

# Article: National Geographic Department

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## *A glimpse of the organization and its activities in brief*

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### **1. Introduction**

Lao People's Democratic Republic or Laos is one of the fastest growing economies in the Asia Pacific Region with a GNI per capita of USD 1,600.00 in 2014. GDP growth averaged 7 percent over the last decade, with the increasing use of the country's natural resources – mostly water, minerals and forests – contributing one third to the growth (THEWORLDBANK 2016).

Laos is a landlocked nation that covers 236,800km<sup>2</sup> in the center of South East Asia. It is surrounded by Myanmar (235 km), Cambodia (541 km), China (423 km), Thailand (1,754 km), and Viet Nam (2,130 km) (Savada 1994). The topography of Laos is largely mountainous with elevation above 500 meters typically characterized by steep terrain, narrow river valleys, and low agricultural potential. This mountainous landscape extends across most of the north of the country, except the plain of Vientiane and the Plain of Jars in Xiengkhouang Province.

### **2. History of the National Geographic Department**

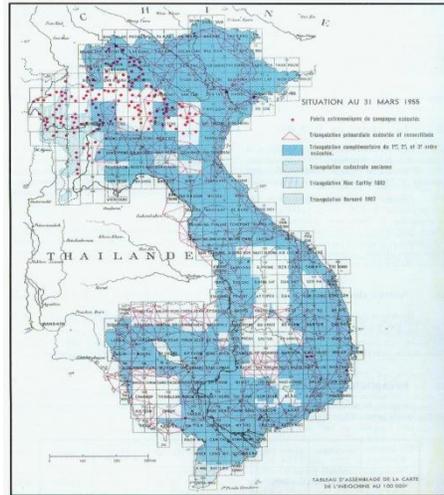
The mapping productions and aerial photography works in Laos have been divided into 4 different phases, namely:

#### **1. Phase 1: Prior to 1955**

- During the French Colony in the IX Century, the "Indochina Geographic Mapping Agency" was founded by France on the date of 01-Jul-1899 having a headquarters in Hanoi.

- During the World War II (1939-1945), the Mapping Agency was moved to the city of Dalat, Lam Dong Province.

- On the date of 01-Apr-1955, the Royal Lao Mapping Organization was founded in 01.-Apr-1955 in Vientiane having French engineers named: Monsieur. Jolly and Monsieur. Bourot directed a "TOPO" Division. During this time, there were no Lao engineers.



### Indochina National Geodetics Network prior to 1955 - Adapted from, (Sallat 2000)

#### 2. Phase 2: From 1955-1975

- October 1956, there were 5 Lao engineers graduated from Phnom Penh, Cambodia (2 surveyors and 2 cartographers). Their main works of the TOPO Division include: providing mapping services allocated by Indochina Geographic Mapping Agency such as: (coordinated and elevation points during 1902-1939, the French has created Leveling I, II, III and IV; whereas in Laos there was Leveling I with 47 points in total with unsystematic density of the coordinate points). Leveling I, II, III were measured along the rivers by direct measurement; Whereas in the plateau area, the elevation points were measured indirectly.

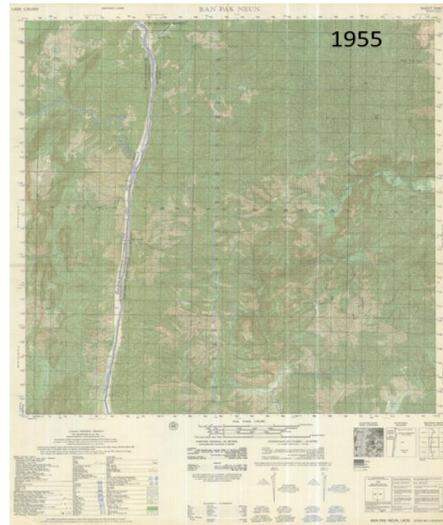
- In terms of the aerial photography, in 1954, the French conducted aerial photography work along Laos-Viet Nam-China borders having the scale of 1 : 45 000, 12X18CM dimensions.

- In May 1959, the Royal Laos Government had changed to TOPO Division to be the 'National Geographic Department' that comprised of cartography, printing, and survey divisions. The department is headed by French graduated Mr. Chansamone VORAVONG as the first Director General. Whereas most engineers were trained domestically and some were graduated from France, Cambodia, and Thailand. Main works during this period include working alongside the Americans in the survey, aerial photography, and map making

Sample aerial photography covering the whole country and maps created by the US Army used in Indochina War having the scales of 1:50,000; 1:250,000 covering Indochina region.



**Aerial Photography covering the whole country**



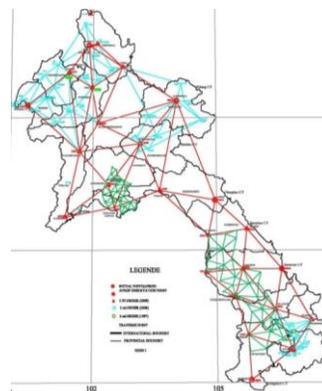
**Scale 1:50,000 Topographic Map**

### 3. Phase 3: From 1975-1995

- Lao People's Democratic Republic (Lao PDR) was established on 02 December 1975
- After then, the Party and the Government had emphasized on the training of survey and mapping engineers. In 1990, there were 46 graduated engineers at the undergraduate, postgraduate, and doctorate levels from various Socialist countries.
- The former Soviet Union (USSR) assisted the making of topographic map having the scales of 1:1,000,000; 1:500,000; 1:200,000; 1:100,000 and aerial photographic maps having the scale of 1:60,000 and scale 1:30,000 covering the whole country.
- In addition, the topographic maps with the scale of 1:10,000 covering Xaybangfai Plateau, Khammuan Province and 1:25,000 topographic maps covering Lek 9 Road, Savannakhet Province were produced during this period.



