Evaluation Report: Rehabilitation of Health Infrastructure and DRR Integration in Upper Dir

1. Contextual Analysis of District Upper Dir

District Upper Dir is characterized by a high-risk operational environment where rugged mountainous topography and acute disaster vulnerability create significant barriers to human development. In this geography, healthcare rehabilitation is more than a maintenance activity; it is a strategic intervention essential for regional stability and public health. The isolation of local communities means that resilient, localized health centers are the only viable safeguard against mortality in a region where travel is often restricted by environmental hazards.An evidence-based evaluation of the pre-intervention state in Qulandi and Sawni revealed systemic failures across the Basic Health Units (BHUs), which had rendered them largely dysfunctional. These failures are categorized as follows:

- **Clinical Gaps:** The total absence of functional labor rooms and a critical shortage of medical equipment and supplies prevented the delivery of safe maternal and neonatal care.
- **Operational Gaps:** Facilities lacked reliable water supply schemes and adequate staff housing, directly compromising the ability to maintain a consistent health workforce.
- **Environmental Gaps:** The BHUs were dangerously exposed to recurring floods and landslides, threatening structural integrity and patient safety.Critical analysis indicates that these interconnected gaps necessitated a comprehensive multi-dimensional strategy to transform these fragile facilities into reliable points of care.

2. Framework of Project Objectives

To ensure the long-term sustainability of development gains, it is essential to align infrastructure interventions with both clinical service requirements and the harsh environmental realities of the terrain. The framework adopted for this project was designed to bridge the gap between service "availability" and actual "utilization" by building trust in the facilities' safety and functionality.The project, implemented by WADDAN in partnership with the RAHA Programme (UNHCR and KFW), focused on four primary objectives:

- **Rehabilitating Selected BHUs:**
- *Strategic Rationale:* Directly addresses the identified void in obstetric and neonatal care by institutionalizing functional labor rooms and clinical supply chains.
- **Improving Infrastructure Resilience Against Natural Hazards:**
- *Strategic Rationale:* Mitigates the high risk of asset loss due to the region's geography, ensuring that health infrastructure remains a permanent community asset.
- **Enhancing Access to Safe and Hygienic Facilities:**
- *Strategic Rationale:* Targets demand-side barriers to healthcare. By ensuring hygiene standards, the project encourages utilization rates among women, children, and vulnerable groups who often avoid facilities with poor sanitation.
- **Integrating Disaster Risk Reduction (DRR) Measures:**

- *Strategic Rationale:* Shifts the operational paradigm from reactive recovery to proactive mitigation, embedding safety into the physical design of the healthcare system.These high-level objectives established the technical requirements for the interventions performed at Qulandi and Sawni.

3. Evaluation of Technical Interventions and Infrastructure Strengthening

The interventions implemented by WADDAN moved beyond superficial aesthetics to focus on "structural strengthening" and "systemic rehabilitation." This holistic approach ensures that the BHUs are not just renovated buildings, but functioning systems capable of sustained service delivery.

Analysis of Key Interventions

- **Clinical Facilities:** The rehabilitation of labor rooms and the stabilization of supply chains for medicines and equipment have converted dormant spaces into active life-saving units.
- *Value-Add:* This allows for immediate clinical response to obstetric emergencies, significantly improving maternal and neonatal outcomes.
- **Human Resource Support (Staff Residences):** Existing staff residences were renovated to provide safe, dignifying living conditions.
- *Value-Add:* In the remote topography of Upper Dir, on-site housing is a critical M&E metric for "stay-put" capability. By providing on-site residences, the project ensures 24/7 service availability, preventing the effective "closure" of the facility at night when staff might otherwise commute.
- **Utilities and Hygiene (Water and Waste Management):** This involved the reinstallation of water supply schemes and the rehabilitation of drainage and sanitation systems, including dedicated medical waste disposal.
- *Value-Add:* Explicit management of medical waste and clean water is a prerequisite for infection prevention and control (IPC). This reduces the risk of healthcare-associated infections and elevates the facility to international health standards.
- **Logistical Access (Road Construction):** The construction of dedicated access roads has mitigated geographical barriers.
- *Value-Add:* This intervention specifically addresses "the second delay"—the time spent reaching a medical facility. In maternal health, this connectivity is often the deciding factor in survival during adverse weather conditions.The integration of these improvements has stabilized the operational capacity of the BHUs, while specialized DRR measures have secured their long-term viability.

