

# THE SALB PROJECT: STATE OF PROGRESS IN ASIA AND THE PACIFIC SINCE THE 8<sup>th</sup> SEASC

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## ABSTRACT:

The Second Administrative Level Boundaries data set project, SALB, was launched in 2001 under the umbrella of the United Nations Geographic Information Working Group (UNGIWG) with the objective to provide the international community with a working platform for the collection, management, analysis, visualization and sharing of sub-national data down to the district level. While catering the needs of the UN, SALB project also facilitates easy access to crucial geographic information during crisis through the channel that it establishes with the National Mapping Agencies and contribute contents for the development of a Global Spatial Data Infrastructure (GSDI).

In close collaboration with the National Mapping Agency (NMA) of each United Nations member state, SALB project aims at providing the users with the following country validated data and information:

- 1) Updated contact information of the NMA
- 2) Coded historic changes starting from 1990 for the 1<sup>st</sup> sub-national level and from 2000 for the 2<sup>nd</sup> sub-national level
- 3) Digital maps, in a GIS format, presenting the delimitation of the 2<sup>nd</sup> sub-national level administrative boundaries for each period of representativity observed since January 2000

During the 8<sup>th</sup> South East Asia Survey Congress (SEASC) which took place in Bandar Seri Begawan, Brunei Darussalam in November 2005, SALB reported that Asia and the Pacific was, unfortunately, the region for which the biggest gap had been observed in terms of the last 2 products mentioned above.

Due to this reason, special efforts have been made to increase the capacity of SALB in this region through a collaboration with the Asian Institute of Technology (AIT) and to strengthen the collaboration with regional and global initiatives such as the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP) and the International Steering Committee for Global Mapping (ISCGM).

These efforts resulted in tangibles progresses which will be presented during the 10th SEASC. Gaps nevertheless remains and it becomes crucial to fill them as soon as possible in close collaboration with the NMAs in view of the challenges that the world might face in the near future (i.e. climate change, natural disasters, health threats,...)

**KEY WORDS:** Administrative Boundaries, SALB, Asia and the Pacific, Global Spatial Data Infrastructure (GSDI)

## 1. INTRODUCTION

The Second Administrative Level Boundaries data set project, SALB, was launched in 2001 under the umbrella of the United Nations Geographic Information Working Group (UNGIWG) with the objective to provide the international community with a working platform for the collection, management, analysis, visualization and sharing of sub-national data down to the 2<sup>nd</sup> sub-national level.

Working in close collaboration with the National Mapping Agency (NMA) of each United Nations Member State, the SALB project aims at providing the

users with the following country validated data and information:

- 1) Updated contact information of the NMA
- 2) Coded historic changes starting from 1990 for the 1<sup>st</sup> sub-national level and from 2000 for the 2<sup>nd</sup> sub-national level
- 3) Digital map, in a GIS format, presenting the delimitation of the 2<sup>nd</sup> sub-national level administrative boundaries for each period of representativity observed since January 2000

This data and information are collected thanks to the collaborative process established with the NMAs and a consortium of UN and non-UN institutions forming the SALB network. More information about the SALB

process and institutions forming the SALB network can be found on the SALB website, <http://www.unsalb.org/>.

With the intension to contribute to the content of the Global Spatial Data Infrastructure (GSDI), SALB is also collaborating with/contributing to the activities of several regional and global initiatives and entities such as:

- the International Steering Committee for Global Mapping (ISCGM)
- the Permanent Committee on Spatial Data Infrastructure for the Americas (PC-IDEA)
- the Pan American Institute of Geography and History (PAIGH)
- the Permanent Committee on GIS Infrastructure for Asia & the Pacific (PCGIAP)
- the Committee on Development Information, Science and Technology (CODIST)
- the Global Spatial Data Infrastructure (GSDI)

During the 8<sup>th</sup> South East Asia Survey Congress which took place in Bandar Seri Begawan, Brunei Darussalam in November 2005, SALB reported that Asia and the Pacific was unfortunately the region for which the biggest gap had been observed in terms of the last two products mentioned above (at time the NMA contact information database was not in place).

For example, Figure 1 shows the state of progress at that time for each region regarding the list of administrative units and maps for January 2000.

