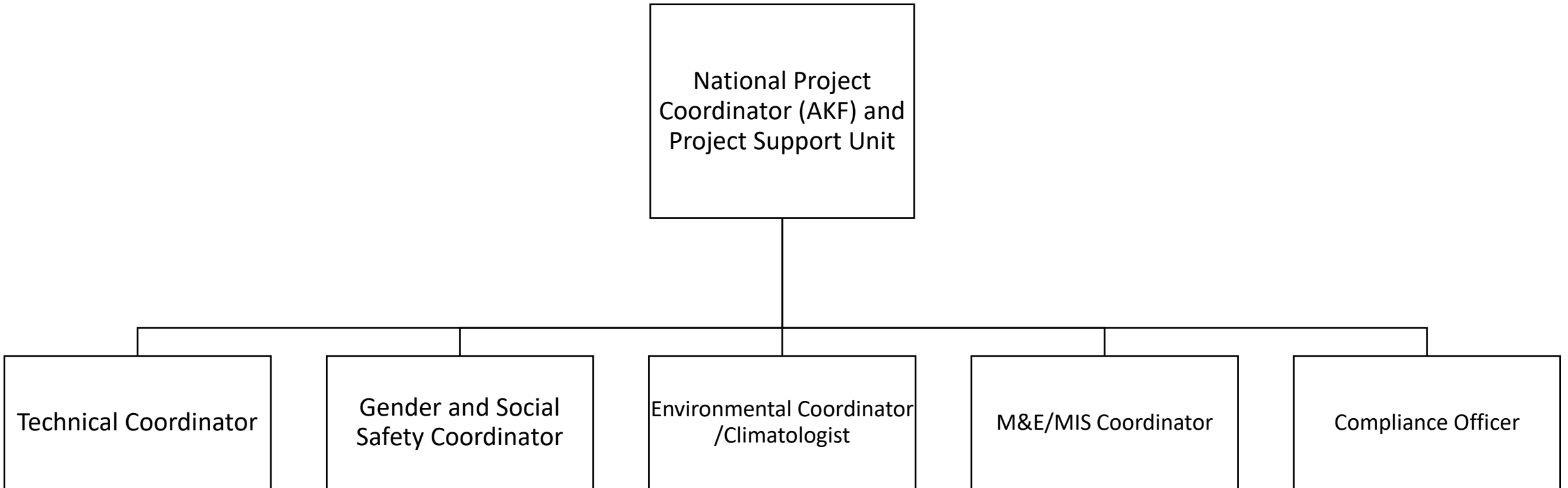
Environmental Monitoring – ESS 3

| Project Components | Phase | Number of Sampling Locations | Frequency | Monitoring Parameters NEQS 2010 | Total Samples |
|---|--------------------|---|-----------|---------------------------------|---------------|
| Construction of 117 Drinking Water Supply Schemes (DWSS) and 12 DWSS with SNTS | Construction Phase | 117 DWSS + 12 DWSS with SNTS= 129 sites | Biannual | Liquid Effluent | 258 |
| | | | | Drinking Water | 258 |
| | | | | Ambient Air Quality | 258 |
| | | | | Noise | 258 |
| | Operation Phase | 129 DWSS sites | Quarterly | Drinking Water Quality | 516 |
| Construction of 30 Sewerage Network and Treatment Schemes (SNTS) and 12 SNTS with DWWS | Construction Phase | 42 SNTS sites | Biannual | Liquid Effluent | 84 |
| | | | | Drinking Water | 84 |
| | | | | Ambient Air Quality | 84 |
| | | | | Noise | 84 |
| | Operation Phase | 42 SNTS sites | Biannual | Effluent from WWTP | 84 |
| Construction 8 MH projects for a total generation capacity between 1200 and 1300 kW | Construction Phase | 8 MH | Biannual | Water Flow in mainstream | 16 |
| | | | | Stream Water Quality | 16 |
| | | | | Ambient air Quality and Noise | 16 |
| | Operation Phase | 8 MH | Biannual | Water flow in mainstream | 16 |

Grievance Redressal Mechanism – ESS 10



Institutional Arrangement – ESS



Budget Allocation

| # | Description | Unit | Quantity | Unit Rate PKR | Total PKR |
|---|---|------------------------|--|---------------|------------|
| Staff | | | | | |
| 1 | Environment Coordinator and Climatologist | Months | 60(Covered in PC 1) | 200,000 | 12,000,000 |
| 2 | Gender and Social Safety Coordinator | Months | 60(Covered in PC 1) | 200, 000 | 12,000,000 |
| Environmental and Social Assessments | | | | | |
| 4 | ESMPs, IEE, EIAs and RAPs | Reports | | 18 1,000,000 | 10,000,000 |
| 5 | ESMPs, IEE, EIA Implementation | Months | Proposed as 2% of the infrastructure budget for each project component | | |
| Equipment | | | | | |
| 6 | Mobile Laboratory | Unit | | 1 10,000,000 | 10,000,000 |
| 7 | Maintenance and Calibration | Unit | | 1 3,000,000 | 3,000,000 |
| 8 | Air, Water, Stream Flow and Noise Testing | None | | 1 5,000,000 | 5,000,000 |
| 9 | Material on waste management protocols | Booklets and pentaplex | (500/book) | | 1,000,000 |
| 10 | Communication and awareness material for healthcare pentaplex | booklets /pentaplex | 10 /100 | | 1,000,000 |
| 11 | External Monitors (4 annual reports, 1 inception and 1 end project evaluation report) | Reports | | 5 500,000 | 2,000,000 |
| Total | | | | | 56,000,000 |

Outcomes/ Conclusion



Clean Energy Supply



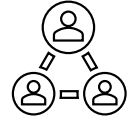
Energy Efficiency



Lower Carbon Footprint



Continual Stakeholder
Engagement



Water Access





**“The best way
to predict the future
is to create it”
Abraham Lincoln**

Acknowledgements



Aga Khan Agency for Habitat



AGA KHAN FOUNDATION

Let's continue the conversation!

Post questions and comments via chat in the IAIA22 platform.



#iaia22

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