

## **UN-GGIM for the Arab States Work Programme (Draft Proposal):**

The inventory of issues to be addressed by the United Nation Committee of Experts on Global Geospatial Information Management (UN-GGIM), through its work for the next few years (at least until 2016), has been collated and consolidated in nine thematic groups (see below). The meeting in Jordan is invited to identify among these majors themes some geospatial information issues that are relevant to the countries in the region. Taking also into account the key findings of the pre-seminar questionnaire discussed in the first meeting in Doha in 2013 (see annex), a set of issues has been selected as a starting point for further discussions by the group, aiming to outline a Work Programme for the next few years for the UN-GGIM for the Arab States.

### **I. UN-GGIM Inventory of Issues :**

- (a) Developing a national, regional and global strategic framework for geospatial information;
- (b) Establishing institutional arrangements and legal and common frameworks;
- (c) Building capability and capacity, especially in developing countries;
- (d) Assuring the quality of geospatial information;
- (e) Promoting data sharing, accessibility and dissemination;
- (f) Embracing trends in information technology;
- (g) Promoting geospatial advocacy and awareness;
- (h) Working in partnership with civil society and the private sector;
- (i) Linking geospatial information to statistics.

### **II. Current UN-GGIM Work Programme :**

1. Future Trends (\*)
2. Global Geodetic Reference Frame
3. Global Map for Sustainable Development (GM4SD)
4. Legal & Policy and Institutional Arrangements
5. Geo-Standards
6. Geospatial & Statistics
7. Geospatial Information coordination within the UN System (UNGIWG)

### **III. A set of issues to be discussed by UN-GGIM for the Arab States:**

1. Common Framework: Geodetic Reference Frame: national, regional (?), global
2. Institutional Arrangements, legal and policy issues
3. Geo-Standards: adoption and implementation of international standards (including in Arabic)
4. Building/strengthening national geospatial information capacities/capabilities
5. Integration of Geospatial & Statistical Information

**(\*) Note:** The Future Trends document: Arabic translation, by Qatar and Bahrain.

## **Annotated themes for discussion:**

### **1. Common Framework: Geodetic Reference Frame: national, regional (?), global**

An initial report, prepared by then-the Permanent Committee on Geospatial Infrastructure for Asia & the Pacific (PCGIAP) and presented at the second session of UN-GGIM, considered the growing demand for and use of positioning technology, and the importance of consistent geodetic reference frameworks and positioning, including enabling infrastructure such as Continuously Operating Reference Station (CORS), Global Navigation Satellite System (GNSS) and Global Positioning System (GPS). The report noted that, for example, in the Asia-Pacific region the infrastructure is comparatively sparse, inaccurate, and difficult to access when compared to some other parts of the world. In general, the networks are not linked together, or to the global reference frame, while the lack of data sharing impacts on the accuracy and type of geodetic analysis that can be performed. UN-GGIM expressed its views on the different options for improved positioning infrastructure to support the Global Geodetic Reference System and requested a second report which has been prepared by the Regional Committee of United Nations Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP) in collaboration with the International Association of Geodesy (IAG).

The second report described the outcomes of consultations with the Member States, including: an informal consultation on the margins of the UNRCC-AP in Bangkok, Thailand in October 2012; a special session on the geodetic reference frame during the second High Level Forum in Doha, Qatar, in February 2013; a questionnaire distributed to Member States and regional organizations on the present status and role of government in adopting and maintaining a globally connected geodetic reference frame. The report particularly provided an analysis and key findings of the global geodetic questionnaire, in which over 100 Member States have responded, and considered a roadmap for future action addressing global geodetic infrastructure including identifying pathways for improved infrastructure development and geodetic data sharing.

At its third session in Cambridge in July 2013, the Committee of Experts, in welcoming the second report, “recognised the growing demand for more precise positioning services and the economic importance of a global geodetic reference frame; the need to improve global cooperation within geodesy, including to openly share data to contribute to regional and global reference frames, building on regional networks; and the need for appropriate commitment to national contributions to improve national geodetic infrastructure as a means to improve the global geodetic reference framework” and “agreed that actions be taken to facilitate the submission of a resolution to be tabled at the 2013-14 Session of the UN General Assembly to seek support and commitment at the highest level, and requested the Secretariat to establish a Working Group, with equitable regional representation, to develop the conceptual note and draft text of a UN General Assembly resolution through an open and inclusive process. A number of Member States and organizations have offered to contribute to the Working Group which is being established.