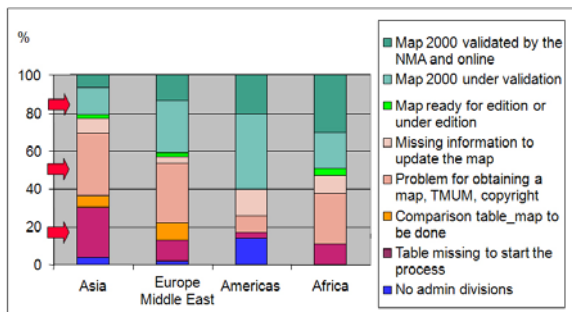


Figure 1. 2005 State of progress for the different regions considered in SALB regarding the January 2000 list of administrative units and maps

As we can see on Figure 1, in Asia a lot of tables were missing to start the process; there was an important problem to obtain maps that could be used and an important number of those which had been edited were still under validation.

The main reason for this situation have been presented during the 17<sup>th</sup> United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) which took place in Bangkok (18-22 September 2006) (Ebener & Guigoz, 2006)

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 and Russia)
5. Representation of disputed areas and borders

This list is at the origin of the different actions which have been taken in order to change the situation presented in Figure 1. These actions are summarized in the coming section.

## 2. ACTIONS TAKEN SINCE THE 8<sup>TH</sup> SEASC

A set of actions have been taken in order to bridge the gap reported at the 8<sup>th</sup> SEASCs and overcome the challenges identified the year after. These actions are presented in the coming sections.

### 2.1 Redistribution of the SALB Regions

At the time of the 8<sup>th</sup> SEASC, the SALB region for Asia included 47 UN Member States, some of them being among the most populated countries in the world (China, India, Indonesia and Russia).

In addition to that, the presence of different languages in the region was making it difficult to have one single institution located outside the region to contact all of them.

It has, therefore, been decided to redefine the distribution of the 193 UN Member States into 5 regions instead of 4 and to move some of the countries to other regions as follows:

- Afghanistan, Iran (Islamic Republic of) and Pakistan have been re-assigned to the Middle-East node
- Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan have been assigned to a European node recently established at the World Health Organization (WHO)

To solve the language issue, a Russian speaking consultant has recently been hired to collaborate with the European node to contact all the Russian speaking countries.

Since this amendment, the SALB region for Asia and the Pacific consists of 36 UN Member States: Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Fiji, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Maldives, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Nauru, Nepal, New Zealand, Palau, Papua New Guinea, Philippines, Republic of

Korea, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu and Viet Nam.

The changes have made it much easier for the different nodes to handle the countries they are in charge of.

## 2.2 Establishment of a technical node for Asian and the Pacific countries

The analysis conducted for the 8<sup>th</sup> SEASC (as detailed in Section 1) clearly indicated the need to establish a technical node in Asia.

Nevertheless, a meeting with different stakeholders based in Bangkok (FAO, OCHA, UNDP, UNEP, UNESCAP, UNICEF, WFP and the Wildlife Conservation Society) which took place in November 2005 confirmed the difficulty of establishing such type of a node without any external financial support.

Thanks to the funds received from USAID the year after that, and the support of UNESCAP, it has finally been possible to establish a node in 2007 at the Geoinformatics Center (GIC) of the Asian Institute of Technology (AIT).

AIT was established in 1959 in Bangkok. It promotes technological change and sustainable development in the Asia Pacific region through higher education, research and outreach.

GIC was itself established as a non-profit entity for imparting training, research and project services in geoinformatics technologies such as Geographical Information System (GIS), Remote Sensing and Global Positioning System (GPS). The Center has carried out a larger number of training courses, drawing more than 1,000 participants from more than 25 countries to train them in geo-spatial information systems and technologies, application of information technologies in disaster management, environment management, project management, natural resource management, poverty mapping, etc.

For more information about AIT and GIC please visit <http://www.ait.ac.th/> and <http://www.geoinfo.ait.ac.th/> respectively.

## 2.3 Attending meetings

The most effective way of making progress is, meeting representatives from NMAs in person.

Since the 8<sup>th</sup> SEASC, SALB project has, therefore, been present at 7 major regional or international events attended by NMAs from Asia and the Pacific region.

This, as well as the regional activities conducted by GIC, has provided good opportunities to meet with the representatives of more than 20 countries in the region.

## 2.4 Launch of the new SALB portal

The new SALB portal ([www.unsalb.org](http://www.unsalb.org)) has been launched at the end of June 2009 to replace the old website which was alive since 2001.

In addition to the data and information that users were able to already access in the past, the new portal does now also serve as the management platform for the project.

