



Disaster Management Information System Project Document

Abstract/ Purpose of Document

- To provide background brief on the project and highlight its objectives
- To scope out the nature of the project and products to be delivered clearly.
- To act as a “live capture” document, detailing issues and lessons learned and documenting information that may have repercussions for the projects success or duration.
- To act as a communication document between AIMS, DDP management and the stakeholders.
- To manage expectations, clarity in scope and regular updates should ensure that false expectation is not created regarding potential use for which the system is not designed.

Circulation

The document shall be circulated to DDP, members of the National Commission for Emergency and Disaster management, UNAMA, & UNDP and all those involved in contributing through interviews or other medium, to ensure that adequate information is shared between the project team, the stakeholders and users.

Note

This document is subject to revision by AIMS and should not be construed as final.

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1 Executive Summary

2 Background

Afghanistan is a country prone to natural disasters: earthquakes, flooding, droughts, landslides, and avalanches. This country has experienced an extended drought for the last four years, and every year flooding, landslide, avalanches, mudslides, agricultural pests, and disease outbreaks occur.

Given the rugged and mountainous nature of the country and the location of villages, towns and cities, there is always a high propensity for widespread death and destruction whenever an earthquake, landslide, mudslide, avalanche, or flooding occurs.

Decades of war and civil conflict, as well as environmental degradation, have all contributed to increasing the vulnerability of the Afghan people to natural disasters. Several assessments by the humanitarian agencies in Afghanistan have revealed significant shortcomings in the areas of water, sanitation, health, security and natural resource management. Furthermore, the high level of poverty, inadequate livelihood and income generating opportunities, chronic health problems, and poor state of the infrastructure all add to the burden of natural disasters on the people of Afghanistan.

Disaster management is a typically multi-disciplinary endeavor, requiring various types of data with spatial and temporal attributes. It cuts across many boundaries, including organizational, political, geographic, professional, topical, sectoral and sociological.

Lack of critical and timely information for natural disasters is characteristic of developing countries particularly those emerging from decades of war and civil conflict; Afghanistan is not an exception. The Government of Afghanistan is very much under-resourced; it relies heavily on the humanitarian community particularly the UN in responding and managing natural disasters. The country, like most other developing countries does not have a disaster risk information management capability to document hazards, vulnerability, & risks at whatever scale, including their characteristics, impacts, or related historical data. Related data exists within some Government Departments in fragmented formats, not in any structured computerized format, and not shared amongst departments.

This Pilot project aims at developing a Disaster Management Information System (DMIS) for Afghanistan together with building the capacity of DDP to maintain, update and disseminate information to stakeholders and users for decision-making at multiple levels.

2.1 Interests of the Department of Disaster Preparedness

DDP has the mandate to coordinate disaster management on behalf of the Government of Afghanistan. A recent study of DDP indicated that it does not have the capability to effectively carry out its mandate (UNDP, 2002). Not only does DDP lack appropriately trained staff and resources but it is also too centrally focused and has no capability at the provincial and district levels where disasters mostly occur.

There is an evident need for DDP's organization to have strong links with other ministries, as dealing with disasters is a multi-disciplinary endeavor that requires inputs from most sections of government.

To effectively handle the coordinating role of disaster management, DDP requires knowledge about natural hazards, where do they occur, what are their characteristics, frequencies, impacts, what elements are at risks, how vulnerable are communities, which agencies are involved in disaster management and what resources do they have? To provide answers to this range of questions, DDP requires a sound disaster management information system with the necessary infrastructure and expertise to manage it.



2.2 Creating a viable disaster management information system for government

To effectively mitigate against natural hazards, it is essential that a well-defined disaster management information system is in place. Such a system should be capable of addressing the various aspects and phases of disasters. It should meet the requirements of the users at various levels.

The success of disaster management largely depends on availability, dissemination and effective use of information. The information needs will include current information on weather, climate, infrastructure (roads, hospital, markets, administrative boundaries), socio-economic data etc to use in assessing natural hazards. Currently, such data are being generated by multiple users; government departments, NGOs, the UN Agencies, and the private sectors. Data is fragmented, stored in multiple locations, and formats, making it difficult to bring together to support disaster management activities. In addition, there is a need to assess the disaster in terms of location, extend and likely impact so as plan relief and recovery actions.

