



MINISTRY FOR FOREIGN
AFFAIRS OF FINLAND

STRENGTHENING NATIONAL GEOGRAPHIC SERVICES IN LAO PDR (SNGS)

**QUARTERLY PROGRESS REPORT 4/2011
OCTOBER - DECEMBER 2011**

January 2012



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ABBREVIATIONS AND ACRONYMS

APRGP	Asia Pacific Regional Geodetic Project
AT	Aerial Triangulation
CAD	Computer Aided Design
CIR	Colour Infrared
CTA	Chief Technical Advisor
DEM	Digital Elevation Model
DGPS	Differential GPS (see GPS)
DSM	Digital Surface Model
DTM	Digital Terrain Model
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (former GTZ)
GOF	Government of Finland
GPS	Global Positioning System
GSD	Ground Sample Distance (=ground resolution)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH German Agency for Technical Cooperation)
IMU	Inertial Measurement Unit
JICA	Japan International Cooperation Agency
LAN	Local Area Network
MFA	Ministry for Foreign Affairs
MRC	Mekong River Commission
NAFES	National Agriculture and Forestry Extension Service
NAFRI	National Agriculture and Forestry Research Institution
NGD	National Geographic Department
NGO	Non-governmental Organisation
NIR	Near Infrared
NLMA	National Land Management Authority
NLS	National Land Survey of Finland
NSDI	National Spatial Data Infrastructure
PDR	People's Democratic Republic
QC	Quality Control
RAID	Redundant Array of Independent Disks
REDD	Reducing Emissions from Deforestation and Forest Degradation
RGB	Red Green Blue (=true colour)
SC	Steering Committee
SMC	Surveying and Mapping Centre
SNGS	Strengthening National Geographic Services (in Lao PDR)
SPA	Strategic Planning Advisor
SUFORD	Sustainable Forestry and Rural Development
TA	Technical Advisory
TB	Terabyte (=1000 Gigabytes)
ToR	Terms of Reference
UPS	Uninterruptible Power Supply
UTM	Universal Transverse Mercator
WGS	World Geodetic System
WREA	Water Resources and Environment Administration

SUMMARY

This is the last quarterly report of 2011 and the Annual Report 2011 is being prepared concurrently. Therefore this 4th quarterly report is purposefully kept rather brief. The TA presence and participation in SNGS programme was strongest ever during the fourth quarter of 2011. Altogether three new advisors also started in the programme during the reporting period, or more precisely four, as the Cartographic Advisor Mr Jürgen Stadel officially joined SNGS TA team in the beginning of November after his GIZ contract came to its end. Highlights of the reporting period can be listed shortly as follows.

- A big delegation from NGD/SNGS made a one week study tour to Ho Chi Minh City in the beginning of November
- First GIS Committee meeting hosted by NGD was organized in December
- Legal Advisor completed his first mission in the programme
- Aerial Photography Advisor started his mission in October and small format camera system procurement was started
- Stereo Restitution Advisor started his mission in October and 3D DEM editing was started
- 2D digitizing for topographic mapping was started

In general, progress within the fourth quarter of 2011 was much as planned and there were not any major problems in the programme during October - December 2011.

1. Advisors

During the fourth quarter of 2011 the TA input for the programme was extraordinarily strong. TA team members were present in SNGS as follows:

- Mr Kari Suominen, CTA present until December 19th
- Mr Sami Jänne, GIS Advisor present all the time
- Mr Roland Saftenberger, Regional Survey and Field Completion Advisor present about two weeks in October and November
- Ms Phouvieng Sythalavong, Local Stakeholder Coordination, Client Relations and Marketing Advisor present all the time
- Mr Singthong Linsavath, Local Field Survey Advisor present all the time
- Mr Lauri Pynnönen, Associate ICT Advisor present all the time
- Ms Phonepaseuth Phandala, Secretary and Accountant present until 30th November
- Ms Vilayphone Phandala, Secretary and Accountant present from 1st December
- Mr Jyrki Anttonen, Photogrammetric Advisor present until 9th November
- Dr Jukka Pekka Tolvanen, Legal Advisor until end of October
- Mr Jürgen Stadel, Cartographic Advisor present from 1st November onwards
- Mr Jussi Yrjölä, Strategic Planning Advisor
- Mr Matti Arponen, Marketing, Media and Public Awareness Advisor present from 15th October to 14th November

- Mr Kari Lindfors, Aerial Photography Advisor present from 24th October onwards (six months mission planned)
- Mr Sami Koivula, Stereo Restitution Advisor present from 24th October onwards (six months mission planned)
- Mr Olli Saikko, Associate WEBGIS Advisor present from 21st November

Below is a table showing the exact number of advisory days worked within the reporting period for the programme, for each advisor separately and also including the cumulative figures from the start of the programme.

Advisor	Name	Fourth Quarter 2011			Cumulative from the beginning of the programme			
		October	November	December	Total days	Months worked	Total Months	Remaining months
CTA	Kari Suominen	20	22	11	317	15.095	42	26.905
Home office coord	Leena-Maija Järvinen	21	21	21	357	17.000	48	31.000
Secretary	Phonepaseuth Phandala	20	22	21	362	17.238	40	22.762
GIS advisor	Sami Jänne	20	22	21	321	15.286	34	18.714
Regional Survey	Roland Saftenberger	7	4	0	170	8.095	20	11.905
Local Survey	Singthong Linsavath	20	23	21	304	14.476	34	19.524
Local Marketing	Phouvieng Sythalavong	20	22	21	326	15.524	34	18.476
Photogrammetric	Jyrki Anttonen	15	7	0	126	6.000	20	14.000
Strategic Planner	Jussi Yrjölä	0	22	15	56	2.667	8	5.333
Marketing	Matti Arponen	11	10	0	62	2.952	8	5.048
Cartography	Jürgen Stadel	0	22	20	42	2.000	20	18.000
Aerial Photography	Kari Lindfors	6	22	13	41	1.952	8	6.048
Regional Offset		0	0	0	0	0.000	6	6.000
Stereo Restitution	Sami Koivula	6	22	21	49	2.333	8	5.667
Legal Advisor	Jukka-Pekka Tolvanen	21	0	0	42	2.000	4	2.000
JTA GISWEB	Olli Saikko	0	8	21	29	1.381	20	18.619
JTA ICT	Lauri Pynnönen	20	22	21	177	8.429	20	11.571

2. Procurements

Almost all of the procurements included in the project document and programme budget were done already within the first year of the programme and only very few procurements are still pending. Below is a summary of the procurements done in the programme within the fourth quarter of 2011.

