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**DATA PREPAREDNESS IN ASIA: WHERE WE ARE WITH SALB 10 MONTHS
AFTER THE LAST PCGIAP EXECUTIVE BOARD MEETING**

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Data preparedness in Asia: Where we are with SALB 10 months after the last PCGIAP Executive Board Meeting

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Abstract

If it is always difficult, if not in some cases impossible, to anticipate when and where a natural disaster will happen it is possible to anticipate the need for data that will necessarily arise during the first phase of any relief effort.

Among the different layers that are always part of this data need we find the administrative structure of the country/countries affected by the event in question. The Second Administrative Level Boundaries data set project (SALB) is one of the initiatives that aims at answering this need by providing free access to historic changes tables and GIS format maps for each of the United Nations Member States.

This initiative and the specific issues that are encountered in Asia have been presented during the Executive Board Meeting of Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP) which took place the 26 November 2005 in Bandar Seri Begawan, Brunei Darussalam (Ebener & Guigoz, 2005).

This paper describes the actions that have been taken since then in order to solve these issues and presents the current state of progress before discussing the work that remains to be done in order to reach the complete coverage for the PCGIAP Region.

Keywords: Data preparedness, Asia, SALB, administrative boundaries, Geographic Information System (GIS),

1. Introduction

The administrative structure of a country evolves continuously. Any information system that wants to manage data collected through time and/or coming from different sources therefore needs to integrate this evolution. When it comes to data visualization, the same information system also needs to have access to a map, in digital format, for each period of representativity observed in the data base.

If we transpose this need to disaster relief, the integration of data coming from different sources and different period of representativity as well as its visualization remains. There are nevertheless additional needs that people, involved in the relief effort, do have: they need to know what is the current administrative structure of the country(ies) even if data have not yet been collected according to it and to have access to other layers (e.g. roads, rivers,...).

In close collaboration with the National Mapping Agency (NMA) of each United Nations Member States, the SALB project is trying to answer these needs by providing free access to:

- Up-to-date NMA contact information
- the changes observed in the administrative structure in terms of geography and names at the 1st sub national level since January 1990 and at the 2nd sub national level since January 2000
- a GIS format map for each period of representativity observed since January 2000

If the contact information is useful for obtaining the other layers mentioned above, the data set itself is supposed to provide the necessary information for collecting, managing, sharing and visualizing data attached to administrative subdivisions down to the 2nd sub national level.

More information regarding the specifications and the process followed by SALB can be found in Ebener & Guigoz (2005) or on the SALB web site itself (http://www3.who.int/whosis/gis/salb/salb_home.htm) from where the contact information and data already collected can also be downloaded.

The National Mapping Agencies are playing a crucial role in this process as they have been identified as the governmental body from which the validation of the information and data is obtained before being posted on the SALB web site. In addition to that, the large size of this project compared to the resources at disposal, the important quantity of missing information and the willingness to avoid duplication of efforts have called for the establishment of collaboration with other global or regional entities or initiatives.

This is why, since the launching of this project, a lot of efforts have been put in meeting with representatives of the National Mapping Agencies and global or regional entities/initiatives. For Asia, this has for example been the case during the Executive Board Meeting of Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP) which took place on November 26th, 2005 in Brunei Darussalam.

The presentation made during this meeting described the difficulties that SALB has been encountering these past years directly at the origin of the poor state of progress unfortunately observed in Asia (Ebener & Guigoz, 2005). These conclusions emphasized the need to find

solutions to overcome the identified difficulties and to strengthen collaboration between the different initiatives and entities producing or aiming at improving geographic information in the region.

Participants to the Executive Board have expressed their interest in the project and willingness to help improving the situation in Asia, especially in view of the potential regional or global threats that countries in this region might have to face in the future (natural disasters, bird flu,...).