4. Analysis of Disaster Risk Reduction (DRR) and Climate Resilience

In disaster-prone regions like Upper Dir, integrating DRR into health infrastructure is an institutional imperative. Failure to do so risks the loss of development gains to a single environmental event. The data indicates that physical resilience is the foundational requirement for any clinical impact to be measurable over time.WADDAN implemented specific physical DRR measures to mitigate the environmental threats identified in the initial assessment:

- **Retaining and Protection Walls:** Specifically in Qulandi, these structures were engineered to defend the facilities from soil erosion and landslide impact.
- **Structural Strengthening:** Renovation work included seismic and flood-resistant enhancements to extend the service life of the buildings.
- **Rehabilitated Drainage Systems:** Improved runoff management prevents local flooding and protects the structural foundations from water damage.These measures transform the BHU from a vulnerable building into a **resilient community hub** . This ensuring that the community's primary health link remains unbroken during natural disasters, which is precisely when medical needs are most acute. Resilience is the foundation upon which all subsequent health outcomes are built.

5. Synthesis of Results and Stakeholder Impact

Success in this context is defined by the intersection of improved clinical capacity and enhanced community resilience. Evidence suggests that the project has successfully transitioned the BHUs from a state of neglect to one of operational excellence.

Key Outcomes and Impact Analysis

- **Maternal Health:** The operationalization of labor rooms has established a safe environment for deliveries, directly reducing the risks associated with home births in remote areas.
- **Staffing Continuity:** Improved housing has correlated with higher staff retention and morale, ensuring that qualified personnel are available for emergency shifts.
- **Environmental Hygiene:** The restoration of water, sanitation, and medical waste systems has improved patient safety and trust, leading to higher facility utilization.
- **Remote Accessibility:** New access roads have removed physical barriers for vulnerable populations, facilitating timely medical intervention regardless of weather.

Impact Mapping: From Challenge to Result

Initial Challenge (Pre-Intervention),Project Result (Post-Intervention),M&E Indicator
Absence of functional labor rooms,Rehabilitated units providing safe obstetric care,% Increase in institutional deliveries
High vulnerability to floods/landslides,Structural strengthening and retaining walls,Facility uptime during/after disaster events
Unreliable water and sanitation,Functional water schemes and waste systems,Incidence of healthcare-associated infections
Poor staff retention due to housing,Renovated residences for healthcare personnel,24/7 staff presence and service continuity
Geographical isolation,New access roads for emergency transit,Average reduction in travel time to facility

6. Strategic Conclusion and Institutional Commitment

The partnership between WADDAN and the RAHA Programme (UNHCR and KFW) has successfully addressed the immediate healthcare infrastructure gaps in Qulandi and Sawni

while mitigating long-term disaster vulnerability. A critical component of this success is the strategic handover and institutionalization of these DRR measures within the local health governance framework, ensuring that the maintenance of these assets is sustained by the district health system.WADDAN’s role as a "Partner in Development" is exemplified in this initiative. Our approach prioritizes "Total Infrastructure Resilience"—the intersection of physical safety and clinical continuity. This project demonstrates that in underserved, disaster-prone regions, clinical excellence and environmental resilience are inseparable. The WADDAN model serves as a definitive and replicable blueprint for building resilient, inclusive, and sustainable healthcare systems across the developing world.**WADDAN | Partner in Development**