1. Fileserver and local area network

Fileserver and all hardware components related to it were ordered and installed within the second and third quarter. However, during the last three months of 2011 some more additional peripheral components were procured in order to make the entire installation complete and fully operational. These procurement items are:

Date	Item	Supplier	Units	Price (USD)	Total (USD)
8.11.2011	LevelOne 5-port Gigabit Ethernet Switch	DataCom	4	45.00	180.00
8.11.2011	Dell PowerConnect 2848 - 48 port Gigabit Ethernet Switch	Datacom	1	735.00	735.00
9.12.2011	LevelOne 5-port Gigabit Ethernet Switch	DataCom	2	50.00	100.00

2. CAD Software

CAD software, either AutoCAD or MicroStation is an essential part of the digital stereo workstations purchased. Additionally in the budget is a reservation for one more CAD software licence. In NGD, there is wide knowledge and experience of using AutoCAD and no experience of MicroStation. Therefore it was clear that the CAD software to be purchased shall be AutoCAD Map. The reservation for this procurement in the budget is 3 x 6,000 EUR.

A request for quotation for three licences of AutoCAD Map 3D 2012 software was sent to one Lao company (Micro-Info), one Thai company (CCM Systems Co.,Ltd) and one Finnish company (CAD-Q Finland Oy). Quotations from Laos and Thailand included options for standalone and network licences, while quotation from Finland only included single workstation licence. The quotation from CCM Systems Co.,Ltd was overwhelmingly cheapest for exactly same product and therefore the selection of supplier was self-evident. After discussions with NGD personnel and TA team, it was clear that we must select the network version for the licence to be procured as it makes the usage of the software much more flexible and efficient. Below are the details of the procurement.

<u>Description</u>	<u>Quantity</u>	<u>Unit price</u>	<u>Total price</u>
AutoCAD Map 3D 2012 network	3	6690	20070
Total		USD	20,070.00

3. Small Format Aerial Camera System

Provision of possibility to conduct urgent smallish aerial photographs whenever needed with local plane and personnel will be an important part of operations of NGD and will increase its capability to provide up-to-date data to its clients. This procurement is described in details in the programme budget.

As there are only few manufacturers of affordable digital aerial imaging and processing systems, the possible providers were selected after an internet study that provided five possible candidates, namely Visual Intelligence, USA; DiMac sprl, Belgium; Microsoft/Vixel Imaging Gmph, Austria; MosaicMill, Finland and GeoVantage inc. USA. Only 2 proposals (MosaicMill and Visual Intelligence) were received. In addition GeoVantage informed that they are not selling the equipment, but could lease it with their supportive staff. This was not according to tender request and had to be disqualified. Both accepted proposals fulfilled the technical specifications, but the price of Visual Intelligence was 5 times higher compared to MosaicMill and was far out of the budget frame as well.

The proposal of MosaicMill was the cheapest and almost within frame of the budget, just marginally over (50,000 EUR in budget). As it also fulfilled the technical specification, it was approved. Below are the details of the procurement.

Description	Quantit y	Unit price	Total price
Digital Camera Nikon 3DX with accessories	1	7790	7790
Camera triggering hardware	1	22245	22245
Imaging software (NavCam)	1	6500	6500
Image processing software, option, limited to 50sq-km	1	15000	15000
Shipping	1	700	700
Total		Euro	52235

3. Programme management and administration

Director General of NGD, Dr Thongchanh Manixay was nominated in October as a Vice Minister in Ministry of Interior. In November Mr Bouasoth Souvannakoumane, project manager of SNGS and Deputy Director in NGD was nominated as Director General of NGD. Another Deputy Director of NGD, Dr Kongkham Sourigna was nominated as Director of newly established Surveying and Mapping Centre, SMC. In spite of his nomination as Vice Minister, Dr Manixay will continue as Chairman of SNGS Steering Committee.

Ms Helena Ahola, Counsellor and member of SNGS Steering Committee finished her assignment in the Embassy of Finland in Bangkok at the end of December. Her successor is Mr Antti Inkinen who also will replace Ms Ahola as a representative of GOF in SNGS Steering Committee.

Within the reporting period the same standard with project meetings was followed so that they are called up whenever seen needed, with approximate frequency of once or twice per months.

4. Progress and activities by components

The programme *Strengthening National Geographic Services in Lao PDR* is divided into three main components and several sub-components. The activities and progress gained during the reporting period is briefly described below by components and sub-components.

4.1. Component 1 Service policy development in the National Geography Department

4.1.1. Sub-component 1.1 Long term strategy and mid-term development plan of the National Geographic Department

Strategic Planning Advisor made a mission to Lao PDR in November and December 2011. Purpose of the mission was to collect information on status of the existing maps over entire Laos and to get an opinion on future mapping policy for NGD.

Additionally SPA collected data on personnel and budget history of NGD to be able to initiate planning of the future operations of NGD. The main finding during the mission is that both rural and urban area maps are out of date over the entire country. Mapping southern third of Lao PDR is not adequate to guarantee that Laos has up-to-date geographic information. Mapping of the remaining part of the country is needed.

An important event in data sharing took place on 8 November 2011. NGD sold digital map data, roads etc. of previous international mapping projects, Mekong GIS (financed by JICA) and Vientiane Plain Topographic Mapping project (financed by the Government of Finland) to Navteq Corporation. We can estimate that digital road maps of Laos can soon be downloaded into Nokia and other smart mobile phones and many GPS-navigators. Existence of such data will surely generate a lot of business activities in Laos when visitors can find shops, hotels and restaurants more easily.

Legal Advisor Dr Tolvanen finished his first mission to the programme in the end of October. His first mission and the mission report is mainly related to the major organizational change which was announced in August 2011, and its direct and indirect effects on functioning of the NGD. These newly implemented organizational changes surely have a big influence on the new Strategic Plan to be written for NGD and newly established SMC.

Legal Advisor's full mission report and first draft for the new decree on surveying, aerial photography and mapping activities in the territory of Lao PDR are annexed to this quarterly report.