These positive feedbacks have been at the origin of the integration of the SALB project within two resolutions presented during the workshop organized by PCGIAP and accepted the same week during its Executive Board Meeting (Annex I). The first resolution strengthens the collaboration between SALB, the Global Mapping initiative and PCGIAP while the second one includes SALB as one of the initiatives to collaborate on a pilot project aiming at generating a seamless data set for the tsunami affected area.

The actions that have been taken since then on the basis of these resolutions, the progresses made as well as the work that remains to be done in order to achieve the complete coverage for Asia are presented in the coming sections.

The publications, slides and documents mentioned in this paper can be downloaded directly from the project overview page on the SALB web site (http://www3.who.int/whosis/gis/salb/salb_PO.htm).

2. Actions taken to overcome the identified difficulties

The difficulties identified these past years as being the major factor slowing down the SALB process in Asia are the following:

1. Lack of responsiveness and appropriate maps for several countries,
2. Absence of a SALB editing node for the region,
3. Communication issues: language and time difference,
4. Presence of big countries with a large number of sub national units (India, Indonesia, Japan and Russia),
5. Representation of disputed areas and borders,

The actions taken in order to overcome these difficulties since last November are presented in the following sections.

2.1 Lack of responsiveness and appropriate maps for several countries

Participation to selected regional conferences or meetings is always an opportunity to meet representatives from National Mapping Agencies, try to engage them in the process and sometime even directly collect some of the missing information or data. For example, during the 8th South East Asia Survey Congress (SEASC), the PCGIAP workshop and Executive Board Meeting that followed last November it has been possible to discuss with representatives coming from 10 PCGIAP member countries (Australia, Brunei Darussalam, Cambodia, China, Indonesia, Japan, Malaysia, Republic of Korea, Singapore and Vietnam).

The progress made thanks to these meetings and follow up discussion is reported in the next section of this paper. Unfortunately, no other opportunities presented themselves since last November.

We also think that building a regional culture for the creation and sharing of geographic information would be of benefit to the countries by reducing duplication of efforts and filling the gaps that still exist in terms of maps.

In this context, SALB has always been looking at strengthening its collaboration and participation in the activities of Regional and Global bodies such as PCGIAP and the International Steering Committee for Global Mapping (ISCGM). This willingness has for example been crystallized through the 1st resolution accepted during the last PCGIAP Executive Board Meeting (Annex I) and is at the origin of the participation of SALB, in collaboration with ISCGM, to the PCGIAP Working Group 2 pilot project aiming at creating a seamless data set for the tsunami affected area (Purnawan, 2006 and Annex I). It is hoped that this type of activities, developed and conducted in collaboration with the countries will lead to more interest and engagement from the countries to participate in regional and/or global initiatives.

Finally, the December edition of the SALB Newsletter, which is sent every 3 months to the contacts we have in the National Mapping Agencies as well as more than 300 individuals working within and outside of the UN, was dedicated to the situation observed in Asia. The two resolutions mentioned above (Annex I) were reported in this edition.

2.2 Absence of a SALB editing node for the region

Regarding the absence of an editing node for Asia, a meeting has been organized in Bangkok on November 28th, 2005 by the UN OCHA Regional Office for Asia and the Pacific in collaboration with the SALB coordination team and with the support of the Bureau for Asia of the World Food Programme (WFP).

Despite the GIS capacity present in different agencies based in Bangkok and that attended this meeting (FAO, OCHA, UNDP, UNEP, UNESCAP, UNICEF, WFP and the Wildlife Conservation Society) for most of them it would be difficult to make any staff resources available for processing under the SALB project. This as well as the fact that most of these agencies might have to go in the field to respond to specific crisis and are covering a different number of countries makes it difficult to establish an editing node for the SALB project in Bangkok.

This meeting nevertheless allowed to extend the network of contact in Asia and also to directly meet with the Royal Thai Survey Department in order to discuss how we could move forward with the update of the data set for Thailand. From there, it has been decided to look at other options for the establishment of the node. A proposal for receiving some funding has therefore been submitted to a donor and discussions are currently taking place with an academic institute and the regional office of a UN agency, both based in Bangkok, in order to see if collaboration could be established with them.

