**Khorog Urban Resilience Programme
Planning and Proof of Concept Initiative**

TERMS OF REFERENCE

**CONSULTANCY SERVICES FOR
DEVELOPMENT OF SPATIAL DATA INFRASTRUCTURE (SDI)**

1. Introduction

To address the increasing threat posed by natural disasters and climate change, the Aga Khan Agency for Habitat (AKAH) works to ensure that poor people live in physical settings that are as safe as possible from the effects of natural disasters; that residents who do live in high-risk areas are able to cope with disasters in terms of preparedness and response; and that these settings provide access to social and financial services that lead to greater opportunity and a better quality of life. The Aga Khan Agency for Habitat was created in 2016 by bringing together several AKDN agencies and programmes that had been established to tackle issues related to improving habitats and resources such as: Aga Khan Planning and Building Services, Focus Humanitarian Response, Disaster Risk Management Initiative and Prince Sadruddin Aga Khan Fund for the Environment.

One of AKAH Tajikistan's flagship projects is the Khorog Urban Resilience Programme. The Khorog Urban Resilience Programme – Planning and Proof of Concept Initiative is an initial five-year of the Government of Tajikistan, the Government of Switzerland and the Aga Khan Development Network to align communities, public institutions and civil society institutions around the delivery of a shared investment plan for Khorog which is underpinned by principles of Resiliency as reflected by the UNDRR Resilient Cities Framework. A critical component of enabling this integration of stakeholders will be the utilization of a steering committee chaired by the Governor of GBAO with representation of the National Government, the International Community and other important advocates in the development of a resilient Khorog. The steering committee will act as the coordinating mechanism for AKDN teams supporting Government services, donors, beneficiaries, academia and line agencies of the National Government in Khorog.

AKAH works in close partnership with the Government of Tajikistan and non-governmental agencies to achieve its goals and objectives. Working in close coordination with relevant government agencies and development partners such as the Government of Switzerland, AKAH has developed and set up an Open Data Platform to facilitate sharing of geo-spatial data related to hazards and vulnerability and exposure to hazards between key line ministries and departments. The platform is intended to support evidence-based decision making in disaster risk reduction (DRR) and land use and development planning. The system is set up to provide simple analytical functions and tools that will help users answer specific questions based on the context and situation on the ground, to enable decision making and implementation. AKAH Tajikistan (AKAHT) is looking for a qualified consultant or consultancy firm with experience in web application development to create the web development tools required to enhance the Open Data Platform.

2. Current status of the Spatial Data Infrastructure (SDI) development

The Aga Khan Agency for Habitat, working in partnership with the Government of Switzerland for funding and technical expertise, successfully set up a series of linked Spatial Data Centres across Tajikistan. This included setting up a Spatial Data Infrastructure (SDI) at the State Agency for Hydrometeorology (Hydromet), Main Geology Department, Committee of Emergency Situation, Academy of Science and GBAO Government with the financial support of the Government of Switzerland.

SDI was developed to address the critical need of access to clear and reliable information on hazards and risks affecting the country.

The first centre, located at the Department of Geology and funded by the SDC, was put in place to establish the ground for the data-sharing platform. This was scaled up to the Committee for Emergency Situations and Civil Defense (CoESCD) in 2018, with the support from the European Union Civil Protection and Humanitarian Aid Operations (ECHO) and Aga Khan Foundation United Kingdom (AKF UK). It was later extended to Hydromet, government of GBAO and Academy of Science with the support of SDC.

The Centres serve as a connector between the government departments that are all committed to enhancing access to analytical data to support emergency response in the country. In addition, international organisations, donor agencies, NGOs and other researchers or practitioners in this field will use the service.

The web platform is storing spatial information on weather (weather forecast, wind direction, snow coverage, precipitation etc...), historical incident information, hazard, risk and vulnerability information. This and other information including open source should be used as a basis for spatial analysis and development of decision support tool.

Technology used for developing of the system.

The system is based on GeoNode platform. GeoNode is a geospatial content management system, a platform for the management and publication of geospatial data. It brings together mature and stable open-source software projects under a consistent and easy-to-use interface allowing non-specialized users to share data and create interactive maps. Geonode is built upon GIS open-source projects and consists of the following components:

• GeoServer (Map Engine)
• PostgreSQL/PostGIS (Spatial Database)
• GeoNetwork (Meta Data)
• OpenLayers (Visualization)
• GeoExt (Tools)
• GeoWebCache (Caching)

3. Expected Impact

Improve the utilization and sharing of data for emergency response and land use planning in Tajikistan. Improve visualization and sharing of data between Government agencies and related stakeholders.