4.1.2. Sub-component 1.2 Locating clients and providing them with access to geographic data in Lao PDR

International Marketing and Media Advisor had his second mission to the programme in mid-October to mid-November. His second mission was dealing mainly with the following topics.

- User survey and questionnaire
- Pricing proposal (edited proposal with cooperative financing initiative)
- NGD Data Copyright Permit Form
- Lao GIS Coordination Committee (preparing proposal for evoking the old (2004) committee and some ideas for the agenda of the committee)
- Lao GIS association (not proceeded)
- Visiting WREA (with TABI project people from NAFRI) and NLMA
- Participating in NGD split preparations
- Discussions on how to proceed to LAO 2010 coordinate system and correcting the EPSG parameters of LAO97
- Connecting NGD to the Fiber Optic Backbone of LAO Government in Vientiane (prepared draft proposal and discussions)

Lao GIS Coordination Committee was founded as early as 2004, but never became active and was practically forgotten during the years passed. Issue of evoking the forgotten GIS committee was raised in the Mapping workshop on 31st March 2011 and the suggestion received wide support among the work shop participants. The first Lao GIS Coordination

Committee meeting was arranged and hosted by NGD on 22 December. Minutes of the meeting are annexed to this report.

4.2. Component 2 Technical capacity building of the National Geography Department

4.2.1. Software and hardware

Almost all the main software and computer hardware items included in the project document and budget are procured, received and installed. Only very few items are still to be procured. Practical hands-on training for newly procured products is continuous.

4.2.2. Training

The in-house training programme continued during the fourth quarter of 2011 very well as planned in annual work plan. Below is a table summarizing the training carried out within SNGS during the fourth quarter of 2011.

STRENGTHENING NATIONAL GEOGRAPHIC SERVICES IN LAO PDR								
Training/Workshop/Seminar/Study tour ledger								
No	Topic(s)	Date(s)	Number of Persons	Female	Type	Days	Trainer/Moderator	Remarks
23	Creation of Grids using PLTS	28-30.9	4	3	C	3	Mr. Sami Janne	Advanced training
24	Geotatabases Part II	6-7&10.10	5	4	C	3	Mr. Juergen Stadel	Basic Training
25	Digitization 2 D	29-30.11.	4	3	C	2	Mr. Juergen Stadel	Basic Training
26	Review training for digitization 2D	14-27.12.	17	11	C	2	Mr. Lauri Pynnönen	Basic Training
27	GIS Committee meeting	22.12.	20	4	WS	2	Mr. Jyrki Anttonen, NGD	Workshop
28	NGD Webpage Design Workshop	27.12.	8	4	WS	20	Mr Lauri Pynnönen	Hands on
29	Field trip for data collecting	15-26. 11.	3	1	F	5	Mr Jussi Yrjölä	Study tour
30	Study tour to HCMC	31.10.-4.11.	11	8	ST	5		Study tour
31	3D DEM editing	November	2	2	H	20	Mr Sami Koivula	Basic Training
32	Aerial triangulation	October	1		H	4	Mr Jyrki Anttonen	Basic Training
Type								
C = Classroom, formal								
H = Hands-on								
WS = Work shop								
S = Seminar								
ST = Study tour								
F = Field								

4.3. Component 3 Aerial photography, survey and production of orthophoto and topographic maps and satellite image and establishing a NSDI

4.3.1. Sub-component 3.1 Densification of geodetic ground control network

For entire component 3, it was essential that densification of the geodetic network for southern third of the country, i.e. for the SNGS mapping area is completed efficiently and in time. The campaign for southern part of the country was completed in early September and it was planned to continue sub-component 3.1 for remaining parts after the rainy season is over. However, the sub-component actually did not continue, except some planning work, until the end of 2011. This is partially due to prolonged rainy season and flooding, but also for some other reasons. Sub-component shall commence again in January when Regional Surveying Advisor returns to the programme.

4.3.2. Sub-component 3.2 Production of digital orthophoto maps and 1:50,000 topographical maps

The sub-component have manual working activities that are new to NGD personnel and software used in these activities is also new and not familiar. These work phases are 3D DEM editing using Inpho DTMaster software and 2D linemap digitizing from orthophotos using GlobalMapper software. Both activities require quite much training. Training 2D digitizing was started very early using some other orthophoto material as training material and the training can now be considered complete. The actual 2D digitizing was started in December.

Training for 3D DEM editing was started in November after Stereo Restitution Advisor had started in programme. The training is mainly hands-on practical training and by the end of the year two of the trainees started to be close in productive level.

Part of the digital orthophotos were produced during the fourth quarter and they all are targeted to be completed within the first quarter of 2012.

4.3.3. Sub-component 3.3 Updating and preparation of selected urban and suburban digital maps at scale 1:5,000

Aerial photography advisor, Mr Kari Lindfors started his mission to the programme in late October and preparations for small format camera system procurement were started without delay. Procurement proposal was approved in early December and a purchase order sent to the selected provider. The camera system should arrive in mid-January and first flight mission, photography of Vientiane Capital is expected to commence by the end of January. Updating of Vientiane plain 1:5,000 digital maps is possible to be started after the planned photography campaign is successfully completed.

Digital 1:5,000 maps of Thakhek, Savannakhet and Pakse can be updated from last season digital photography. Now when the new digital stereoplotters are received, installed and configured, aerial triangulation done and Stereo restitution advisor is present in programme, this activity actually can be started very soon.

4.3.4. Sub-component 3.4 Satellite orthoimage mosaic over Laos

There have not yet been any tangible activities within Sub-component 3.4, only preliminary studies about the coverage of different satellite imagery in possession of different organisations.

4.3.5. Sub-component 3.5 IT/GIS/Computer network and database management established for NSDI

The new fileserver itself was assembled and configured within the third quarter of 2011 and during the fourth quarter further development for the server and network installation was carried out. A Domain Controller that handles all the user accounts and devices within the ngd.internal domain was set up. The controller is connected to a 48-port gigabit switch, which connects to the endpoints by existing cabling. The new computers in Photogrammetry division employ the available network wall sockets with the help of 5-port gigabit switches. The three new computers in the Cartography department share a similar switch. Other devices available through the network include the file server and two HP DesignJet plotters.