An integrated disaster management information system, highly structured, developed and installed, adequately equipped with the necessary infrastructure and expertise to constantly monitor the risk profiles of possible disasters is relevant.

One of the crucial elements of disaster management is the availability of timely and reliable information made available to decision makers. Information helps in minimizing damages by warning the affected population, helping in planning of relief and adopting tangible solutions for rehabilitation and recovery. The disaster management information system should have a solid networking between those who provide the data, administrators, and affected population, government ministries, and the humanitarian community. Disaster management calls for synergy of technologies and interaction of different agencies. Networking and multi-agency interface will lead to institutionalization of disaster management.

3 Project Overview

This Project Scope document should be read in conjunction with the Project Plan which will outline in detail:

Project description	Description of the project components (systems, application interfaces, IDE, users, workflows (if applicable), integration with other systems/applications (as applicable), etc.
Project Methodology	Clear layout of the life cycle methodology that will be adopted for the project, with major stages listed and described, and how they apply to the project.
Project constants and assumptions	Listing of constants and assumptions made, subject to change as project progresses, or in order to mitigate unacceptable project risk.
Project milestones and deliverables	Listing of key milestones and applicable deliverables (software, documents, reports, etc.) for major stages of major stages or life-cycle of the project as applicable.
Project Timelines	GANTT or other time-based charts with detailed tasks and subtasks with estimated begin and end dates, according to the Life Cycle methodology utilized.

3.1 Objective of the Pilot Project

The objective of the pilot project is to develop a Disaster Management Information System (DMIS) that can provide accurate and timely information on hazards, vulnerability, and risk mapping, monitor, assess, forecast, and predict natural hazards in 2 districts of Kabul and Kunduz provinces. DMIS will be a GIS based system and will integrate remote sensed data with ground survey and other ancillary data. DMIS will encompass; a geo-database on disaster-prone areas, data analysis/modeling,



networking, collaboration and cooperation amongst key agencies. The built system will be installed in the Information Systems Unit of DDP in Kabul and Kunduz Cities.

3.2 Project scope

The DMIS shall endeavour to adopt where possible data standards being used or developed by the government of Afghanistan, and Global Disaster Information Network (GDIN) Standards. This will ensure interoperability and a smooth transition from the DMIS to National level, Regional and to the Global Disaster Information Network.

DMIS will provide information to DDP, members of the national Commission and consequently, its users with information on disaster risk reduction, cataloguing locations of natural hazards in 2 districts, their characteristics and impacts, documenting where possible historical data on past occurrences of natural hazards, mapping elements at risks. The information will be combined with other GIS layers such as geology, soil, landcover/landuse, hydrology, watershed, geomorphology, topography, DEM/DTM etc.

Due to the limited duration of this pilot project, and the complex data requirements of modeling most of the natural hazards such as earthquakes, landslides, avalanches, and mudslides, this project will focus on floods, erosion and drought.

Disaster management being a multi-disciplinary endeavour would require working with multiple stakeholders and users each with its own interests. To be able to model the information needs of all stakeholders and users in this pilot project would require a much longer time to accomplish, thus this project will focus on key government ministries such as DDP, MRRD, Planning, Health, Agriculture, Irrigation, Communications, and Refugees. It is believed that the information needs of most of the stakeholders and users are similar, and since DMIS shall adhere to of the Afghan Industrial standards code (ASIC) pertaining to natural disasters, this makes data shareable and viewable by government ministries and other organizations following the same standards.

Once the pilot project is successfully implemented, the need to develop a National Disaster Management Information System covering all disaster prone districts and provinces in the country becomes imperative. Government is then able to reliable take action decisions based on accurate and timely decisions. Information relating to the spatial and temporal aspect of natural hazards, their characteristics, impacts and frequencies of occurrence becomes common knowledge to a resilient knowledge based communities.