In the meantime we have been able to benefit from the help from different interns based either at WHO in Geneva or at OCHA ReliefWeb in New York. In addition to that, the funding recently received from the WHO Department for Health Action in Crises at WHO in order to develop a standardized administrative district level maps for the WHO/EMRO Atlas of Disaster Risk (Musani et al, 2006) will provide an opportunity to make progresses with 3 countries that are in common with the PCGIAP Region (Afghanistan, Iran and Pakistan).

2.3 Communication issues: language and time difference

Several actions have been taken in order to solve the communication issues. The project firstly benefited from the help of a Russian speaking intern who actively worked at completing the SALB data set for all the Russian speaking countries. Unfortunately this activity has been very limited in time and did not allow us to finalize the process for several of them. We then could beneficiate from the connection that we have in some of these countries, like for example in Kyrgyzstan where UNHCR is currently helping us in getting the necessary information and data.

The time difference problem will only be solved the day we will have an editing node in Asia.

2.4 Presence of countries with a large number of sub national units (India, Indonesia, Japan and Russia)

Following up on historic changes taking place within countries subdivided into a big number of units represents an important challenge for the National Mapping Agencies.

For Indonesia, the meeting that took place with the National Mapping Agency since the 8th International Conference on the Global Spatial Data Infrastructure (GSDI) and the active collaboration that followed allowed to make significant progresses towards the creation of the Historic changes observed in this country since January 2000.

For Japan, the January 2000 table as well as the historic changes observed at the 1st sub national level between 1990 and 2003 is already available from the SALB web site. A process has now started in order to complete the historic changes information and being able to have access to a map that could be used in the context of the SALB project.

For the other two countries, apart from the contact information for India and despite the help received from the WHO Country office in Russia, it has so far not been possible to establish the same collaborative process in order to build the same list. Contacts and discussion nevertheless continue to take place in order to find a solution to this issue.

2.5 Representation of disputed areas and borders in question

Finding a solution for the representation of disputed areas and borders in question that would at the same time comply to the UN practice while still respecting the view of the countries is a difficult and sensitive topic.

A possible solution is currently under evaluation by the WHO Office of the legal Counsel with whom SALB is collaborating. If accepted, this solution will be proposed to the concerned countries and therefore applied in the context of the SALB project.

3. Progresses made since the last PCGIAP Executive Board meeting

In November 2005, the following information and data was downloadable from the SALB project web site (Ebener & Guigoz, 2005) for the 47 PCGIAP Member Nations that are also Members of the United Nations:

- NMA contact information for 14 countries,
- January 2000 list of administrative units for 33 countries,
- Historic changes going at least until January 2005 for 4 countries,
- January 2000 map validated for 3 countries, the map for 7 countries being still under validation at that time.

The current state of progress of the project is reported in Table 1.

In this table the progresses made since the last PCGIAP Executive Board meeting are reported in grey. These progresses translate into the following information and data that can now be downloaded from the SALB web site:

- NMA contact information for 26 countries (+12)
- January 2000 list of administrative units for 33 countries (no changes),
- Historic changes going at least until January 2005 for 12 countries (+8),
- January 2000 map validated for 5 (+2) countries, the map for 9 (+2) countries being still under validation at that time.

The countries where significant progresses have been made are: Azerbaijan, Brunei Darussalam, Cambodia, China, Kyrgyzstan, Lao People's Democratic Republic, Papua New Guinea, Philippines, Republic of Korea, Sri Lanka, Timor-Leste and Uzbekistan.