The Domain Controller applies group policies over the devices connected to the network. The users are divided in organizational units, and different policies apply to different units. The general assumption is that only administrators are able to install software, modify content in system folders and edit computer settings. Policies installing unit-specific software have been set up, and programs such as LibreOffice, ArcGIS and GlobalMapper install on the selected computers automatically. Network collaboration locations have been shared between organizational units to enable seamless sharing of crucial data, such as completed map sheets and finalized symbols. The system is set ready for distribution of centrally managed antivirus software, after which all the computers can be connected to the internet.

Below is a table describing the present status of entire network installation in NGD.

Action	Status	Comments
Acquire and install file server	Done	
Populate the image data on the server	Done	
Acquire Domain	Done	
Acquire Router / Firewall	In progress	Waiting for comments from Web-designer requirements / need for fiber optics connectivity
Install Active Directory on Domain Controller	Done	
Define rules with Router / Firewall	Planned	
Connect the file server to the Router	Planned	
Connect Cartography + Photogrammetry computers to a switch	Done	
Connect the Switch to the Domain Controller	Done	Cables running around – better cabling required
Connect the Domain Controller to the Router	Planned	
Test and implement Group Policies	Ongoing	
Create Users + Computers on the DC	Done	

5. Financial report

Reimbursable costs for 4th quarter were much smaller than for 3rd quarter but the TA presence in the programme was very extensive during the last 3 months of 2011 and therefore the total costs remained at same level as in previous reporting period. Below is a table showing financial summary for 4th quarter 2011 of the programme including cumulative figures. From the table it can easily be seen that during the first 17 months of the programme, from August 2010 to December 2011, approximately 33 per cent of the total external budget was used. Total endurance of the programme is 48 months, of which the past 17 months represent approximately 35 per cent. Total costs until now are well in line with the project plan, as we must keep in mind that aerial photography and most of the procurements are already included in the expenditure of the first 17 months.

	2010 total	2011 1st 9 months	October	November	December	2011 4th Quarter	Cumulative Total
Consultancy fees in Finland	92,767.59	210,441.99	54,232.60	86,546.75	53,925.38	194,704.73	497,914.31
Reimbursables in Finland	68,614.87	882,982.51	8,137.71	5,193.42	42,358.32	55,689.45	1,007,286.83
Consultancy fees in the field	69,914.42	144,810.57	13,340.96	12,867.30	11,308.00	37,516.26	252,241.25
Reimbursables in the Field	49,736.03	106,516.08	19,925.38	28,461.05	44,962.55	93,348.98	249,601.09
Total	281,032.91	1,344,751.15	95,636.65	133,068.52	152,554.25	381,259.42	2,007,043.48
Balance	5,718,967.09	4,374,215.94	4,278,579.29	4,145,510.77	3,992,956.52	3,992,956.52	3,992,956.52
Control	6,000,000.00						



MINISTRY FOR FOREIGN
AFFAIRS OF FINLAND

STRENGTHENING NATIONAL GEOGRAPHIC SERVICES IN LAO PDR (SNGS)

REPORT OF LEGAL ADVISOR'S FIRST MISSION

October 2011

Dr. Jukka Pekka Tolvanen



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ABBREVIATIONS

GIS	Geographical Information System
GPS	Global Positioning System
NGD	National Geographic Department
NLMA	National Land Management Authority
SMC	Survey and Mapping Center
SNGS	Strengthening National Geographic Services (in Lao PDR)
TA	Technical Advisory

1. INTRODUCTION

1.1 Background

Recruitment of a short term legal advisor was introduced in the Proposal for Revised Short Term Advisory Programme related to the Inception Report. According to the proposal, support of a legal advisor is required to promote NGD's legal status as a leading organization in the geographic services. The proposal which contains total 4 months was later officially approved. For the best possible utilization, the allocated months were later decided to be divided in to two missions. This is a report of the first mission which took place in September-October 2011.

1.2 Terms of Reference

The above-mentioned proposal contains also Terms of Reference and main tasks for the legal advisor's missions. The specified main tasks are the following:

- Review existing laws, decrees and sub-decrees on surveying, aerial photography and mapping activities in Lao PDR;
- Review the valid laws and decrees related to the role of NGD, integrated land use planning, land management and other relevant fields concerning spatial data infrastructure;
- Support NGD in implementing current laws and decrees on Surveying, Aerial Photography and Mapping in Lao PDR;
- Work together with NGD and Marketing, Media and Public Awareness advisor to disseminate current laws and decrees to wider audience;
- To support NGD in drafting any necessary proposals for updating the decree on NGD, on data sharing policy and on protection of copyright to NGD products;
- Assist NGD to implement regulations concerning geospatial data created in Lao PDR and
- To support NGD in implementation of the data standards

Additionally the Terms of Reference refers to legal clarification of the mandate of NGD as the supervisory body for private sector in spatial data services. The advisor is also required to work in close co-operation with NGD and marketing, media etc. advisor to disseminate current laws and decrees to wider audience.

1.3 Developments after Preparation of the Terms of Reference

The major organizational change which was announced in August 2011 has direct effects on functioning of the NGD and also to the issues specified in the Terms of Reference. The NGD was moved from the Prime Minister's Office to the Ministry of Home Affairs. At the beginning of the mission it was also found out that long talked division of the NGD into two organizations is actually meant to happen in the near future. Drafts for regulation on the new organization had just been submitted to the Minister of Home Affairs for approval and signing. These changes dominated the mission. The above-mentioned tasks were re-evaluated and prioritized from this

point of view bearing in mind the main purpose of legal advisor's support: to promote NGD's legal status as a leading organization in the geographic services. As a result, legal analyzes of the organizational changes and their consequences were identified as the main purpose of the first mission. This was considered essential to ensure the functionality of the NDG and the new agency to be established after the organizational changes come into an effect.

In the first meeting with the Director General of NGD it also came out that the NGD is requested to present a proposal for required amendments of the existing Decree No 255/PM (16.8.2005) to the new Minister by the end of June 2012. The Director asked TA to support this. In the meeting it was decided that the legal advisor will review and comment the Decree thoroughly bearing in mind forthcoming restructuration of the NGD. Basing on this review the advisor was to assist the counterparts in preparing a draft for amendments to be proposed. This work is extremely important as the Decree will specify roles and mandates of NGD and the new SMC in the future. In the meeting it was also decided that TA will prepare English translations of the draft Decisions about the new organization. These translations were taken as a base for the work of the mission.