**Scale 1:100,000 Topographic Map**



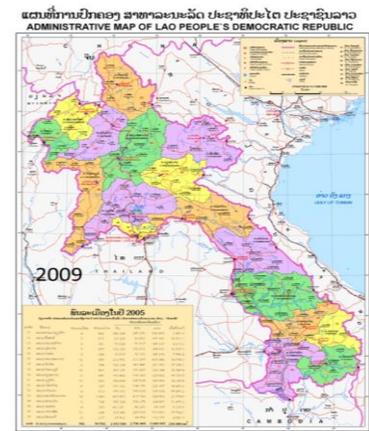
**National**

## **Geodetic Network**

### **4. Phase 4: From 1995 to Now**

- On 19-Aug-2011, the Ministry of Home Affairs was founded in accordance with the Decree Number. 253/PM, dated: 19-Aug-2011 in which the National Geographic Department falls under the Ministry. The Department was headed by Dr. Thongchan MANIXAY as the Director General.
- After its inauguration under the Ministry of Home Affairs, the National Geographic Department is chaired by Mr. Bouasoth SOUVANNAKUMMANE who is the current Director General. The department is comprised of 70 personnel who are being responsible for the administration, surveying, aerial photography, and map making of the whole country.
- There are 8 divisions in the department, namely: the Administration; Planning- Finance and Cooperation; Technical Equipment and Data Supply Management; Science-technology; Photogrammetry; Cartography; Survey; and National Borders/Joining Zone.

### **Topographic map (Scale 1/10,000)**



### **Administrative Maps of Indochina and Laos**

## **3. Legislation**

- The current Decree on Surveying, Aerial Photography, and Mapping, Number: 330/GOL has been enacted on the date of: 19-September-2014.

## **4. Our products and services**

### **4.1 Geo Portal**

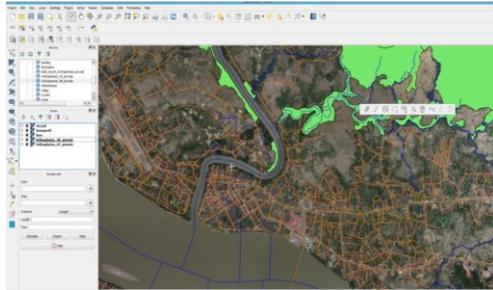
- GeoPortal is available to the public with water marks.
- Professional users can request an access to private GeoPortal services without water marks.

## 4.2 Aerial Photography

The orthophoto is an aerial photo, taken from an aircraft or satellite, geometrically corrected (“orthorectified”) such that the scale is uniform. An orthophoto can be used to measure true distance because it is an accurate representation’s of earth’s surface. It can correctly determine locations, width, length, and area on real surface. Digital orthophotos are currently used worldwide.

Orthophotos are created in two modes: RGB (red, green, and blue) and IR (infrared). Images can be zoomed into clear accuracy up to 0.5meters above the surface. Coordinate systems are based on two standards, the world coordinate system **WGS84** and the local system, **Lao 1997**.

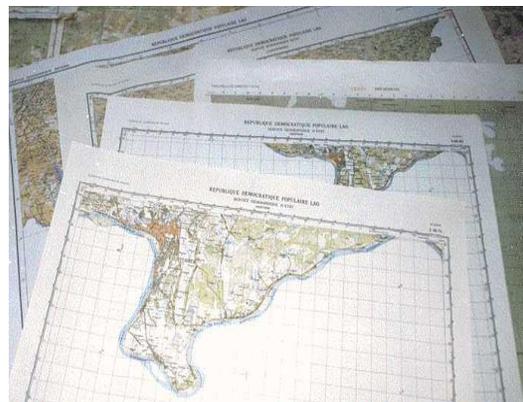
Orthophotos are scientifically important and necessary for users of all sectors. Using digital orthophotos can help saving resources from fieldwork, especially in remote locations that are difficult to reach. Customers can order aerial photographs of predefined area or make a request for a customized aerial photograph for an area of your choosing by contacting NGD.



***GeoPortal Interface on NGD website***

## 4.3 Topographic maps

Topographic maps having the scale of 1:50,000 were used as base maps covering the whole country. Apart from that, various purpose maps were produced namely: administration, tourism, social-economics, world maps, atlases and among others.



***Examples of topographic maps in various scales***

## 5. About us and Contact

National Geographic Department (NGD) is the surveying, aerial photography and mapping authority of Lao PDR under the supervision of the Ministry of Home Affairs and has the authority to conduct research and establish policies regarding the surveying, aerial photography, mapping for submission to the government for consideration, approval, and official promulgation.

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***NGD's location in Vientiane***

### References:

Sallat, R. (2000). De L'Empire Colonial Aux Agences De L'I.G.N: 1940-1973. Paris, France, Institut Geographic National.

Savada, A. M. (1994). Laos: A Country Study. Washington DC, Washington: GPO for the Library of Congress.

THEWORLD BANK (2016). "Lao PDR Overview." Retrieved 20.05.2016, 2016, from <http://www.worldbank.org/en/country/lao/overview>.