All the information and data collected through the SALB project can be freely accessed from the portal and used pending the respect of SALB data policy. This is the reason why it is necessary to register before being able to access the historic changes tables and GIS format maps.

Registering to the site also allows being part of the SALB mailing list to receive the SALB newsletter which is distributed every 3 months.

The look of the portal has also been completely revisited (Figure 2) in order to make it much more user friendly.

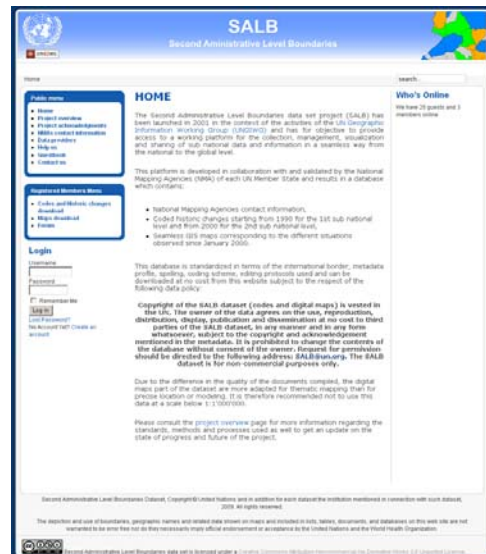


Figure 2. Home page of the new SALB portal

This portal has been developed using php/MySQL technology making it dynamic compared to the old website.

At the same time, most of the information appearing on the portal as well as all the data and the information necessary for the management of the project are now stored in a unique MySQL database.

For example, these two improvements:

- simplify the work of the different nodes and the coordination team
- allow a much more rapid update of the data and information accessible to the users

- give access to new functionalities such as on-the-fly tables containing the number of administrative divisions observed in a country for a given year

## 2.5 Strengthening Collaboration

The connection between the SALB project and the activities of the Permanent Committee on GIS Infrastructure for Asia & the Pacific (PCGIAP) was established in 2002 during the 8<sup>th</sup> PCGIAP meeting where the following resolution was endorsed:

“13. Support for development of the Second Administrative Level Boundaries dataset

The PCGIAP,

Recognizing the efforts of the United Nations Geographic Information Working Group (UNGIWG) towards creating United Nations Geographic Database and developing a Second Administrative Level Boundaries (SALB) dataset as part of the Database,

Recalling the resolution 8 adopted by the 15th United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) that welcomes the synergetic support of UNGIWG for coordinating its efforts with relevant activities of the UNRCC-AP for mutual and complementary benefit,

Recommends that PCGIAP to encourage the National Mapping Agencies in Asia and the Pacific region to cooperate with the UNGIWG on the development and maintenance of the SALB dataset and in this regard to enter a cooperative relationship with the Map Collection of the Dag Hammarskjold Library, United Nations, on the issues of validations of the data and the submission to the UN of the latest administrative boundary information.”

Since then, SALB has actively contributed to the activities of PCGIAP fundamental data set working group for the creation of a seamless fundamental dataset for Asia and the Pacific (Purnawan et al, 2006).

Collaboration has also been strengthened with the International Steering Committee for Global Mapping (ISCGM) with whom it has recently been agreed that:

1. the collaboration between ISCGM and SALB should continue and be strengthened,
2. efforts should be made in order to try making SALB and Global Map specification as close as possible. In this regards, SALB is invited to be part of the discussion for Global Map version 2 specifications.

Last but not least, as the maps resulting from the application of the SALB process represent a source of validated information, Google is interested in including them (Google Maps, Google Earth, and Google Maps for Mobile).

As this would represent a commercial use of the data set, use which is not authorized by the actual SALB data policy, collaboration between Google and the UNGIWG Secretariat has been established in order to facilitate the discussion with the owners of the original maps regarding this use.

## 3. CURRENT STATE OF PROGRESS FOR ASIA AND THE PACIFIC

This section presents the current state of progress regarding the 3 products delivered by SALB for the 36 countries managed by AIT. The maps presented in this section are regularly updated and can be downloaded from the project overview page on the SALB portal.

### 3.1 NMA Contact Information

Since 2005, the SALB project has been providing users with a NMA contact information database which is updated as often as possible. Figures 3 and 4 present the current distribution of the 36 countries part of the Asia and the Pacific region according to the last year of update for this information.