1.4 The Main Topics and Results of the Mission

Taking the preceding into a consideration, the following were specified as the main topics of the legal advisor's first mission:

- 1) Clarify the existing mandate of the NGD by reviewing the relevant legislation and corresponding present activities.
- 2) Evaluate the organizational changes and their effects from legal point of view. This covers both the move from a ministry to another and restructuration of the NGD.
- 3) Analyze needs and possibilities to amend the existing regulation based on the Decree No. 255/PM in order to specify principles and main content of the new regulation to be proposed to the Minister.
- 4) Assist the counterparts in drafting the new regulation.

The main results of these tasks are presented in this report and its appendixes. The results are based on legal analyzes, interviews, and discussions conducted during the mission. Additionally a draft for Decree to replace the existing Decree No 255/PM was prepared at the end of the mission and presented to the counterparts. This draft is based on wide discussions with the counterparts about structure, principles, and main content of the new regulation and it is meant to serve as a base for further discussions and preparation of new regulation needed after the organizational changes. It is still an internal paper and is therefore not attached to this report. Further discussions are needed as some of the principles and details could not be concluded during the mission and therefore still remain partly open. Crucial however is that

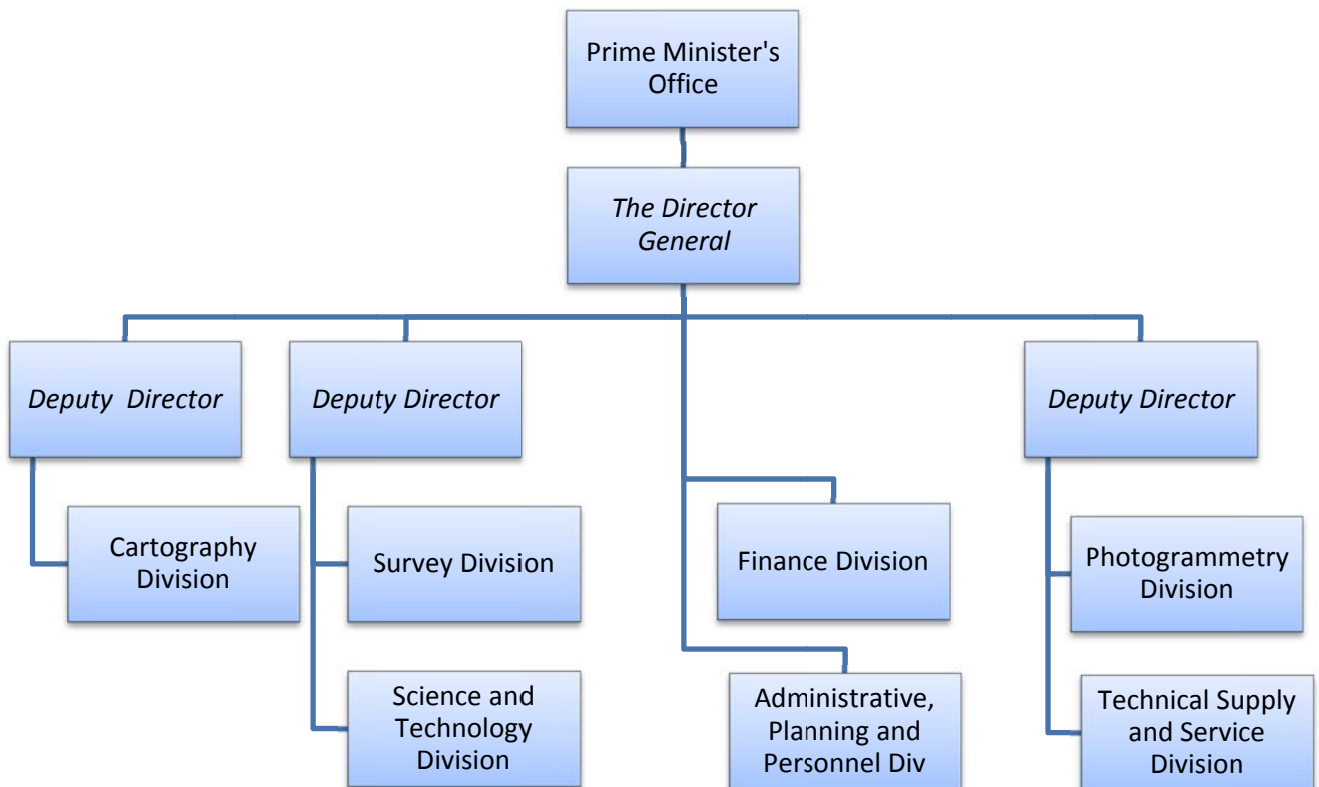
these discussions will be completed and the draft updated basing on the results of the discussions before proposal for new regulation will be submitted for consideration of the Minister of Home Affairs.

2. ORGANIZATION OF THE NGD

2.1 The Existing Organization

The present organization of the NGD is established by Prime Minister's Decree No 136/PM (16.5.2005). The following describes the existing and planned new organizations and evaluates effects of changes from the legal point of view.

According to the Decree No 136/PM, the existing organizational chart of NGD is the following:



2.2 Change of the Ministry

Moving from the Prime Minister's Office to the Ministry of Home Affairs (previous the Ministry of Interior) did not have any direct effect on jurisdiction of the NGD. Decrees regulating functioning of the NGD do not contain any direct references to the Prime Minister's Office. Authority is divided between the NGD and the Government and NGD can submit issues to be approved directly to the Government without involvement of the Prime Minister's Office.

