

PROPOSED PROJECTS ON THE MANAGEMENT OF ENVIRONMENT AND NATURAL DISASTERS

By

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Project title: Applications Of GNSS In The Management Of Environment And Natural Disasters.

1.Intoduction and Justification

The management of environment and natural disasters is a major concern of the entire global community. The environment is the life supporting system for all living organisms including humankind. Its sustainable use is essential for the current and future generations. At the same time, natural disasters continue to lead to losses of life and property, enhanced poverty and vulnerability affecting any efforts towards achieving sustainable development.

The various strategies national, sub-regional, regional and international strategies aim at sustainable use of environment and natural disaster reduction.

The GNSS has an enormous potential to contribute to the management of environment and natural disasters by utilizing: The positioning, signal delay And signal reflection amongst many other concepts.

The objective of this project is to enhance the application of GNSS in the management of environment and natural disasters as a contribution to sustainable development and disaster reduction.

2.Objective

The overall objective of this project is to enhance the application of GNSS in the management of environment and natural disasters as a contribution to sustainable development and disaster reduction.

2.1 Specific Objective 1

To promote the use of GNSS in the monitoring meteorological elements (GPS-Meteorology)

Specific activity 1

- Demonstrate operational value for weather prediction;
- Investigate detailed global moisture distribution ;
- Monitor tropopause, and lower stratosphere temperature profiles with high resolution;
- Model and predict of severe terrestrial and space weather, etc.
- Understand global ocean circulation processes
- Monitor and detect climate change

2.2 Specific Objective 2

To promote the use of GNSS in Disaster Management.

Specific activity 2

- Monitor IPWV, electron density and ocean signal reflections to develop relationships for use in early warnings systems
- Monitor wildlife and domestic animal behaviours to develop indicators that may contribute to early warning systems and bio-diversity conservation
- To use GNSS in monitoring vessels to reduce oil and dangerous wastes spills caused by marine accidents.
- To use GNSS in mapping natural disaster risk zones(floods, droughts, marine, inland lakes, rivers and disease prone areas e.g. malaria, rift valley fever etc) in support of the habitats and sustainable development.

2.3 Specific objective 3

To promote the use of GNSS the monitoring and detection of Climate change

Specific activity 3

- Apply GNSS in the monitoring of snow levels and cover
- The contribution water vapour estimations, ocean signal reflection and electron densities to climate change monitoring and detection
- Contribution of GNSS to the monitoring of desertification and the migration of rainfall belts.

2.4 Specific Objective 4

To promote the use of GNSS the Mapping water resources

Specific activity 4

- To use GNSS in mapping water resources and improving hydrologic cycle models.

2.5 Specific objective 5

To develop Human resource and raise awareness regarding the application of GNSS in the management of environment and natural resources.

Specific activity 5

- To conduct Hands on training workshops on applications of the GNSS in the management of environment and natural disasters.
- To provide opportunities for advanced training in remote sensing with emphasis on the application of GNSS in the management of the environment and natural disasters.
- To raise awareness at all levels on the applications of GNSS in the management of the environment and natural disasters.
- Conduct Pilot demonstration projects to promote the potential of GNSS in the management of the environment and natural disasters.

2.6 Specific objective 6

To develop an Environmental Information System aimed at networking institutions involved in the management of environment, natural resources and disasters.

Specific activity 2

Take advantage of existing mechanisms such as FAO, IGS, WMO, e.t.c. to develop an Environmental Information System with particular attention to the GNSS applications.

3. Benefits

- Institutions involved in providing weather and climate forecasts, and early warning.
- Institutions with strategies to reduce disasters
- Institutions with strategies for sustainable use of environment and natural resources
- Institutions with strategies for the monitoring and controlling desertifications.
- Institutions with strategies to manage disaster outbreak and migration of vectors in response to climate change and variability.
- Institutions with strategies for the conservation of bio-diversity
- National, sub-regional and regional government whose responsibilities include ensuring safety of life and property for their communities.

4. Project formulation and implementation strategy

4.1 Project formulation

- Drafting the project.
- Circulation of the project to experts for input.
- Presentation of the draft project proposal at sub-regional and regional meetings relevant to the management of environment and natural resources for input and to promote ownership by involving the experts in the respective regions who would support the initiatives for popularising the project initiative at all levels.
- Presentation of the project proposal to sub-regional and regional government authorities to establish political will.
- Missions to Source funding.

4.2 Core activities

- Procurement and installation of the essential infrastructure
- Hands on training workshops for experts with background in remote sensing.
- Demonstration pilot application projects.
- Advanced training in remote sensing with special attention to the application of GNSS to the monitoring of environment and disaster management.
- Awareness raising workshops and outreach activities

5. Potential Partners

The potential partners include National Governments, sub-regional/ regional economic groups, UNEP, UNDP, ISDR, GCOS, GTOS, WMO, FAO, Sub-Regional/ regional climate and environment centres, Habitat amongst many others.

6. Budget

The budget shall depend on regional specific needs and existing capacities.

7. Time Frame

The project formulation has started and can be concluded preferably by February 2004. The UN/OOSA may wish to send letters of intent to possible partners to inform them of the project in development and request the possibility for support.

The ongoing initiatives such as the Amazon GPS-MET project, SoumINet, snow monitoring and other efforts in the developing and developed countries are expected to continue.

Requests to institutions who may wish to support the project in kind may also be initiated by UN/OOSA