Country	Contact information update	List January 2000	historic changes 1st level	historic changes 2nd level	Process regarding the map, August 2006
Afghanistan	-	yes	under process	under process	Problem for obtaining a map
Armenia	18.04.2006	under process	under process	under process	Problem for obtaining a map
Australia	19.01.2006	yes	under process	under process	Jan 2000 map validated
Azerbaijan	28.03.2006	yes	1991-2006	2000-2006	Problem for obtaining a map
Bangladesh	-	yes	under process	under process	Jan 2000 map under validation
Bhutan	06.07.2005	yes	1990-2005	2000-2005	Problem for obtaining a map
Brunei Darussalam	-	yes	1990-2005	2000-2005	Map under edition
Cambodia	-	yes	2000-2006	2000-2006	Missing information
China	08.09.2005	yes	1990-2006	2000-2006	Problem for obtaining a map
Democratic People's Republic of Korea	-	under process	-	-	-
Fiji	14.09.2005	yes	under process	under process	Missing information
India	22.06.2005	under process	1990-2004	partial (not coded)	-
Indonesia	01.07.2005	under process	under process	under process	-
Iran (Islamic Republic of)	20.12.2005	yes	under process	under process	Problem for obtaining a map
Japan	07.09.2005	yes	1990-2003	under process	Problem for obtaining a map
Kazakhstan	05.04.2006	yes	under process	under process	Missing information
Kiribati	-	yes	under process	no 2nd admin level	Missing information
Kyrgyzstan	07.03.2006	yes	under process	under process	Jan 2000 map under validation
Lao People's Democratic Republic	11.07.2006	yes	1990-2006	2000-2006	Problem for obtaining a map
Malaysia	11.05.2006	yes	1990-2005	2000-2005	Problem for obtaining a map
Maldives	-	yes	1990-2005	under process	Jan 2000 map validated
Marshall Islands	-	yes	under process	no 2nd admin level	Problem for obtaining a map
Micronesia (Federated States of)	-	yes	1990-2003	2000-2003	Problem for obtaining a map
Mongolia	21.02.2006	yes	under process	under process	Problem for obtaining a map

Myanmar	-	under process	-	-	-
Nauru	-	no admin divisions	no admin divisions	no 2nd admin level	Jan 2000-May 2005 map under validation
Nepal	01.06.2005	yes	1990-2005	2000-2005	January 2000-June 2005 map under validation
New Zealand	-	under process	-	-	-
Pakistan	-	under process	under process	under process	-
Palau	04.07.2006	under process	under process	under process	-
Papua New Guinea	-	yes	2000-2006	2000-2006	Problem for obtaining a map
Philippines	06.09.2005	yes	1990-2006	2000-2006	Jan 2000-Feb 2001 map validated, Feb 2001-Feb 2006 maps under validation
Republic of Korea	07.10.2005	yes	under process	under process	Missing information
Russian Federation	-	under process	under process	under process	-
Samoa	-	no admin divisions	no admin divisions	no admin divisions	Jan 2000-May 2005 map under validation
Singapore	-	yes	under process	no 2nd admin level	January 2000 map under validation
Solomon Islands	-	under process	-	-	-
Sri Lanka	07.07.2005	yes	1990-2005	2000-2005	Jan 2000-Jul 2005 map validated
Tajikistan	25.04.2006	under process	under process	under process	-
Thailand	05.07.2005	yes	1990-2003	under process	Problem for obtaining a map
Timor-Leste	29.09.2005	yes	2000-2005	2000-2005	Jan 2000-Nov 2005 map validated
Tonga	-	under process	-	-	-
Turkmenistan	-	yes	-	-	Jan 2000 map under validation
Tuvalu	24.05.2006	under process	-	-	-
Uzbekistan	14.06.2005	yes	1991-2002	2000-2002	Jan 2000-Dec 2001 map under validation
Vanuatu	-	yes	under process	no 2nd admin level	Jan 2000 map under validation
Viet Nam	22.06.2005	yes	under process	under process	Problem for obtaining a map

Table 1 - State of progress regarding the tables and maps produced in the context of the SALB project for the PCGIAP member countries

Discussion and Conclusion

Despite the different actions taken in order to overcome the issues identified during the last PCGIAP Executive Board meeting and the continuity of the support received from several institutions the progresses made these past 10 months (Table 1) remain limited if we look at them from a regional perspective and in view of the work that remains to be accomplished in order to complete and/or update the data set for all the 47 PCGIAP Member Nations.

