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REPORTS ON ACHIEVEMENTS IN SURVEYING, MAPPING AND CHARTING IN ADDRESSING
NATIONAL, SUBREGIONAL, REGIONAL AND GLOBAL ISSUES, INCLUDING: POLICY
AND MANAGEMENT OF NATIONAL SURVEYING AND MAPPING ACTIVITIES

Surveying Issues and Challenges for the 21st Century**

(Submitted by International Federation of Surveyors (FIG))

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Surveying Issues and Challenges for the 21st Century

Robert W. Foster, President
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I bring greetings from FIG, the International Federation of Surveyors, to participants of this 15th United Nations Regional Cartographic Conference for Asia and the Pacific. More specifically I bring greetings from the FIG Bureau - the administrative body of FIG. The FIG Bureau serves a four-year term; the current US Bureau follows the terms of office of our immediate predecessors, the United Kingdom Bureau, the Australian Bureau and the Finnish Bureau.

The theme chosen by the US Bureau members during the years we were still a "shadow bureau" during the term of the UK Bureau, was The Global Role of Surveying in the 21st Century. Two concepts we are hearing more and more about these days speak directly to the condition of our changing world in the 21st century. Those concepts are globalization and sustainable development. The subject I would like to address is the role of surveying in relation to these concepts.

In his keynote address to the XX FIG (International Federation of Surveyors) Congress in Melbourne, Australia in 1994, Dr. Peter Ellyard pointed out that the global trend most relevant to the future of surveying is what he called creation of a planetary society and culture, and what we commonly refer to as globalization. The term "globalization" as used in the popular press refers to a growing web of trade and investment between and among nations, bringing economies into close proximity - and drawing societies and cultures along in the process. The emergence of a common market and common currency in Europe is an example. The North American Free Trade Agreement, an event of considerable controversy in my country, is another. The General Agreement on Trade in Services provides for a set of multilateral rules for the conduct of services trade and creates a framework for a process of liberalization.

To understand the impact of globalization on surveying, and to understand the role of surveying in the globalization development, it might be helpful to review what surveying is. The FIG definition of surveying describes nine activities "which may occur either on, above or below the surface of the land or the sea and may be carried out in association with other professionals." Those activities, briefly, are

- The determination of the size and shape of the earth
- The positioning of physical features, structures and engineering works
- The determination of the position of boundaries of public or private land
- The design, establishment and administration of geographic information systems
- The study of the natural and social environment for the planning of development in urban, rural and regional areas
- The planning, development and redevelopment of property
- The assessment of value and the management of property
- The planning, measurement and management of construction works
- The production of plans, maps, files, charts and reports

The surveying community is made up of a broad range of professionals whose scope of operations extends from the local land surveyor who works within 100 kilometers of his or her home office, to the land valuer with operations of national scope, to the geographic information specialist who may offer services internationally. Interestingly, the professional with the narrowest scope of operations, the local land surveyor, may be the practitioner with

the highest appreciation of land tenure and security of land tenure, issues of great interest in the emerging land markets in many parts of the world. The Bathurst Declaration on Land Administration for Sustainable Development, a document that will be a major center of discussion and reference in the months and years ahead, recommends a global commitment to "providing effective legal security of tenure and access to property for all men and women, including indigenous peoples, those living in poverty and other disadvantaged groups". Security of tenure is an issue of importance to members of the surveying profession.

The technical work of FIG is accomplished in nine commissions that reflect the disciplines of surveying as defined by the FIG definition of surveying. Those commissions, and a brief description of some of their interests, are

- Commission 1 - Professional Practice: ethical principles and codes of professional conduct, standards of business practice and quality management, liberalization of trade in services, and the role of surveyors in the public service.
- Commission 2 - Professional Education: education and teaching methods, continuing professional development and training, the interaction between education, research and practice, and the exchange of students and personnel between countries.
- Commission 3 - Spatial Information Management: the management of land, property and hydrographic information, spatial data infrastructure and the management of spatial information supporting sustainable development.
- Commission 4 - Hydrography: the marine environment, hydrographic surveying, data processing and management, nautical charts and maps.
- Commission 5 - Positioning and Measurement: the science of measurement and the acquisition of data on the position, size and shape of natural and artificial features of the earth and its environment.
- Commission 6 - Engineering Surveys: acquisition, processing and management of topographic and related information through the life cycle of construction projects.
- Commission 7 - Cadastre and Land Management: land management and administration; cadastral reform and multi-purpose cadastres; parcel-based land information systems; land tenure, land law and land registration; urban and rural land consolidation.
- Commission 8 - Spatial Planning and Development: regional and local planning; urban and rural land use planning; planning policies and environmental improvement; public-private partnerships, informal settlements and urbanization in developing countries; and environmental impact assessment.
- Commission 9 - Valuation and Management of Real Estate: estimating the value of real estate for market value, property taxation, eminent domain, claims of damage, acquisition for public use; investment planning; development finance; land use feasibility planning ; and management of property systems.

The Commission on Construction Economics is an ad hoc commission of FIG whose interests are construction technology, construction economics and measurement, construction management, and construction law and contract administration.