The following workflow hypotheses are made in respect of this project:

- Natural hazards may or may not occur in a community or district,
- There may be more than one natural hazards affecting a district,
- How much a district would loose as a result of the occurrence of a natural hazard of a given magnitude would depend on its vulnerability,
- Population, properties, and economic activities are at risk in any given area,
- Many Ministries have specific units that deal with disaster management,
- Disaster management information is required by multiple levels of users,
- Natural hazards become disasters when they occur in areas with population, properties, or economic activities,
- When a major disaster occurs, lives, properties, economic activities may be lost, damaged or disrupted,
- Hazard zonation maps are crucial information when considering development projects



In essence, elements of the DMIS pilot project shall:

- Identify core datasets for disaster management.
- Develop an operational disaster management information system to enable DDP deliver in timely manner crucial information to members of the National Commission for Emergency and Disaster management activities, District Authorities to enable action decision-making.
- Train Provincial Survey Teams how to collect accurate baseline data, and hazards data, vulnerability, and risks.
- Train Staff of the ISU in managing, and running DMIS, including data validation, Data entry, mapping and report generation.

3.2.1 Project Constants

The following are assumed to be constants throughout the project:

- DDP support and cooperation will be guaranteed throughout the project,
- Stakeholders and users will fully participate in the development process,
- Working hours will be 8:30 am – 04:30 pm between Sundays and Thursdays excluding Afghan national and UN holidays.

3.2.2 Project Assumptions

The following assumptions are made in respect of this project:

- Application will be developed in the premises of AIMS Kabul Office,
- AIMS will procure all necessary equipment and materials as outlined in the budget of the project document,
- AIMS will honour its commitment as outlined in the budget of the project document,
- AIMS will network with FEWS NET, and the FAO Agromet project to ensure where possible the inclusion of their operational products into DMIS.

3.2.3 Project Risks

The following are considered as risks to be borne for this project:

1. Organizational change: - Current Civil Service Review and restructuring might bring in changes in the structure of DDP which may result in new policy,
2. Product usability: - Changes in user requirements in between project stages,
3. Difficulty in recruiting qualified Remote Sensing Expert, GIS and Database Specialists might delay project implementation,
4. Difficulty in acquiring some of the data required for the project in a timely manner,
5. Difficulty in recruitment of the ISU staff of DDP resulting to delays in project implementation,
6. Risk of loosing DDP staff to NGOs, UN Agencies, and Private Sectors that pay better once trained in GIS, and running DMIS,
7. Risk of loosing the Provincial Survey Teams (PSTs) to NGOs, UN Agencies, and Private Sectors once trained,
8. Lack of commitment & motivation from members of PSTs resulting to delays in training, and poor quality baseline data collection,
9. Lack of commitment & motivation from members of the Multi-Hazards Team (MHTs) resulting to delays in hazards, vulnerability and risks assessments,
10. Physical security: - Increasing insecurity in the operational area may hamper work. This may relate to possible staff evacuation or pullouts from Afghanistan.



3.2.4 Expected deliverables

These will be divided into three.

1. **Progress updates:**

- Monthly progress update presentations at DPP for all stakeholders.

2. **Paper deliverables:**

- Weekly progress reports.
- Project plan
- Project document
- Requirements Analysis report
- Design specification
- Test reports
- Training manuals
- User manual(s)
- Project sign-off document

3. **Application deliverables:**

- Prototype (subject to multiple revisions),
- Final product to be installed in ISU of DDP in Kabul & Kunduz
- Hazards, vulnerability and Risk maps of pilot districts,
- Flood, Erosion, Drought and Hazard zonation maps of pilot districts,

3.2.5 What DMIS is not!

The DMIS is not designed to:

- Replace the internal operational systems of neither DDP nor the National Commission for Emergency and Disaster Management!
- Model all natural hazards in the selected districts!
- Model all natural hazards in the country at national scale!!
- Monitor, forecast, predict natural hazards in the country at national scale!
- Capture the user needs of all Government Ministries and humanitarian agencies in the country!
- A full blown Disaster Management Information System!

4 Major stages of the project

See Project Plan for details!