It worth noting that at the regional level, cooperation on geospatial information projects is emerging, as in the case of a unique geocentric reference system for the American continent (SIRGAS project). The Asia and Pacific region has been carrying out the similar geodetic reference work and developing the Asia and Pacific Spatial Data Infrastructure clearinghouse portal. The African Geodetic Reference Frame project (AFREF) has been set up to create a basis for national and regional three-dimensional reference networks consistent with the International Terrestrial Reference Frame. In Europe, EUREF, a sub-

commission of the International Association of Geodesy, is responsible for the maintenance of the European Geodetic Reference Frame (ETRS89).

In the Arab region, there is no Regional Geodetic Reference Frame like in other regions. Do we need it?

In summary, countries are willing to build their national reference system and participate in the building of the Global Geodetic Reference Frame and maintaining it. And building the Global Geodetic Reference Frame has been confirmed as an important mission to be carried out by UN-GGIM.

## **2. Institutional arrangements and legal framework**

- A. Building infrastructure for the gathering, validation, compilation and dissemination of geospatial information has become as important to countries as the building of roads and telecommunications networks and the provision of other basic services. It is increasingly recognized, however, that the major barriers and impediments to building geospatial information infrastructure will not be technical in nature, but rather institutional and organizational. The need to examine institutional arrangements in geospatial information management, and thereby provide governments with options on how best to create national geospatial entities, arose in earlier discussions with the global community. The need to act on this issue was substantiated by findings in the inventory of issues (E/C.20/2012/5) as one of the three most important cross cutting matters to be addressed, and also in the future trends (E/C.20/2012/3) document; both tabled at the second session of the Committee of Experts.

A report, presented at the third session of UN-GGIM, puts into context the genesis of the issue, explains why it is important to examine trends in national institutional arrangements, and provides supporting evidence based on a recent UN-GGIM survey being collated on the status of national geospatial information management systems in Member States. Although not yet completed, in examining the findings from over 50 responses to date, the report provides initial indicators towards the status on the issue, and direction for further work to be undertaken by the Committee.

In its third session, UN-GGIM “welcomed the report on the trends in national institutional arrangements in geospatial information management, thanked countries that have responded to the questionnaire, and encouraged Member States who have not completed the questionnaire to do so in order to enable a more comprehensive assessment”, and “acknowledged that there is an urgent need to discuss the issues related to national institutional arrangements and to identify best practices in these arrangements for geospatial information management, taking into account the close linkage with legal and policy and statistical institutional arrangements, for national geospatial information management, while encouraging some level of uniformity and standardization.” It also “welcomed the offer of a number of countries to work together in a small Working Group with the Secretariat to continue this exercise, building upon the initial work and the work undertaken in the regions, and report its findings back to the Committee at its next session.”

The Committee of Experts encourages Member States to complete this important base-line survey, and works on the way forward in identifying best practices and options for national institutional arrangements in geospatial information management. The Working Group is under formation.

- B. The value of geospatial information is now recognized around the globe. As a result, world leaders want to use this data to address critical global issues, such as sustainable development and disaster response. While the geospatial community recognizes that achieving “a location-enabled society” is now technically achievable, the legal and policy frameworks required to facilitate the progress of such a society are well behind.

A recent UN-GGIM questionnaire, profiling the status of national geospatial information management systems in Member States (E/C.20/2013/5), has provided a comprehensive picture of the impact that legal and policy issues have on geospatial information management in Member States. Results indicate that the policy and legal issues present a challenge to Governments as they try to collect, use and distribute geospatial information. This challenge will become even greater as Governments, the private sector, universities, NGO’s and citizens increasingly become both producers and consumers of geospatial information. At its second session, in August 2012, the Committee of Experts discussed a number of substantive items concerning the need to evolve consistent and transparent policies and laws in areas such as data privacy, licensing, ownership, national security, liability and intellectual property. The inventory of issues (E/C.20/2012/5) and the future trends in geospatial information management (E/C.20/2012/3) specifically identified institutional arrangements and legal and policy frameworks as critical issues to be addressed by the Committee in the coming years.