The analysis of the activities linked to the 12 countries for which significant progresses have been made is providing interesting information regarding the way forward to fill the gap. The progresses made for:

- Sri Lanka and Timor-Leste have been in the continuity of the good responsiveness shown by the NMA of these two countries since the beginning of the project,
- Brunei Darussalam, Cambodia, China and the Republic of Korea are linked to the possibility of having met in person representatives of the concerned NMA during the 8th SEASC, the PCGIAP workshop and Executive Board Meeting,
- Papua New Guinea and the Philippines are due to the support provided to SALB by an intern,
- Azerbaijan and Kyrgyzstan are linked to the availability of a Russian speaking persons that helped us in directly contacting the NMA for us,
- the Lao People's Democratic Republic are linked to the participation of SALB in the PCGIAP Working Group 2 pilot project

These observations illustrates very well the direction in which efforts will be put in the coming months in order to complete or update the database for the PCGIAP Member Nations.

When a NMA is responsive progresses can be done quickly. Vietnam and Indonesia are also very responsive and we hope to be able presenting new progresses for these two countries or others during the 17th UNRCC-AP Conference.

The most productive way to engage some of these countries in the project is to meet their representative in person. This underlines the importance for SALB to continue participating to regional meeting and/or conferences to which the NMAs are invited and to participate to regional or global initiatives looking at administrative boundaries. This also emphasize s the importance of committees, such as PCGIAP, to continue organizing these meetings and developing regional activities such as the Working Group 2 pilot project.

There is also a real need to expand the human resources working on the SALB project in order to speed up the process. This will have to be done through the establishment of an editing node for Asia in order to have access to countries located in time zones which are too far away from the actual nodes as well as to contribute to the data collection, editing and validation process. It also confirms the need to complete the team with a Russian speaking person that would be in charge of NMAs, not easily accessible in English. At a

smaller scale it finally demonstrates the contribution the interest to continue working with interns.

Last but not least, fund raising will of course have continue in order to sustain all these activities.

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They would also like to thank the institutions and individuals who have contributed to the progresses of SALB in Asia these past months. Hoping that nobody has been forgotten these thanks go to:

- USAID, WHO/HAC/EPC and UNHCR for the funding provided to the project,
- the UN OCHA Regional Office for Asia and the Pacific and the Bureau for Asia of the World Food Programme (WFP) for having organized the meeting in Bangkok
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Annex 1 - Resolution accepted during the 2005 PCGIAP EB, Brunei Darussalam

1. Development of special dataset

The Workshop

Recalling the huge disaster linked to the earthquake and the tsunami which happened in the Asia and the Pacific region the 26 Dec. 2004, and the necessity to react to such event at the regional level,

Noting the significance of the results obtained from WG1 Extraordinary Geodetic Campaign,

Recommends that WG2, jointly with WG1, to develop and implement a pilot project for the generation of a set of seamless data layers for the tsunami affected area to contribute to the creation of the AP seamless data set in collaboration with Global Mapping, SALB and other similar initiatives.

2. Strengthening the linkage between Global Map, SALB, and PCGIAP

The Workshop

Recalling the resolution #3 Fundamental Data adopted by the 16th UNRCC-AP,
Recalling the resolution adopted by the 8th PCGIAP encouraging cooperation on development of SALB dataset,

Noting the important progress of fundamental data development at regional level.

Noting the importance of Global Map and the SALB dataset for Asia and the Pacific region,

Recommends that

- (a) PCGIAP WG2 seek to strengthen the linkage with Global Map, SALB and other similar initiatives
- (b) PCGIAP Member States, particularly through their National Mapping Organizations and notably with the help of PCGIAP, support and participate actively in Global Map and the SALB project by providing the necessary data and information they require.