NATURE-BASED SOLUTIONS IMPROVING CLIMATE RESILIENCE IN GILGIT-BALTISTAN

GABION PROTECTIVE BUND

Project: *Water Resource Accountability in Pakistan (WRAP)*
Donor: *Foreign, Commonwealth and Development Office (UK)*
Location: *Bank of Shyoke river, Kharkoo valley, Ganche district, Gilgit-Baltistan*
Individuals Benefiting: *XX*

In the wake of climate change, the Shyoke river, once a narrow waterway spannable by a spade, has expanded to a two km wide plain. This gabion protective bund is helping reclaim the inundated land. Indigenous species have been planted on the reclaimed land, mirroring the surrounding ecosystem, which is helping restore connectivity and functionality at a landscape level. The protective bund is providing support to the developing ecosystem by shielding it against the pressure of the expanding river, allowing it to strengthen and stabilize the soil until it can withstand the river's force.

BENEFITS

- Protect land from river erosion
- Promote sustainable land management
- Provide opportunities for sustainable livelihoods
- Reclaim inundated land
- Restore the degraded natural environment

CO-BENEFITS

HIGH

- Land reuse
- Biodiversity (flora)
- Climate/Social resilience
- Local agrobiodiversity

MEDIUM

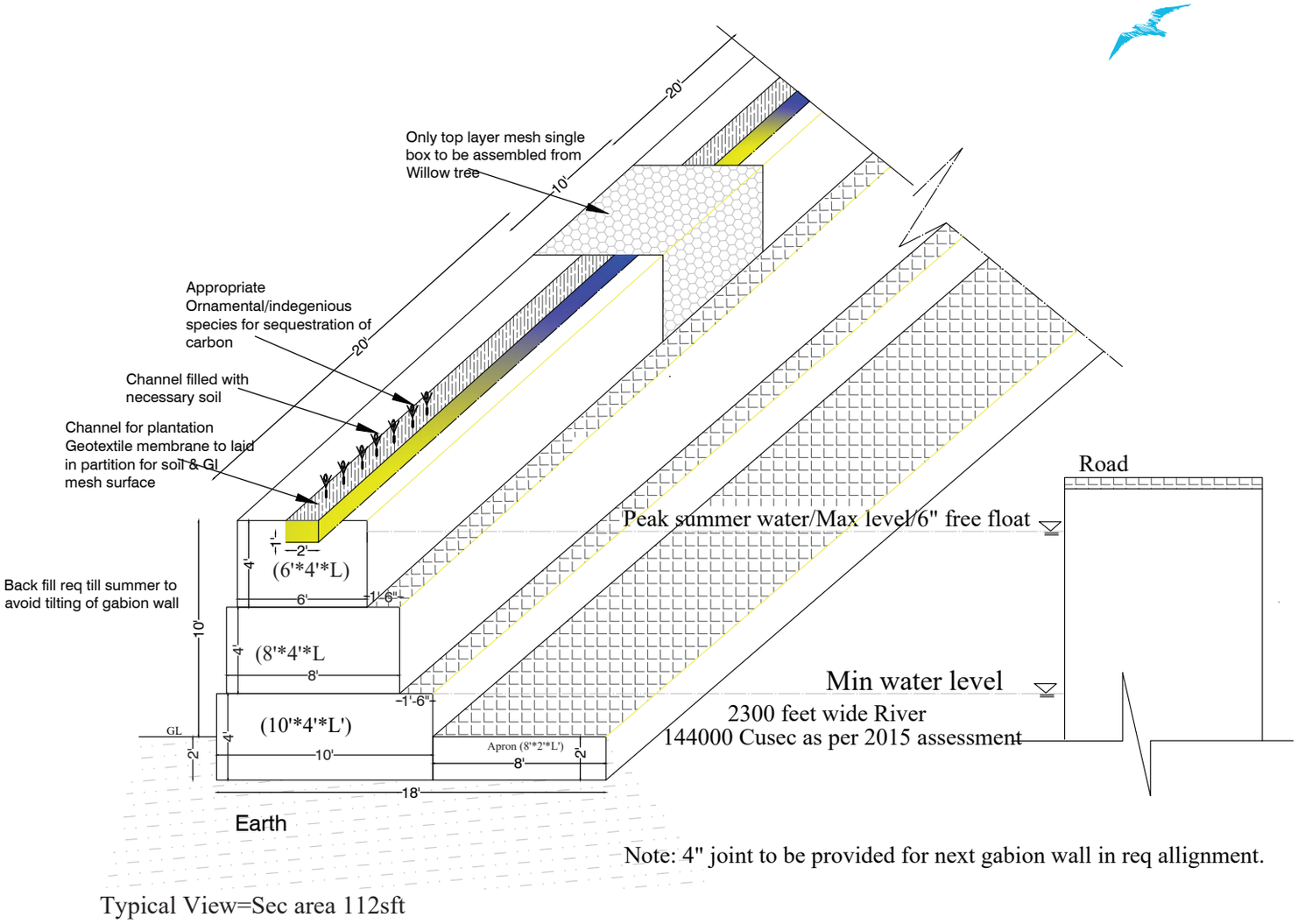
- Carbon sequestration
- Avifauna biodiversity
- Aesthetic value

