

ECONOMIC AND SOCIAL COUNCIL

**Twentieth United Nations Regional Cartographic
Conference for Asia and the Pacific
Jeju, 6 - 9 October 2015
Item 7(b) of the provisional agenda
Invited Papers**

National Perspectives: Japan's View *

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**Geospatial Information for the Global Development Agenda
- National Perspective: Japan's View -**

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1. Introduction

Year 2015 has become a very important one for the UN as it is entering a new phase of tackling outstanding and urgent global issues. The 2030 Agenda for Sustainable Development identified 17 goals that the member states should focus on¹, and The Sendai Framework for Disaster Risk Reduction² also identified goals and priority issues for disaster risk reduction. We also anticipate that COP21/UNFCCC in Paris in late 2015 will adopt a new plan to reduce greenhouse gas emission. All these programmes under the UN initiatives are very important for the future of the global community and our sustainable planet. However, these global issues sound somewhat far from what National Geospatial Information Authorities (NGIAs) in the world are daily doing. And it is natural to wonder why the Twentieth United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) has chosen “Geospatial Information for the Global Development Agenda” as its main theme. This paper tries to answer this question from the national perspective of Japan based on the experience of the Geospatial Information Authority of Japan (GSI) in its involvement in the work of disaster risk reduction in the Government of Japan.

2. Where do NGIAs stand now?

Most NGIAs in the world share common core missions including ensuring accurate surveying in the country through developing and maintaining geodetic reference frame, and also ensuring the availability of up-to-date, basic national geospatial database, through the national mapping programme. In the past, these core missions were considered “sacred” requiring special expertise NGIAs only had, and no other organizations could have intervened in them. However, the last 10 years saw rapid expansion of the geospatial information market and dissemination of new technologies that allow the industry and even non-experts to provide geospatial information products and services that are more attuned to the need of individual users than those provided by NGIAs.

This means that NGIAs now have new and powerful players in the geospatial information community and many people look satisfied with their products and services and less appreciative on the work of NGIAs. More seriously, some policy makers are also misled by these new players and become less confident in the work of NGIAs. Therefore it is now a challenge at least for some NGIAs to remind them of the important work NGIAs are doing for the countries. The question is what should they be

¹ <https://sustainabledevelopment.un.org/post2015/transformingourworld>: At the time of writing this paper, the draft has not yet been adopted at the UN General Assembly.

² <http://www.preventionweb.net/files/resolutions/N1516716.pdf>

reminded of and how it can be done most effectively.

3. Authoritative/official and reliable geospatial information

The last few years saw increasing recognition in the NGIA community in the world of the importance of using authoritative or official and reliable geospatial information that NGIAs provide for evidence-based policy and decision making. And this should be the message that is to be brought to the attention of policy makers. It sounds self-evident that government decisions and policies should be based on official data. However, it will be more so in the era of open data, because government decisions and policies could be scrutinized by ordinary citizens who can now use widely available government data on the web, and if there is any inconsistency in their decisions or policies compared with the available data, they could now raise objections to the Government. In the case of geospatial information, however, since the advantage of using common authoritative and reliable geospatial information among different Government offices in making decisions is not well understood by all policy makers, just delivering geospatial information or talking to them about its importance may not be fully appreciated by them.

Through its experience in Japan, one of the most effective ways GSI has found to deliver this message is to show them how their policy or decision making can be supported by actually using geospatial information. Of course it requires GSI to get involved in their decision making, which is sometimes not welcomed or appreciated at the beginning, since it is not easy to introduce a new way of doing things in government offices. In such cases, it usually takes time to get their full understanding. However, if we have “a higher calling” from the top management or a formal agreement of the international community, it greatly helps us make our message more understandable for the policy makers.

4. Global Agenda as an opportunity for NGIAs

In this connection, Global Agenda including the 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction, both of which have already clearly recognized the importance of geospatial information, could provide an important opportunity for NGIAs to get more involved in the process of policy making in their Governments. For example, countries will be requested to report on the progress of their implementation of the Global Agenda through a number of indicators, which should be based on official data. So if NGIAs are willing, they can contribute to the policy making processes in the high priority issues of the Agenda. Obviously, NGIAs may not be able to be involved with every issue in the Agenda. However, depending on the priority of the Governments, NGIAs may find at least one or two issues that NGIAs could assist by using geospatial information. This is exactly what GSI has been doing in Japan on disaster risk reduction.