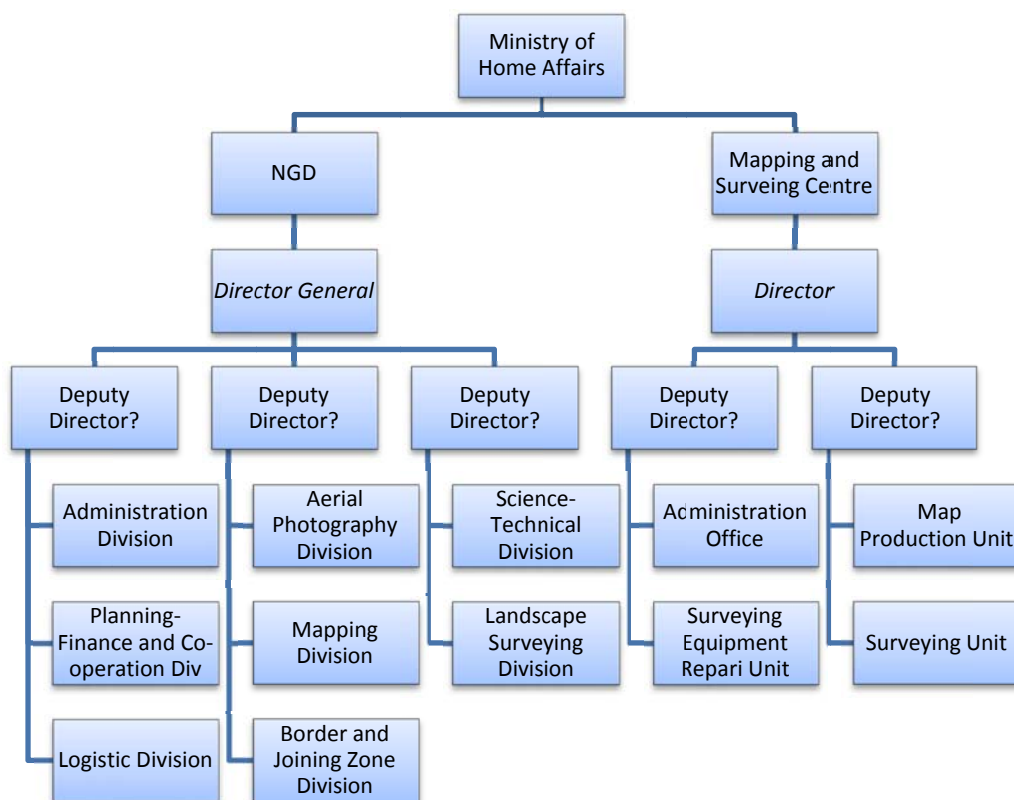
Therefore it seems that the NGD can at least temporarily continue its activities basing on the existing regulation.

The present Decrees however have been approved by the Prime Minister and can be at least partly understood as an internal administrative regulation as they are not directly approved under any specific provisions of any substantive law. Therefore it is in any case appropriate to get them confirmed or replaced by new Decrees approved by the Minister of Home Affairs. As already explained, the new Minister has requested the NGD to make a proposal for amendments needed for the existing regulation.

More general issue naturally is how the new Ministry will use its supervisory powers to the NGD. This is crucial from the point of view of future role of the NGD.

2.3 The New Organizational Structure

For already some time there have been discussions about dividing the NGD into two separate agencies. Lately these discussions have been intensified and an actual proposal for this kind of a division has been prepared. In practice this will be done by adopting two new Decisions to replace the existing Decree No 136/PM; one for the new NGD and another for the Mapping and Surveying Centre. The following structure is based on the draft of these Decrees which were translated by the TA.



Note: The Decisions do not specify number of Deputy Directors and their responsibilities. This will be done later by decisions of the Ministry of Home Affairs.

The existing drafts do not specify activities of the new agencies. This is supposed to be done later by other Decrees which will replace the existing Decree No 255/PM. In practice this would mean a division of the activities specified in the Decree into two categories: the ones belonging to the new SMC and the ones remaining within the NGD. This will be discussed later.

This kind of a division however has more general consequences. Perhaps the most crucial is the loss of direct connection between the divisions belonging to different agencies. As the agencies will be independent and under different directors, the only direct link is the home Ministry. It is obvious that co-operation in these circumstances cannot be as close as it has been so far. Matters will not more be internal. From this point of view it would have been better to establish the Center under supervision of the NGD. This option obviously was discussed in the NGD but got rejected.

In any case the adopted solution highlights the importance of clearly defining processes involving both agencies in the future Decree of Decrees. The practical forms of co-operation should also be established as soon as possible. This will be discussed later in context of mandate of the NGD and SMC.

3. THE PRESENT MANDATE AND ACTIVITIES OF THE NGD

3.1 Background

Defining the clear mandate of the NGD is important to ensure that all activities conducted by the NGD have sufficient legal background and that the NGD fulfills duties set for it in the legislation. It is also necessary to know what kind of future activities can be included in the jurisdiction of the NGD. This concern for example activities related to establishment of the land information system and national spatial data infrastructure. If necessary, the mandate could be clarified and perhaps even expanded when amending the existing Decree. In any case it is necessary to define what can and will be the role of NGD in land management and information system.

The mandate of NGD is more or less based on the Decrees No 136 and 255, which are both adopted under Law on the Government of Lao PDR No 2/NA (6.5.2003). This means that they are not linked directly to implementation of any provisions of substantive legislation. This complicates defining the mandate a bit. What makes it even more complicated is the existing administrative structure. The activities conducted by the NGD belong to the field of land management although there is a specific authority responsible for land management (NLMA). Separation of jurisdiction of these two authorities is crucial. Naturally the regulation on NLMA plays also a major role in this and has to be taken into a consideration.

General legislation about land management is included in the Law on Land (amended No 04/NA, 21.10.2003), which for example specifies activities belonging to the land management. Although not specifically referred to in the Decrees No 136 and 255, mission of the NGD relates

at least mainly on the implementation of the Law. Therefore it is also essential to be taken into a consideration when defining the mandate of NGD.

3.2 Land Management in the Law on Land

Land management activities are defined in the Law on Land. Provisions related to this were amended in 2003. When considering the mandate of NGD, these amendments seem to be quite significant. Perhaps the most important was exclusion of “general land mapping” from list of land management activities (compare the former article 9 with the new article 10). It is a bit unclear whether this was done deliberately or not. In the same context also the old article 10 was deleted. This article could be seen as a legal base for establishment and mandate of the NGD as it corresponds mainly to the Decree No 255/PM. The only clear difference is land zoning which is mentioned in the Law but not recognized by the Decree.

According to the old article 10 a specific organization was to be established for land data survey and zoning, collection of land data for classification of land (regions and categories), mapping, and assignment of collected data to Agencies and Local Administrative Authorities.