LOW

- Soil biodiversity
- Forest Landscape Restoration (FLR)

TECHNICAL DESIGN

GABION WALL DESIGN AT VILLAGE KHARKOO, SKARDU



Note: 4" joint to be provided for next gabion wall in req allignment.

Typical View=Sec area 112sft

Typical Gabion wall design of 50' length, prolonging aheads of AKRSP wall allignment

WHAT'S UNIQUE

NbS approach: Ensuring inclusiveness, improved ecosystem health, and socio-economic benefits, and balancing trade-offs.

Adaptive management: Continued Monitoring Evaluation and Learning (MEL) is ensuring achievement of intended goals, identification and mitigation of unintended negative impacts, and upscaling and sustainability of the intervention through engaging with the concerned community and other stakeholders.

Forest landscape restoration: A mix of social forestry and agricultural practices is improving food security, livelihoods and ecosystem health.

Structural modifications: Unlike conventional continuous structures, the gabion wall is built in cells of 50 ft with the provision to open and repair only the damaged cell, thereby reducing the cost of repairing.
A green belt at the top middle layer and the replacement of gabion mesh with willow mesh at regular intervals along the bund highlight the importance of using nature for restoration.

IMPACT

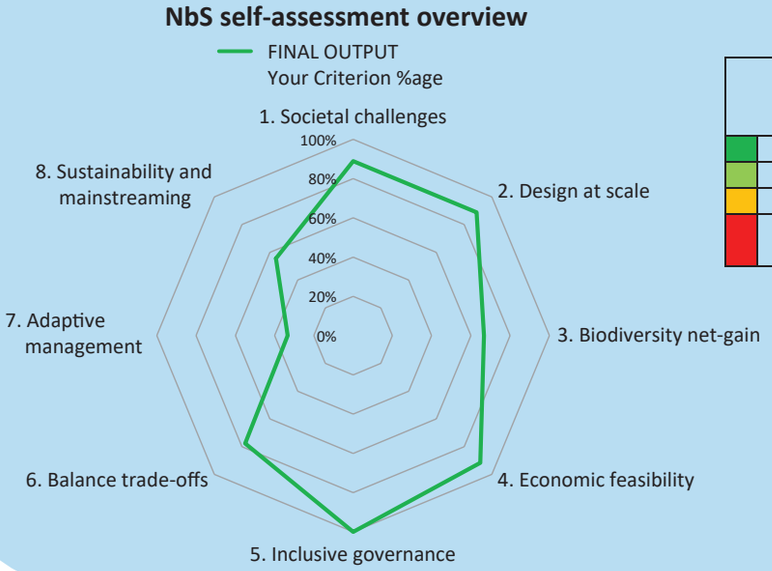
- **Land reclamation:** Successfully reclaimed around 26.6 hectares of land inundated by the expanding Shyoke river.
- **Ecosystem protection:** By containing the expanding river, effectively safeguarded around 30 hectares of an agriculture and social forestry ecosystem from further degradation by river erosion, by containing the expanding river.
- **Ecosystem restoration:** Indigenous tree and grass species, native to the surrounding ecosystem, have been planted on the reclaimed land. This is reconnecting the area to the surrounding ecosystem and helping restore the larger-level ecosystem integrity that was lost to river erosion over the decades.
- **Biodiversity gain:** Restoration efforts are expected to restore a diverse range of flora and fauna, including soil organisms, avian and reptilian species, and indigenous trees and grasses. This will regenerate the lost ecosystem integrity, enhancing ecosystem health and resilience against degradation threats such as river erosion and climate change.
- **Food security and livelihoods:** The Forest Landscape Restoration efforts have created a mosaic of land uses, including social forestry and agriculture. This is providing the local community an opportunity to improve their food security and livelihoods, while simultaneously improving ecosystem health.