4.1 Recruitment, development of project scope, plan, resource identification and allocation

In this stage the following is on track: -

- Terms of Reference (TORs) for GIS Specialist, Database Specialist, and Training Consultant have been finalized and submitted to the AIMS Administrative Officer to commence recruitment.
- A Project Team composed of the DMIS Project Manager, Country Coordinator, Technical Manager, & MIS Unit Advisor has been formed.

- Draft document of the project's scope is also being developed and shared with Project Team members for input and finalization.
- A draft work plan is also being developed which will be reviewed continuously throughout the project's life.
- Interviews for GIS Specialist, Database Specialist and Training Consultant positions, which will be advertised soon by UNDP is expected to be conducted before end of October 2004, and the successful candidates expected to start work 1 November 2004.
- The Remote Sensing Expert is expected to be recruited before January 2005, and to commence work 1 February 2005.
- UNDP Human Resources Unit is expected to do the advertisement and the Project Team and UNDP HR will conduct interviews.
- Once project funds are deposited into UNDP Accounts procurement of equipment and materials will proceed as planned.

4.2 System and Needs Requirements Analysis

In this stage, the current information systems (both manual and computer based) of key institutions with disaster management responsibilities will be assessed to determine if the current processes, data, and models, are producing timely information on disaster reduction that meets the requirements of decision makers and users.

Also the requirements and objectives of DMIS are identified, gathered, and analyzed. Project goals are refined into defined functions and operations of intended application. Stakeholders and End-user information needs are also analyzed. This stage includes a detailed analysis of the requirements needs of organizations involved in disaster management in the country.

This process will be done through following;

- Interviews, surveys, and questionnaires
- Prototyping, and
- Formal sessions, including structured workshops, group discussions, and facilitated teams.

A Systems Analysis Team to be headed by the Project Manager, the Project Database Specialist, Project GIS Specialist, One person each from the AIMS GIS and Database Units will be formed to undertake this process. Documentation will be done throughout this stage. At the end of this stage a system specification document will be generated.

4.3 Trainings, Data Collection & Data Entry

This pilot project will consist of series of trainings and other activities alongside the system development phase. These will include: -

4.3.1 Provincial Survey Teams:

The training will focus on ground surveys, baseline data collection, Global Positioning Systems (GPS), interpretation of satellite imagery, topographic and map reading, and collection of historic data on past natural disaster events. It is expected that training will not exceed a period of 2 weeks. The Training Consultant will do training of the PSTs. The Consultant is expected to develop a Training Manual with materials and deliverables. The Project Team before commencement of the trainings will approve the manual.

4.3.2 Information Systems Unit of DDP:

DDP will identify/recruit staff to run this unit. Functionally, this Unit shall automatically become the GIS Lab that will support the Emergency Operations Center at Kabul (National Level)) and at Kunduz (Provincial Level).

The ISU Staff shall be introduced to the AIMS Certified GIS Assistant's Course (ACGA), which lasts a period of 10 days. ACGA will be run by AIMS. At the end of the GIS training, ISU staff shall be

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introduced to Databases, data entry, data validation and Database Management. The Database Specialist using training modules developed by ACBAR shall do the course on introduction to databases. At the end of this training, the ISU staff shall introduced into the 20 days secondment programme attached to the GIS Unit where they will work on a project relating to a GIS applications development.

4.3.3 Multi Hazards Assessment Team:

In this project, this team will not be trained in hazards, vulnerability, and risk assessments. It is expected that this training would have been covered by the INWENT Training Project also funded by AETF. However, The RS Expert will also train them in damage assessments following a disaster. The RS Expert will train the MHT & PSTs at the same time.

4.3.4 Workshop for key Government Ministries:

Several government departments have specific units that deal with disaster-related issues, they will be required to collect their own data for their individual databases (if it exists) or reporting. This is also true for other agencies; the UN, NGOs, & the private sectors. There is need for these to collect disaster management data on standard forms and be able to share this with DMIS or share it amongst themselves. Through workshops, government departments, UN, NGOs, & the private sectors will be brought together and trained on data standardization and the need for collaboration.