A report on the legal and policy issues to be considered in developing a framework to support global geospatial information management in the public and private sectors, including critical issues related to authoritative data, has been discussed at the third session of UN-GGIM in Cambridge. The Committee “welcomed the report on legal and policy frameworks, including critical issues related to authoritative data, and the valuable contribution by the Centre for Spatial Law and Policy”, and “acknowledged, as evidenced by the initial survey responses from Member States, that there are significant legal and policy challenges emerging for geospatial information, including issues related to data licensing, sharing, pricing, privacy, quality, liability, authority, security and open data.” It also “noted that legal and policy frameworks should be designed to promote, facilitate and enable the use and dissemination of geospatial information, and that any further work in this area needs to build on existing efforts, especially at the regional level” and “acknowledged that there is a need to engage with lawmakers, policymakers and lawyers on geospatial technology requirements, data including open data, applications and processes, as well as the value of geospatial information management.”

In this context, the Committee specifically requested the Secretariat to reach out to the International Bar Association (IBA) regarding their current work on a draft Convention on Geoinformation. Asked the Secretariat to continue this work with the Centre for Spatial Law and Policy and interested Member States, building on the work of the regional entities and other relevant fora such as the Group on Earth Observations (GEO).

### **3. Standards: adoption and implementation of international standards (including in Arabic)**

At its second session, in August 2012, the Committee of Experts took note of the suggestion by the International Organization for Standardization (ISO/TC211) to put forward, jointly with the Open Geospatial Consortium (OGC) and the International

Hydrographic Organization (IHO), a proposal on the issues related to standards in the international community (E/C.20/2012/12 Decision 2/103). A preliminary report was prepared and presented at the Second High Forum on GGIM, held in Doha, Qatar, in February 2013.

A report, supported by a background paper carried out jointly by ISO/TC211, OGC and the IHO, provided the background to the standards developing organizations and their procedures, collaboration, future areas in standardization, and the trends in information technology which affect standards in the context of global geospatial information management. The report also provided an overview of the range of standards that are available and applicable in the context of UN-GGIM, and highlighted those areas where contribution can be made to establish and implement standards in order to support the objectives of consistent, standardized and interoperable datasets in the respective national contexts.

At its third session in July 2013, the Committee of Experts took note of the report and expressed its views on the way forward for the international geospatial information community, including considering mechanisms for Member States to adopt and implement the existing standards in their national legal and policy frameworks.

#### **4. Building/strengthening national geospatial information capacities/capabilities**

As it was mentioned above, it is now widely accepted that building geospatial information infrastructures is as important to countries as the building of roads and telecommunications networks and the provision of other basic services. Developing national spatial data infrastructures (NSDI) will better facilitate the availability and access to spatial data for governmental organizations, the private sector, universities and citizens in general.

Some countries in the region are building and developing their geospatial infrastructures and adopting geospatial technologies, including the use of GIS, GPS and other mobile technologies in their mapping and geospatial information activities. But some others are lacking resources and technical capacity to keep up with the proliferation and rapid development of these new technologies that has put a lot of pressure on their national mapping agencies to transform mapping into digital information. They need to develop effective strategies for capacity assessment and capacity development and of exchange knowledge and best practices with other countries in the region.

A regional coordination and mechanism of exchange of knowledge and best practices is needed to develop and strengthen capacities.

For example, the European Parliament in 2007 established the Infrastructure for Spatial Information in Europe (INSPIRE) to ensure that the spatial data infrastructures of member countries are compatible and to make geospatial information more readily available for policymaking in the European Union. INSPIRE, based on the spatial information infrastructures established by the members of the European Union, addresses 34 spatial data themes needed for environmental applications, with key components specified through technical implementing rules. This makes INSPIRE a unique example of a legislated regional approach, which is promoted by the European Commission and other regional bodies, such as the European Umbrella Organization for Geographic Information.