NBS SELF-ASSESSMENT RESULTS:

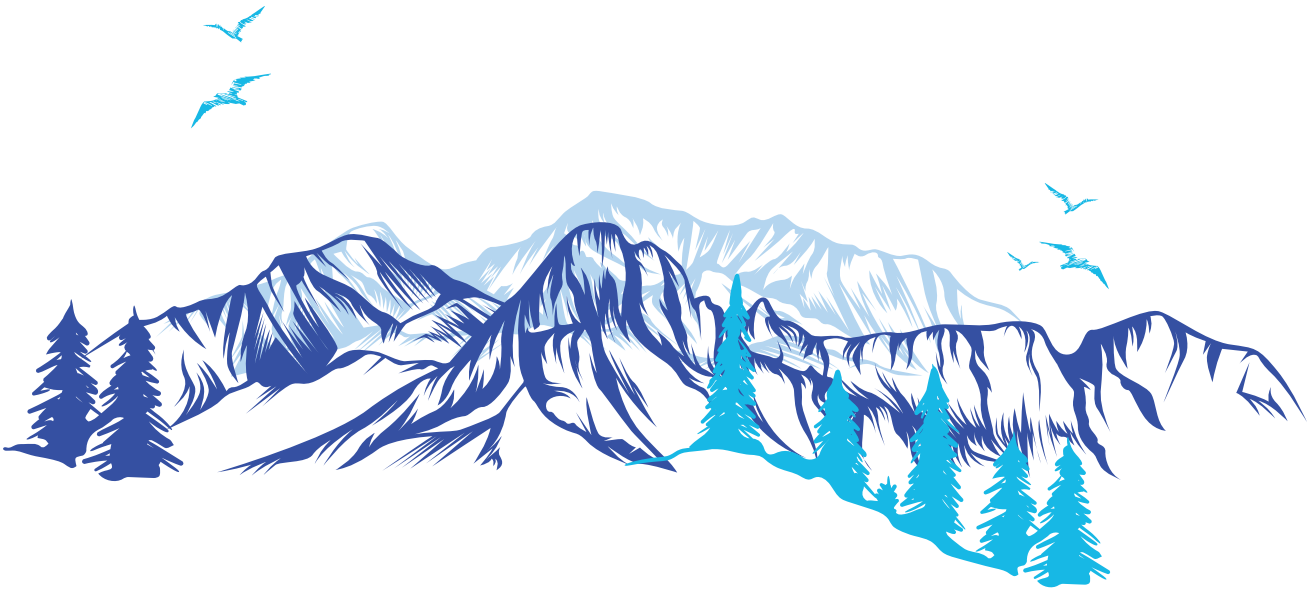
Using the International Union for Conservation of Nature's (IUCN) NbS self-assessment tool, the intervention was evaluated for its degree of adherence with all the 8 criteria and 28 indicators. The self-assessment tool is designed for practitioners to evaluate, learn and improve NbS in their respective contexts.
Following are the findings of the self-assessment exercise.

NbS self-assessment overview

Criterion	Your Criterion Score	Maximum Criterion Score	Normalised criterion	FINAL OUTPUT Your Criterion %age
1. Societal challenges	8	9	0.89	89%
2. Design at scale	8	9	0.89	89%
3. Biodiversity net-gain	8	12	0.67	67%
4. Economic feasibility	11	12	0.92	92%
5. Inclusive governance	15	15	1.00	100%
6. Balance trade-offs	7	9	0.78	78%
7. Adaptive management	3	9	0.33	33%
8. Sustainability and mainstreaming	5	9	0.56	56%
Total Percentage match			6.03	75%
Is this in adherance with the IUCN Global Standard for NbS?			In adherance	



Key	Output
Strong	Intevention adheres to the IUCN Global Standard for NbS.
Adequate	
Partial	
Insufficient	Intervention does not adhere to the IUCN Global Standard for NbS.



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LITERATURE

Guidance for using the IUCN Global Standard for Nature-based Solutions: first editions. (2020). https://doi.org/10.2305/iucn.ch.2020.09.en

DETAILS FOR GALVANIZED GABION WIRE MESH WALL.
HEXAGONAL GABION BASKETWALL GABION. 3D BOX WALL GABIONS.
8-details-for-galvanized-gabion-wire-mesh-wall.pdf - IUCN