Exclusion of the mapping from land management can be understood to mean different things. One possible interpretation is that the present Law prescribes only about land management activities belonging to the land management authorities, which according to the Law consists of National Land Management Authority, Local (provincial, city, district, municipal) Land Management Authorities, and village land units. The title of the new article 10 “Rights and Duties of Land Management Authorities” is in favor of this interpretation as its predecessor was titled more generally “Functions in Land Management”.

The preceding means that the NLMA clearly has a mandate to conduct activities specified in the article 10 of the Law on Land. The NLMA however does not have exclusive right to conduct these activities. This is essential as some activities conducted by the NGD are included in the list. It seems that mandates of these two are partly overlapping. This concern at least the following activities mentioned in the article 10 of the Law on Land:

- 2) To undertake land survey, - -;
- 10) To develop a data and information system on land;
- 11) To define policies and regulations to protect people who perform their professions on land such as land surveyors (*note*: the exact translation is “measure-survey”).

3.3 Mandate according to Decree No 255/PM

Article 1 about the purpose of the Decree defines also the mandate of NGD in general level. According to the article, the NGD is responsible for:

- 1) Ensuring national level unity in administration and management of plans, technique, quality, equipment, technicians and funds,

- 2) Promoting economically and efficiently surveying, aerial photography and mapping activities, and
- 3) Preserving results of surveying, aerial photography and mapping in a unified system and distribute it for use.

This article is mainly in coherence with the article 9 of the Law on Land as aerial photography is a form of data collection. References to unity and unified system can be seen relating to general provision about land management in the article 8 of Law on Land according to which the State has overall responsibility of land management “in a uniform and coordinated manner”. Point 2 seems to refer only to promoting surveys instead of conduction of them, but the latter is mentioned later in the Decree.

The article also sets qualitative obligations as it requires surveying, aerial photography and mapping activities to be conducted in an economical and efficient way. Article 2 further requires that data resulting from these activities shall be managed well to ensure its effective use.

Detailed commentary of the Decree is attached into this report (as annex 1). The following is based on the commentary.

3.4 Specified and Actual Activities

Decree No 255/PM specifies several specific activities for the NGD. In the following table they are listed in the first column. The second column shows corresponding activities actually conducted by the NGD. The second column is based on interviews of counterparts and staff of NGD.

Activity mentioned in Decree No 255/PM	Practical Implementation
Development of technology (research). (art 4.1)	The NGD conducts researches on technology of surveying and mapping.
Training (art 4.1 and 14)	On a request, the NGD trains staff of other ministries and sometimes also private parties. The latest training was organized for staff of the Ministry of Energy and Mines.
Preparation of proposal of technical regulations (art 4.4)	There currently are only few technical regulations and even they are considered outdated. New regulations are needed and can be adopted under the forthcoming new Decree(s).
Establishment of control network, leveling and gravimetric network in the country (art 4.3)	The NGD is in charge of Establishment of the National Geodetic Network, GPS and leveling work.
Conduction of surveys (art 4.2)	The NGD conducts surveys mainly for its own products and activities, but also to some extent participates survey work of other Ministries and

	even private parties. Recently the NGD has for example taken part in demarcation of administrative and national boundaries. Some other Ministries have their own surveyors.
Organizing surveys (art 4.3)	The NGD does not organize surveys other than its own.
Conduction of aerial photography (art 4.2)	The NGD conducts aerial photography for its own products and activities as well as for other Ministries. It also provides aerial photographs for different purposes.
(Other) Data collection (art 1 and 8)	The NGD should collect all data related to surveys, aerial photography and mapping and preserve it for further use. This however is not systematically done and only some of the data is submitted to the NGD. In any case these provisions highlight the role of NGD as central organization for maintaining and distribution of geodetic data.
Conduction of mapping - Preparation of topographic and thematic maps (and map brochures) (art 4.6)	The NGD designs, establishes and prints maps and prepares digital maps.
Maintain all documents and data of surveys, original negatives of aerial photography, satellite images, maps and results of areal demarcation (including what is done by other ministries etc) in one unified system (art 1 and 8)	See what is said above about data collection.
Distribute the above-mentioned data (art 1 and 8)	See what is said above about data collection.
Inspection and supervision of plans, techniques, quality, effectiveness and management of surveying aerial photography and mapping of other ministries etc. (art 5.1)	This is not systematically done. Sometimes the NGD however is requested to verify results of work conducted by other Ministries or parties.
Maintain a list of companies, surveying units, surveyors as well as surveying, aerial photography and mapping equipment (art 5.2)	The NGD maintains a list of private companies, their equipment, and work they conduct.
Organizing technical inspection of instruments (art 5.3)	This is not done in practice; the NGD does not have technical capacity to do this.
Certify quality of surveying, aerial photography and mapping products within the whole country (art 5.3)	This is not systematically done. Sometimes the NGD however has been requested to verify results of work conducted by other Ministries or parties.
Make a proposal for Government about issuing permit for surveying, aerial photography and mapping activities of other ministries etc. (art 6)	Other Ministries do not apply specific permits, but private companies do. Proposals are submitted to the Prime Minister's Office and also to Ministry of Defense and Ministry of Foreign Affairs if necessary.
Issue permits for use of geodetic, astronomic and leveling points; negative and films of aerial photography; any surveying data related to	The NGD issue permits to use aerial photographs and leveling points, but not for use of topographic maps although this is included in the article.

administrative boundaries; and topographic maps (art 10)	
Issue permits for temporary export of films of aerial photographs, satellite images, and survey data related to administrative borders and topographic maps and for export of equipment (art 11 and 12)	The NGD issue export permits when an application is launched but cannot control export in general.
Receive and consider notifications about constructing over survey marks (art 12)	Survey marks are occasionally destroyed and damaged by construction work. The NGD has issued stop orders when a threat has been found out and also requested compensation to be paid for damaged marks. The NGD has worked with local authorities to promote protection of the marks.

3.5 GIS Coordinating Committee

From the national spatial data infrastructure point of view, an interesting organ is the GIS Coordinating Committee. This is perhaps the most advanced attempt to coordinate geographic information, and through this, the related work of different Ministries and Agencies. The Committee was established already in 2003 by an Agreement of the Prime Minister's Office No 0593/PMO (23.7.2003). The Committee has not been operational mainly due to lack of funds. Revitalization of the Committee with support of the SNGS however is under planning and has been at least unofficially approved by the Director General of the NGD who is also the Chairman of the Committee. In this context it should be considered whether the Committee could be institutionalized by prescribing about it in a Decree. At the same time the role of the NGD as a leading organization in coordination of geographic information could be strengthened by prescribing that the NGD facilitates the work of the Committee and that the Director General will permanently be the Chairman of the Committee.