#### **5. Geospatial & Statistics**

Geospatial information has become ubiquitous in almost every aspect of government, the economy and everyday life. Web-based mapping services, location-based technologies and services, including mobile and cloud computing, crowd-sourcing and volunteered

geographic information are just some examples, reflecting the importance of geo-referenced data and the emergence of geospatial information as an integral driver of the economic growth. This is mostly due to the fact that the use of geospatial technologies has significantly increased the quantity of geospatial data being collected and archived: we have access to imagery that, in the past, would have cost a fortune and would have required specialized, trained experts to obtain. At the same time, there is an increasing realization from planners, programme managers and policy makers that socio-economic data are related to human activities that can be geographically referenced. The geographic dimension is indeed increasingly considered as key to virtually all national statistics, providing the spatial framework and the structure for collecting, processing, storing and aggregating the data. Furthermore, it has become recognized that “adding location information increases the value of statistics” (E/CN.3/2013/2, para. 1). The close integration of location-based information in statistical applications starts to yield large benefits to national statistical offices as it reduces the cost and time required to collect, compile and disseminate information, and leads to an effective decision making at national, regional and global levels. For example, following a major natural disaster, there is an urgent need for estimates of the size, characteristics and location of the affected population groups. If we can immediately link digital maps of population distribution and housing characteristics with information about the likely zone of disaster impact, geographic information systems (GIS) with its spatial analysis techniques would provide sufficiently accurate estimates of the number of people affected, their needs in terms of medical aid, food and shelter, and, most importantly, their location. The resulting figures and maps can be quickly distributed via the Internet and mashed-up with other information sources such as road maps, satellite images or field information, making this crucial information immediately available to the various relief agencies acting in the affected area.

At its third session, held in the United Kingdom in July 2013, the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) adopted decision 3/107 (see E/C.20/2013/17), which “acknowledged the critical importance of integrating geospatial information with statistics and socio-economic data and the development of a geospatial-statistical framework, especially in the context of the on-going debate on the post-2015 development agenda” and “supported the decision by the Statistical Commission to create an Expert Group on the integration of geospatial information and statistical information, comprising members of both the statistical and geospatial communities”. In pursuance of Statistical Commission decision 44/101 and UN-GGIM decision 3/107 as described above, UNSD has established the Expert Group on the Integration of Statistical and Geospatial Information, composed of experts with an even professional mix of statistical and geospatial expertise, and with good geographical representation.

The United Nations Statistics Division organized the first meeting of the Expert Group in New York, from 30 October to 1 November 2013. The Expert Group meeting was attended by 34 experts from the statistical and geospatial communities, and international organisations. The statistical community was represented by Australia, Finland, France, Germany, India, Japan, Norway, Saint Lucia, and the United States. The geospatial community was represented by Belize, Bangladesh, Brazil, Egypt, Germany, Japan, Poland, and the Republic of Korea. International representatives were from the United Nations Economic Commission of West Asia, UNSD, the United Nations Cartographic Section, and the European Commission.

[Integrating geospatial information and statistical information has been considered as a major issue to be carried out by UN-GGIM and countries are willing to participate in the UN Group of Experts, established by the UN Statistical Commission in 2013.](#)

## **Annex:**

### **Doha Meeting – 7 Feb. 2013**

The following is a list of challenges compiled from the discussion and from responses to the pre-seminar questionnaire:

- i. Lack of coordination and cooperation between geospatial data producers and users
- ii. The need to create a national geospatial information infrastructure with a common reference frame for all users, to facilitate the exchange of information between the partners and contribute to economic development
- iii. No high level body (government authority) to ensure that all parties are committed and follow the agreed policies.
- iv. Lack of geospatial standards e.g. (structure, geographical names etc).
- v. Data inconsistency and coordinate system mismatch of the data from various stakeholders.
- vi. Spatial data is often missing or incomplete or the same data was collected by different organizations
- vii. Cultural, institutional, financial and legal barriers prevent or delay the sharing of spatial data.
- viii. Data privacy and security need to be ensured for an individual's legal and physical wellbeing.
- ix. An increasing array of and changes in technologies creates the need to quickly determine requirements and keep apace of the changes
- x. The need to develop human resources to support GIS environments, in addition to being able to retain qualified persons.