4.3.5 Standard Data collection & Reporting Forms;

To ensure that Government Departments, & humanitarian community to share data between and within, the need for standardization in data collection and reporting is relevant. Standards fields will be identified and approved by stakeholders and users.

4.3.6 Baseline Data Collection, Data Entry and Validation;;

At the end of the training, the PSTs will undertake baseline data collection on district profile and vulnerable communities in the district. It is expected that the baseline data collection will last for a period of 4 weeks.

Once data is collected, it has to be validated and entered in DMIS. It is expected that DMIS will be robust enough to withstand any fraudulent attempt to feed wrong data into it. The ISU staff will be trained in validation and data entry.

4.4 Specification and System Design

4.4.1 Database Development

In this stage, the desired features and operations are described in detail, including screen layouts, business entity rules, workflows and process diagrams (physical and logical), pseudo-code, and other information. This stage focuses on high-level design (what programs are needed and how are they going to interact), low-level design (how the individual programs are going to work), interface design (what are the interfaces going to look like), and data design (what data will be required). The logical system of the application is also developed. Documentation will be continued. During the analysis and design stage, the application's overall structure is defined. Both are very crucial in the whole development cycle. Oversight in the design phase can be very expensive to rectify in the later stages of development.

4.4.2 Geographic Information System Development

In tandem with the System design, the DMIS will be developed. Activities of this phase will include but not limited to: -

- Take an inventory of all the required datasets, their formats, scales, projections, & locations required to build the applications for DMIS,
- Identify all datasets currently with AIMS & in what formats, scales, projections, & locations,
- Take an inventory of missing datasets or datasets not in the right formats, scales, projections,
- Advice from Technical Manager on best possible means of acquiring missing datasets,
- Perform all necessary data cleaning, reformatting, and bringing all datasets (where) into one projection,
- Design GIS applications,
- Establish GIS modeling parameters,
- Input data into Models and run Models,

4.4.3 Remote Sensing Applications Development

AIMS in collaboration with UNDP HR will recruit a Remote Sensing Expert specialized in Natural Disasters and Vulnerability Mapping & Analysis. It is expected that the Expert will commence work 1 February 2005, by then all or most of the datasets required for the design of the RS applications would have been acquired, cleaned, problems relating to projections sorted. It is also expected that by end of January 2005, the Disaster Management Training Project of INWENT would have trained Government personnel in hazards, vulnerability, and risk assessments. Together with DDP and key members of The National Commission for Emergency and Disaster management, the RS Expert shall define the TOR the hazards, vulnerability, and risk assessments & mapping. The trained personnel would be identified by DDP, and an Assessment Team formed. The Assessment Team shall be made up of a multi-disciplinary team. Using appropriate methodology, The RS Expert & the Assessment Team shall conduct hazards, vulnerability, and risk assessments in the pilot areas. The RS Expert shall provide leadership and direction in the conduct of the assessment. The RS Expert shall also train the Team and the PSTs in damage assessments following a major disaster.

Based on the results of the assessments and the datasets available, the RS Expert shall develop all the necessary applications and modeling. This pilot project will focus will be on Floods and drought modeling.

4.5 Programming, Implementation, Integration

In this stage, the database designs are translated into code, written using a programming language via an integrated development environment (IDE) or an application generator. The coding of an application (irrespective of the type of language or tool chosen) should follow QA/QC procedures, with substantial testing during the entire stage. Documentation will continue. The AIMS Database Technician will be requested to do the programming of the database objects.

The GIS Specialist will also develop user friendly menu driven interface using Avenue to view Settlements/District profiles, elements at risks; Infrastructure, Demographics, terrain features & Natural Resources.

4.5.1 Coding System

All coding will conform to AIMS Geocoding standards, ASIC, and any existing data standards in the country.

4.5.2 Pilot and Testing

Once an application prototype can be developed, a pilot program can begin using selected users from multiple groups. This can be used as a testing environment to check for application usability, errors, and bugs. Feedback and comments are taken into consideration for modifications to the application. Additional pilots may also be necessary depending on customer requirements. There may also be User Acceptance Tests (UATs) to ensure that objectives of the pilot(s) are successful and approved.