Each of the FIG commissions has prepared a plan of work for its four-year term of existence. The commissions are supported in their work plans by the Bureau, whose own plan of work is coordinated with those of the commissions. While the commissions provide primarily the technical operations of FIG, the Bureau develops and conducts liaison with other institutions such as ISPRS, the International Society for Photogrammetry and Remote Sensing, ICA, the International Cartographic Association, IAG, the International Association of Geodesy, IHO, the International Hydrographic Organization and FIABCI, the International Real Estate Federation.

A major accomplishment of our predecessor Bureaus was the development of a working relationship with certain agencies of the United Nations. United Nations Department of Economic and Social Affairs, Statistics Division, New York, supported and participated with FIG in the Bathurst Workshop on Land Tenure and Cadastral Infrastructure for Sustainable Development, which produced the important Bathurst Declaration. Another example is a Memorandum of Understanding of FIG and the UN Centre for Human Settlements (Habitat) signed in 1997 to establish a framework of partnership for the implementing of land- and construction-related recommendations contained in the Habitat Agenda. Typical of the several activities proposed in the MoU was the publishing of the proceedings of the Habitat II Dialogue #6 on "Land and Rural-Urban Linkages in the 21st Century" held in Istanbul in June, 1996. Also, in March, 1997, FIG and UNCHS (Habitat) participated in a UNECE Meeting of Officials on Land Administration (MOLA) on the theme of "Financing Land Administration Projects in Countries in Transition". These and other activities anticipated in the FIG/UNCHS Memorandum of Understanding were successfully completed. Additional activities were identified to be implemented in 1999 and an extension of the MoU was signed by Daniel Biau, Ag. Deputy Executive Director for UNCHS, and myself on 25 May, 1999.

The US Bureau is committed to continuing and strengthening these relationships through our term of office, as specified by our Bureau Plan of Work. A further extension of the UNCHS/FIG Memorandum of Understanding for the period of the US Bureau has been prepared and agreed and will be signed probably at the FIG Working Week in Prague in May. An example of joint activities anticipated in the new MoU is promotion of the Habitat Global Campaign on Security of Tenure and Urban Governance at regional and local levels, and participation in preparatory meetings for Istanbul + 5 as member of the Steering Committee of Habitat Professionals Forum

FIG Publication Number 21 is titled "Co-operation Between FIG and UN Agencies 2000 - 2003; Report of the FIG/UN Roundtable Meeting in Melbourne 1999".

The Melbourne Roundtable was attended by several FIG people from both the previous UK Bureau and the current US Bureau. UN agencies represented were

- The Centre for Human Settlements (Habitat),
- The Department of Economic and Social Affairs, Division for Sustainable Development,
- The Food and Agriculture Organization,
- The Economic Commission for Europe, and the
- The Economic Commission for Africa.

Also represented were the Permanent Committee on GIS Infrastructure for Asia and the Pacific, the German Agency for Technical Cooperation, and The World bank.

The Melbourne Roundtable identified twelve "Guidelines for Future FIG/UN Cooperation". Two of those guidelines are

- To recognize that FIG is in a unique position to bring together various UN agencies interested in land administration and spatial information management as a group to discuss issues of common concern. In this regard FIG can act as a facilitator in encouraging networking between UN institutions and bilateral institutions, and
- To recognize that FIG is a non-profit organization whose great strength is its access to a large pool of experienced professionals, who in general contribute their services voluntarily to FIG activities.

The US Bureau will use these guidelines in carrying out its commitment to continue the work of its predecessors in cooperation with UN agencies and other institutions with an international interest in land administration. I am confident that our successors, the German Bureau of FIG, will continue in this commitment.

As we enter this new millennium we attempt to identify the best means of accomplishing our goals as an international federation. Institutions and institutional arrangements are changing almost as rapidly as the technologies we all work with. FIG is a federation of national associations of surveyors. As such, the FIG leadership is twice removed from individual members of the surveying profession. One of the main objectives of our Bureau is to involve the national member associations and their individual members more actively in the work of FIG. One means of accomplishing this is by changing the method of selecting the administrative body. Instead of selecting a Bureau from the country that proposes to host the FIG Congress, held every four years, we propose to select the administrative officers by popular election, thereby democratizing the process.

Another method for involving our member associations and their members in the work of FIG is by regionalizing our activities. As an international federation FIG has deliberately avoided regionalization in the past. But the increasing activities of UN agencies like the Economic Commission for Africa and the Economic Commission for Europe Meeting of Officials on Land Administration, and location of Habitat and the Permanent Committee on GIS Infrastructure for Asia and the Pacific regional offices in Japan, are an encouragement to FIG to re-think its position on the issue and may provide a means for encouraging more activity of our members in UN activities in their own neighborhoods.

We do, indeed, live in interesting times. The times are especially interesting for the surveying profession. While the world wide web and email make communication quick and easy, bringing us all closer together, they also place great demand of urgency on all our activities. Every request for information and decisions demands an immediate response. Globalization is requiring our members, many of whom have had an historically provincial perspective, to broaden their view of the world and their role in it. The challenges are great for our profession if it is to find an active place for itself in an age of globalization; and the challenges are great for the world if it is to attain a level of sustainable development. FIG intends to lead the surveying profession in the effort toward sustainable development while finding opportunities rather than obstacles in globalization.