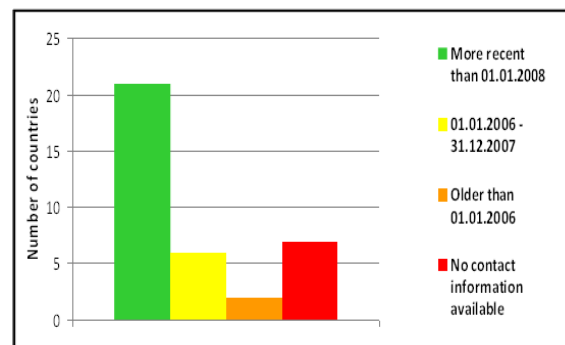


Figure 3. Last update of the NMA contact information for the countries part of the Asia and the Pacific Region

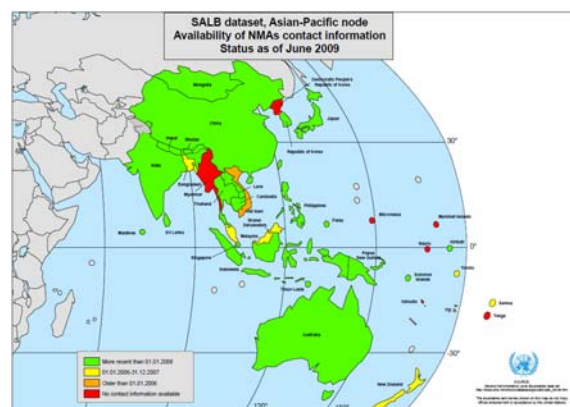


Figure 4. Spatial distribution of the last update of the NMA contact information for the countries part of the Asia and the Pacific Region

As we can see on these figures, the NMA contact information is up-to-date for more than half of the countries covered by AIT.

There are few countries for which the NMA contact information is still missing: the Democratic People's Republic of Korea, Marshall Island, Micronesia (Federated States of), Myanmar, Nauru, Tonga and Tuvalu.

### 3.2 Historic Changes Tables

The SALB database provides users with validated excel files presenting the evolution of the administrative structure of the UN Member States.

Figures 5 and 6 show the current distribution of the 36 countries part of the Asia and the Pacific region according to the most recent year contained in the SALB historic changes database.

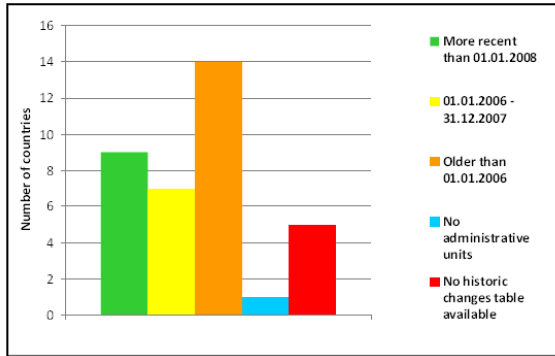


Figure 5. Distribution of the most recent year contained in the SALB historic changes database for the countries part of the Asia and the Pacific region

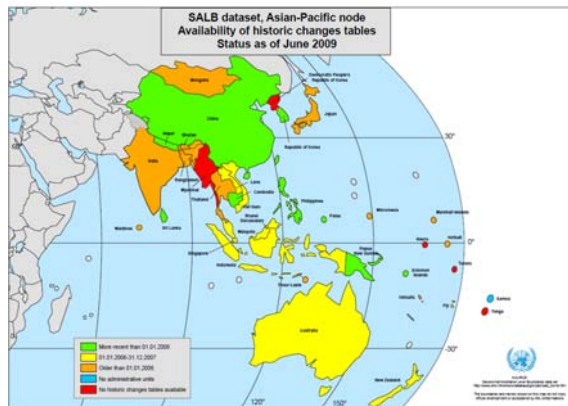


Figure 6. Spatial distribution of the most recent year contained in the SALB historic changes database for the countries part of the Asia and the Pacific region

As we can see on these figures, more the historic changes for more than half of the countries in the Asia and the Pacific region needs to be updated and, as of July 2009, we are still missing historic changes information for 5 countries: the Democratic People's

Republic of Korea, Myanmar, Nauru, Tonga and Tuvalu.

### 3.3 GIS Format Maps

The SALB project provide users with validated GIS format maps depicting the delimitation of the administrative division observed in all the UN Member States. Like for the historic changes database, the objective is to provide a map for each period of representativity observed in these countries since January 2000.