Normally applications are written as a series of individual modules, subject to separate and detailed tests. The separate modules are then brought together and the application is then tested as a system, to ensure that interfaces between modules work (integration testing), the application works on the intended platform and with the expected volume of data (volume testing), and that the application does what the user requires (acceptance or beta testing).

Upon completion of the RS applications, the RS Expert together with the GIS Specialist ensure that the RS applications of GIS, & are seamlessly integrated into the GIS. Through Open Database Connectivity (ODBC), Database Specialist with the support of the Database Unit links the database with the GIS.

User manuals of all applications developed, and how to run and manage DMIS will be produced. The RS Expert, GIS & Database Specialists will produce the user manual for the RS, GIS and Database applications respectively. These will be combined into one user manual for operating and managing DMIS. The Database Specialist will do this job. The User Manual will be translated into Dari.

4.6 Training, deployment & system documentation

Training: Upon completion of DMIS, the Database Specialist will conduct training for the ISU staff of DDP both in Kabul and Kunduz. Training will be done in one location, at the AIMS Kabul Office.

4.6.1 Rollout, Acceptance, and Handover –

With DMIS successfully completed and approved, a rollout can be implemented using either a phased- or full-approach, depending on DDP requirements. DMIS will initially be installed in Kabul and then later in Kunduz.

An appropriate architecture for system implementation will be selected to ensure that data on Kunduz Province will be regularly integrated into the Kabul system.

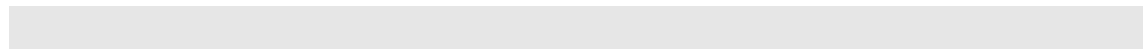
4.7 Cooling off period and systems maintenance

Inevitably the system/application will need maintenance and/or undergo change once it is delivered. Changes during an application's life include modifications, corrections, additions, moves to a different computing platform, etc. With additional funds received, this system would eventually be developed into a National Disaster Management Information System requiring more functionalities.



5 Appendix: Organisations and contact Information

No	Contact Person	Acronym	Organisation	Title	Email	Telephone
1	Maj. Gen. Sultan Mohd Ibadi	DDP	Dept. of Disaster Preparedness	President		Mob: 070 224 561, 079 302 694 SAT: +882165 1150637 +93 202101319
2	Eng. Habib	DDP	Dept. of Disaster Preparedness	Dir. Of Foreign Assistance		079 314 258
3	Zahira Virani	UNDP	UNDP	Ass Country Director	Zahira.virani@undp.org	079 370 567



6 Appendix : Terms of Reference for GIS Specialist

Management Arrangements

Under the direct supervision of and reporting to the Project Manager, the GIS Specialist will work with Project Manager, Remote Sensing Expert, members of the Provincial Disaster Management Committee, members of the Provincial Survey Team, and ISU staff of DDP in Kabul & Kunduz.

Job Description

The GIS Specialist shall manage GIS technical activities, under the direction and overall management of the Project Manager. This support will include but not be limited to:

- Together with the Project Manager, and the Database Specialist, determine the requirements of a disaster management information system in terms of users, data requirements, formats, scales, standards, data exchange and integration;
- Together with the Project Manager, and the Database Specialist, undertake a detailed user requirements analysis;
- Take an inventory of all the required datasets, their formats, scales, projections, & locations;
- Identify all datasets that are missing but required;
- Ensure that the required datasets are incorporated into the DMIS data repository;
- With the support from the AIMS GIS Unit, develop the GIS applications required for the DMIS based on the user requirement analysis
- Together with the Remote Sensing Expert and the Database Specialist integrate the GIS and remote sensing applications into the developed hazard geo-database.
- Train a cadre of staff based in Data Processing Unit of DDP to run & manage the GIS applications;
- Assist the Training Consultant to train the Provincial Survey Teams in data collection techniques for different hazard types;
- To develop and maintain the relevant metadatabase;
- Any other tasks as directed by the Project Manager.