5. GSI's experience in disaster risk reduction

Japan is prone to many types of natural hazards, which sometimes cause large disasters

claiming many people's lives. Once a disaster takes place, it becomes the top priority for the Government. And many of the Government offices work promptly to properly respond to the disaster. GSI now does the same once a disaster takes place. However, GSI's involvement in disaster risk reduction including disaster responses did not happen overnight. Rather, GSI made many years of attempts to apply the geospatial technology to find out how GSI could contribute to disaster risk reduction.

GSI started its work on disasters by just developing geomorphological maps as early as 1960s to delineate areas that were susceptible to floods, which was prompted by a huge typhoon that had hit the country in 1959 and claimed more than 5,000 people's lives due to floods caused by the storm surge. Since then, GSI has been developing basic geospatial data including geomorphology, topography, and active faults. These data sets have provided very useful information for municipalities to prepare their hazard maps, and have greatly contributed to raising awareness of their citizens and their preparedness to potential disasters.

In addition to such basic data development for disaster risk reduction, GSI has been making efforts to improve its support to the Government's response to disasters, for example, by providing existing maps to relevant Government offices and by taking air photos that show the impacts of disasters, and has been increasingly involved in disaster response activities while interacting with the people in different Government offices to find out their need. These efforts have made the Government and the policy makers recognize the important role that geospatial information can play in disaster responses and risk reduction. Through these efforts, GSI has also learned how it can best contribute to their decision making processes.

For example, in September 2015, there was a torrential rain in the eastern part of the country, which had been the severest rainfall in 50 years in the region according to the Meteorological Agency, and a number of rivers were flooded and some levees were broken. The river water was gushing through the broken levees and caused the residential areas inundated and some houses washed away. GSI immediately mobilized its airplane to take air photos, and by showing air photos taken before and after the flood, GSI was able to show the impact of the flood and some of the houses that have been washed away. These images helped the Government and people understand the impact of the disaster. However, these are not only the things GSI did for this particular disaster. These images could have been taken and brought to the attention of the Government even by private air survey companies and the media.

There was another work GSI did to assist the Government, which was to measure the impact and also the recovery process by measuring the area of inundated land. Technically speaking, measuring areas is a very simple and easy thing anybody, even a high school student, could do with GIS. The most important point here, however, is that the Government doesn't want to have multiple figures on the same parameters like the area of inundated land when they need to quickly make subsequent important

decisions like how many drainage pumping machines and how many workers should be deployed to the flooded areas, and how long they should be staying in the site. The question is who will be able to deliver such an official figure accurately and in a timely manner. If GSI won't, somebody else in the Government will, even less accurately, because such figures need to be provided promptly to assist the subsequent decisions, particularly for the recovery operations.

In order to meet such a need, GSI immediately mobilized its photo-interpreters to delineate the inundated land and update the line nearly every day by interpreting the air photos until the areas became small enough through the water pumping operation. Then the delineated inundated areas were measured and reported to the Government, which used them as official figures in making decisions on their recovery operations. These figures were also quoted in the front page of major newspapers, and considered accurate and trustworthy as they were coming from GSI. Even though just measuring areas sounds technically very simple, the significance and its value could not have been known to GSI unless GSI had had frequent interaction with different Government offices and found out their need.

6. Lessons learned

Out of these experiences, the following are the lessons learned, though they are already well understood and may not be all new. First, just providing geospatial information may not necessarily ensure that it will be used by policy makers in making their decisions as they may not be familiar with how it can be applied to their problems. And secondly, NGIAs need to interact with them to get better understanding on their needs and find out what NGIAs should deliver to them to assist them in their decision making. In the case of GSI working on disasters, this sometimes means to work intensively when a disaster takes place, even working overnight to deliver what the relevant Government offices need. However, the information GSI provides, when it is delivered in a timely manner, is highly appreciated even in the media, and contributes to priority issues of the Government.

7. Summary

In summary, the following two things should be pointed out. First, with the adoption of very important documents on global agenda this year, and at least two of them have clearly stated the importance of employing geospatial information in tackling the global agenda, NGIAs now have a wonderful opportunity to contribute to the Government and to the global community with geospatial information. And NGIAs are now even called to work closely with the policy makers in the Government to find out their need and to deliver what they need by applying the geospatial technology.