Figures 7 and 8 show the current distribution of the 36 countries according to the most recent year contained in the SALB map database.

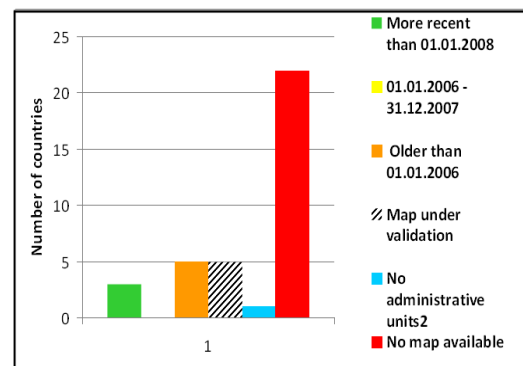


Figure 7. Distribution of the most recent GIS format maps in the SALB database



Figure 8. Spatial distribution of the most recent GIS format maps in the SALB database

As we can see on these figures, the availability of validated maps is very low in the region.

Two main reasons are at the origin of this situation:

- The need to improve the coastline and international boundary layer used in the context of the SALB project before being able to start the editing process
- The lack of maps which could be used in the context of the SALB project (map not up-to-date, sensitivities,...)

#### 4. CONCLUSION

Thanks to the action taken since the 8<sup>th</sup> SEASC, the Asia and the Pacific region has been able to catch up with the other SALB regions when it comes to the NMA contact information and the historic changes (Figure 9 a) and b)). The gap, nevertheless, remains very important regarding the availability of GIS format maps for this region.

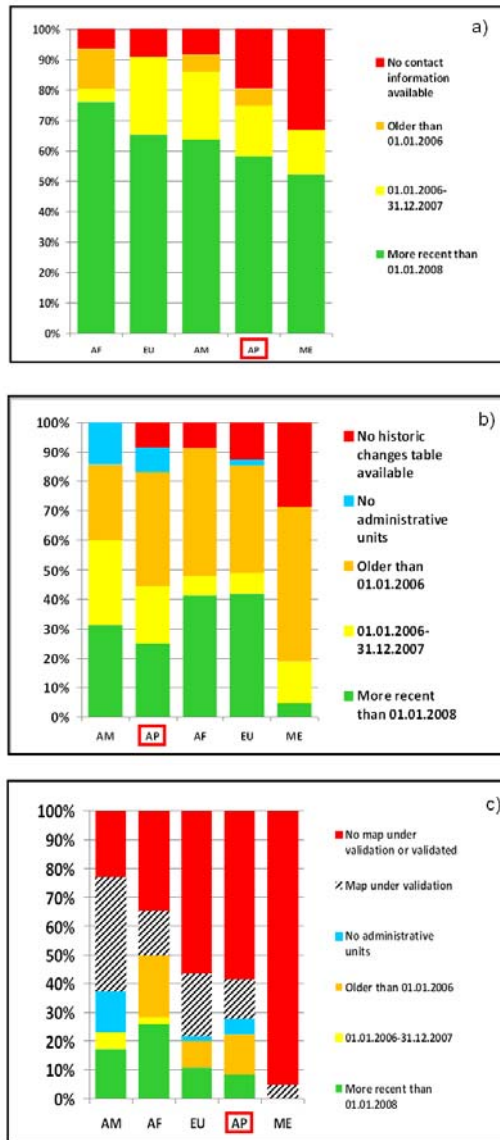


Figure 9 - Current states of progress for the 5 SALB regions when it comes to a) the NMA contact information; b) Historic changes and c) GIS format maps with: AM = Americas; AF = Africa; EU = Europe; AP = Asian and the Pacific; ME= Middle East

Additional efforts have therefore first to be made on the side of the SALB project to improve the international border and coastline template, in close collaboration with the UN Cartographic Section in New-York, to allow for a larger number of maps to be ready for validation.

There is then a need for the NMAs to further engage in the process. SALB, through its node at AIT and in close collaboration with PCGIAP, ICGM and other partners, will therefore continue the discussion with the NMA hoping to see their contribution to the database increase in the coming months.

These additional efforts are necessary if we expect to be in a position to monitor and respond to the challenges ahead of us.

#### ACKNOWLEDGMENTS

The authors would like to first thank all the National Mapping Agencies who are collaborating with the SALB project and have made their data and information available to the users.

They also would like to express their gratitude to all the institutions which support the ALB project either financially or technically.

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