Qualifications

- Strong practical experience in using Geographic Information Systems (GIS) is essential, specifically ESRI products such as ArcView and / or ArcInfo;
- Experience in user requirement analysis;
- Experience in developing GIS applications;
- Experience in managing and developing client relationships;
- Experience in product development, project management;
- Experience with the following technologies: Windows 95 and NT operating systems; client/server hardware and software; input/output technology, digitizing equipment, internet services and related technologies;
- Advanced University Degree required;
- Five to seven years working experience;
- Good written and spoken English;
- Fluent written and spoken Dari and Pashto;
- Excellent interpersonal and presentation skills;
- GIS Technicians are also encouraged to apply.

Appointment

Special Service Agreement

8 months, based in Kabul with extensive field trips to the regions

Reporting Requirements:



Daily consultations with appointed AIMS counterpart
Weekly meetings and verbal report to the Project Manager
Weekly report to the Project Manager

AIMS is supported by:



7 Appendix : Terms of Reference for Database Specialist

Management Arrangements

Under the direct supervision of and reporting to the Project Manager, the Database Specialist will work with the GIS Specialist, members of the Provincial Disaster Management Committee, members of the Provincial Survey Team, ISU staff of DDP in Kabul & Kunduz.

Job Description

The Database Specialist shall manage all database management activities, under the direction and overall management of the Project Manager. This support will include but not be limited to:

- Together with the Project Manager, and the GIS Specialist, assess the current information systems (both manual and computer based) of the various stakeholders/Government Ministries to determine if the current processes, data, and models, are capable of producing information on natural disasters that meets the requirements of decision makers and users.
- Together with the Project Manager, and the GIS Specialist, determine the requirements of a disaster management information system in terms of users, data requirements, formats, scales, standards, data exchange and integration;
- Together with the Project Manager, and the GIS Specialist, undertake a detailed user requirements analysis;
- Together with the stakeholders/Government Ministries, develop standard data collection forms and reports;
- With support from the AIMS Database Team, develop a hazard geo-database, database applications and database interface functions (data entry forms and reports) required for the Disaster Management Information System;
- To integrate any existing databases on natural disaster management into DMIS;
- Individually test the database applications and ensure that the applications work as a system;
- Together with the Remote Sensing Expert, and the GIS Specialist, integrate the GIS and remote sensing applications into the developed DMIS geo-database;
- To ensure that all data collection on natural disasters by all stakeholders/Government Ministries is done using the standard forms;
- Supervise the Provincial Survey Teams in the collection of baseline data;
- To assist in the cleaning, validation and entry of baseline data into the DMIS database;
- To ensure that the developed geo-database is capable of producing information on hazards, vulnerability, and risks, disaster damage assessments and other related statistics and report;
- To develop, maintain and promote data standards within the stakeholders/Government Ministries and in the wider community;
- Train a cadre of staff based within the Data Processing Unit of DDP in Kabul & Kunduz to manage and implement the DMIS geo-database;
- To develop and maintain the relevant data dictionary;
- To carry out other tasks as directed by the Project Manager;

Qualifications

- Excellent theoretical and practical knowledge of database development, particularly in Ms Access;
- Formal and non-formal education in IT and information systems;
- Advanced knowledge of all MS Office products;
- Experience of data collection and data entry;
- Good inter-personal skills;
- Ability to programme in PHP and HTML would be an advantage;
- Fluent spoken and written English;
- Fluent spoken and written Pashto and Dari;



- Database Technicians are also encouraged to apply.

Appointment

Special Service Agreement

8 months, based in Kabul with extensive field trips to the regions

Reporting Requirements:

Daily consultations with appointed AIMS counterpart

Weekly meetings and verbal report to the Project Manager

Weekly report to the Project Manager



8 Appendix : Terms of Reference for Training consultant

Management Arrangements

Under the direct supervision of and reporting to the Project Manager, the Training Consultant will work with members of the Provincial Survey Team.