Expected Outcomes:
Recommendations on how to improve the Spatial Data Infrastructure in network in Tajikistan
Increased utilisation of spatial data for emergency response and land use planning in Tajikistan

4. Scope of the Work

The ToR sets out the requirements for an international consultancy company to support the Aga Khan Agency for Habitat with a review of the current spatial data infrastructure and recommendations for the next phase, as well as SDI conceptual model.

- Developing an SDI conceptual model.
- Developing a road map for the second stage: strategies and action plan for the construction, application and implementation, operation, and maintenance.
- Developing emergency management response tool.
- Developing communication system for emergency response.
- Suggesting and developing modelling and decision support system (DSS) tool, which shall be translated into web portal.
    - DSS for selecting location for building critical infrastructure.
    - Hazard forecast with interactive maps, pre-warning alerts, situation assessment maps.
- Performing spatial analysis of hazard forecast, suitability analysis for construction of major infrastructure, susceptibility mapping of avalanche, debris flow, landslide and rockfall on the national level.
- Enhancing existing web portal based on GeoNode with automated spatial analysis tools for:
    - Land use planning
    - Susceptibility mapping
    - Hazard forecasting
- Preparing a final report, specifying the underlying structure and methodology of the geoportal design to be submitted with source code and decision support system tools developed.

The consultancy company will provide advisory support to help develop SDI by developing national geospatial data standards. This will result in efficient and integrated system operational nationwide. The SDI should be developed based on the existing systems.

5. Qualification required/Selection criteria

1. A minimum of 10 years of work experience in GIS web services and WebGIS platform development, as well as knowledge of geospatial information.
2. Experience of working with local and international development organizations in developing of applications used by rural communities and clients of similar disciplines.
3. Demonstrate proven experience of successful execution of similar assignments.
4. Ability to work within a strong framework of processes and procedures.
5. Maturity and professional ability to handle sensitive information and ability to respect the confidentiality of such information over the course of the work, as well as after the expiry of the contract.
6. The service provider must provide a qualified team with experience in related field including SDI and GIS to accomplish the required work in an effective and efficient way.
7. International experience in developing similar system
8. Geoscience knowledge of complex spatial analysis.
9. The company shall demonstrate that it is qualified to perform the services, and would include brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills.

6. Methodology and Approach

The consultancy company should employ participatory and consultative methodology to coordinate with the
Aga Khan Agency for Habitat ORT Team, the project and organizational staff, the Swiss Cooperation Office (SCO) in Dushanbe and its back-stoppers, SECO and other partners where relevant.

7. Evaluation Criteria

Phase 1: Technical Evaluation

The evaluation of the technical part of the proposal will be on the basis of the service provider's responsiveness to the terms of reference, as well as the application of the evaluation criteria and points system as indicated below. Each responsive proposal will be given a technical score.

Evaluation Criteria – total 100 points

Technical Criteria	Points Allocated
The company's quality of work delivered through different projects	20
Experience and qualifications of the team and company. This part of the evaluation will be based on the CVs of the team developing the system that needs to be shared by the firm in their proposal. The number of team members is not as important as the relevance of the staff to perform the task	20
The approach and methodology for the proposed assignment	20
Previous experience in developing geoportals, providing links and documentations of the websites	20
Geotechnical knowledge and understanding of the context and task at hand	10
Evaluation of the proposal, innovative solutions	10
TOTAL	**100**

Only proposals which receive a minimum of 60 points out of the 100 points on the technical criteria as listed above and achieve a subminimum of 50% in respect to each criterion will be considered further.

Phase 2: Pricing Evaluation

Proposals that are shortlisted for further consideration based on the above criteria will consequently be evaluated based on a mix of technical and financial criteria.

The following criteria will be used for the evaluation of the proposals:

- **Pricing**   100 points

8. Institutional Arrangements

The selected service provider will work with AKAH SDI and IT unit within Operational Research and Technical department. The deliverables must be accepted from AKAH to ensure that the expected outputs are achieved.

1. The consultant will deliver all the above tasks in close coordination with AKAH and will make all written documentation available in English.
2. The service provider will provide weekly progress reports in English.
3. Integrate decision support tools mentioned in the scope of the work section into geoportal.
4. Produce a final report which will include the results and an analysis of the achievements modelling. AKAH will comment on the report within 3 weeks, and the final report should be submitted not later than 1 month after the assignment ends.

9. Submission details

Applications should be sent to the email address: HR TAJIKISTAN hr.tajikistan@akdn.org or submitted to the offices of Aga Khan Agency of Habitat at the following address: 34 Rudaki Avenue (TCELL plaza, 10th floor), Dushanbe, Tajikistan.