Job Description

The Training Consultant shall manage all training activities for the Provincial Survey Teams (PSTs), under the direction and overall management of the Project Manager. This support will include but not be limited to:

- Train Provincial Survey Teams of Kabul, & Kunduz in field data collection to enable them gather baseline data and information using the standard data collection forms;
- Train stakeholders/Government Ministries how to collect their own data for input into DMIS using the standard forms;
- Train PSTs in GPS Technology, GPS data collection, field surveys, attribute data collection, interpreting topographic maps, & satellite images;
- Develop training materials and manual for data collection techniques;
- To carry out other tasks as directed by the Project Manager;

Qualifications

- Proven ability to develop and deliver training courses;
- Proven ability to develop training manuals;
- Strong practical experience in using GPS Technology, Field Surveys, Assessments, interpreting Topographic maps, Thematic Maps & Satellite images;
- Experience with the following technologies: Windows 95 and NT operating systems; client/server hardware and software; input/output technology, digitizing equipment, internet services and related technologies;
- Advanced University Degree required.
- Five to seven years working experience.
- Good written and spoken English;
- Fluent written and spoken Dari and Pashto;
- Excellent interpersonal and presentation skills.

Appointment

Special Service Agreement

One month, based in Kabul with extensive field trips to the regions

Reporting Requirements:

Weekly meetings and verbal report to the Project Manager

Weekly report to the Project Manager



9 Appendix : Terms of Reference for Remote Sensing Expert

Management Arrangements

Under the direct supervision of and reporting to the Project Manager, the RS Expert will work with the GIS Specialist, members of the Provincial Disaster Management Committee, and staff of the Data Processing Unit of DDP in Kabul & Kunduz.

Job Description

The Remote Sensing Expert shall manage the remote sensing technical activities, under the direction and overall management of the Project Manager. This support will include but not be limited to:

- Advise on appropriate data sources, sensors and scales at which to gather and analyze data for monitoring and assessing hazards, vulnerability, and risks;
- Together with the stakeholders develop Terms of Reference for the hazards, vulnerability and risks assessments;
- Undertake hazards, vulnerability and risks assessments using a multi-hazard approach;
- Within the time frame of the project, advice which hazards to be modeled in DMIS;
- Make appropriate recommendations under which hazards not modeled in DMIS will be modeled;
- Identify and map all elements at risk within the pilot area
- Undertake hazard, vulnerability, and risk mapping of the pilot area
- Develop appropriate models that show where and when hazards may occur in the future;
- Train a GIS Technician in image processing leading to hazard, vulnerability, and risk mapping, and the production of damage maps following a disaster;
- Train Survey Teams in data collection techniques for the hazard types to be modeled;
- Develop user manuals for the remote sensing applications developed;
- Work with the GIS Specialist to develop mechanisms for seamless transfer of data between the GIS and RS systems;
- Together with the GIS Specialist, ensure that the remote sensing applications are integrated into DMIS;
- To ensure that DMIS is capable of producing hazards and vulnerability maps, disaster damage assessment maps and other related statistics and report;
- Any other tasks as directed by the Project Manager.

Qualifications

- Strong practical experience in using Geographic Information Systems (GIS) is essential, specifically ESRI products such as ArcGIS, ArcView and / or ArcInfo;
- Strong practical experience in image processing using softwares such as ERDAS, & or ILWIS;
- Experience in developing applications that uses GIS & Remote Sensing for hazard assessments, dealing with floods, landslides, mudslides, avalanches and earthquakes;
- Past involvement in remote sensing projects and research particularly in the area of natural hazard and risk assessment, & environmental modeling;
- Proven ability to develop and deliver training courses in developing countries;
- Work experience in developing countries;
- Ability to work with different cultural groups;
- Advanced university degree, preferably a PhD in GIS/RS, required;
- Seven to ten years working experience.
- Good written and spoken English;

Appointment



3 months Consultancy,
Based in Kabul, with extensive field trips to the regions

Reporting Requirements:

Daily consultations with appointed AIMS counterpart
Weekly meetings and verbal report to the Project Manager
Appropriate documentation and briefings for each phase of work.
End of phase reports

Terms & remuneration:

Consultant to provide all required software and laptop to fulfill the contract,
Return airfare to point of hire provided at end of contract.