3.6 Conclusions

When comparing the lists above it is obvious that the NGD is not presently implementing all activities belonging to its mandate. Some of these activities are however recognized and implementation of them is under preparation or at least planned. Some activities on the other hand have been deliberately neglected for several reasons. This concerns especially activities related to the work of other ministries and agencies. There have not been any serious attempts to coordinate these activities with other ministries and there is not much the NGD can do by itself. The NGD, for example, does not have powers to enforce other ministries to hand over all data resulting from surveying, aerial photography and mapping activities. This is due to the fact that relevant provisions do not directly oblige authorities outside the administration of the Prime Minister's Office. This is the weakness of the existing Decrees as more or less internal statutes. More general obligations should be adopted either in form of a law or included in specific Decrees regulating activities of relevant agencies.

The preceding problem remains also in the future if the forthcoming new Decree(s) will be adopted as Decrees of the Ministry of Home Affairs. There however have been discussions about the possibility to get the Government's confirmation for new regulation. If this will be done, the regulation would oblige all relevant Ministries and agencies under their administration. As described above the Law and Land can be used as a base for this kind of regulation. Article 84 of the Law provides the Government with the power to adopt detailed Regulations for implementation of the Law. As the Law covers all land management activities, this is a natural base for inter-ministerial regulation. In the absence of this kind of regulation, co-operation is the only way to implement activities concerning other Ministries and Agencies. This needs to be taken into a consideration when preparing the new Decree(s) and especially in defining mandate for the new SMC.

3.7 Possible New Activities

When considering either broadening the mandate of the NGD or including new activities into the existing mandate, crucial is the fact that the mandate is not based in any law (see what s said before). There is nothing on which they could be directly linked to, especially after the exclusion of the mapping from the Law on Land. Therefore the most crucial issue to be taken into a consideration are mandates and jurisdiction of other authorities. This concerns especially the Land Management Authorities, which have the overall responsibility on the land management activities. It is clear that the mandate of NGD and SMC cannot cover activities specified to belong within responsibilities of the NLMA. This however does not mean that all activities conducted by the NLMA are excluded from mandate of other authorities. It is possible and even appropriate that the NGD and SMC could support the NLMA in conducting its activities. Overlapping work should be avoided and work should be allocated to the Agency having the best expertise and resources for it. Therefore the NGD and SMC should consider what kind of services it can provide to the NLMA and other authorities in execution of their duties.

4. NEW MANDATES OF THE NGD AND SMC

4.1 Introduction

New mandates of the NGD and SMC will be completed by new regulation to replace the existing Decree No 255/PM. In formulation of this regulation the starting points naturally are the new (draft) Decisions on NGD and SMC. Notable is that in addition to determining the new organization, these Decisions also contain basic provisions about duties and rights of the NGD and SMC. Therefore they more or less define their mandates in general level. The future regulation however is needed to confirm how these duties and rights will in practice be conducted. Approach of this regulation will be more activity or process -based than organization based.

Taking the preceding into a consideration, for preparation of the new regulation it is crucial to specify, what the (draft) Decisions actually prescribe about mandates of the NGD and SMC. This will be done next. The following is based on translations of the draft Decisions submitted to be signed by the Minister of Home Affairs. The Decisions were not signed by the end of the mission. Comparison of these drafts and the Decree No 136/PM is attached to this paper (see annex 2). When reading the table it should be noted that some differences in tasks are due to translation

4.2 Rationale for the New Organization

Knowing the backgrounds for division of the NGD is important for understanding intended roles of the NGD and SMC. This is needed in interpretation of the (draft) Decisions and especially in preparation of the new regulation. The Decisions or other existing documents however do not provide any background information about division. They neither reveal the source of original initiative. Interviews conducted during the mission did not give unambiguous answer; instead several possible reasons were mentioned. Two of the most common and perhaps most convincing ones were the following:

- 1) The NGD at its present form is too big to be one department (personnel is around 100 while appropriate size for a department is maximum 50 people).
- 2) Separating policy and technical responsibilities to different agencies follows pattern implemented in other Ministries (and possibly even guidelines of the Government).

Both of these reasons make sense. For several reasons it is justified to divide policy and management level from implementing and operative agency. The new Decisions seem to some extent support this idea. This can be seen especially in articles on objectives. According to these:

- The NGD “Plays a role as chief of staff and assistant of the Minister of Interior and Government in the **management and inspection of activities** of surveying, aerial photography and mapping nationwide, as well as implement and fulfill political duties assigned by the Ministry of Interior and the Government”, and
- The SMC is “the assistant engine of the Ministry of Interior and Government in **implementing activities** of surveying, aerial photography and mapping”.

Article 3.1 of the (draft) Decision on SMC further prescribes that the SMC shall carry out surveying, aerial photography and mapping activities “according to the plan and assignment of the NGD - -”. This is repeated in article 4.6 prescribing that the SMC shall carry out “activities on surveying and mapping of terrain maps and specific map as assigned by the NGD and the Ministry of Home Affairs”.

The idea seems basically to be that the NGD is responsible for management and the SMC implementation of activities related to surveying, aerial photography and mapping. As explained earlier the NGD and SMC however are independent organizations and do not have

any other direct link to each other than the home ministry. The (draft) Decisions do not change the situation much as the referred articles 3.1 and 4.6 are the only provisions even mentioning the other organization. From the legal point of view this means that, the NGD does not in practice have any powers or tools to manage or supervise activities conducted by the SMC. It can only give assignments similar to other parties but nothing else. This is a major gap of legislation, which should be filled by the forthcoming Decree(s) or other regulation on surveying, aerial photography and mapping activities.

4.3 Specified Tasks

The draft Decisions specifies several duties for the NGD and SMC. According to them, the NGD shall:

- Prepare proposals of strategic and operational plans on the activities of surveying, aerial photography and mapping (art 2.1);
- Draft laws, regulations and policies on surveying, aerial photography and mapping (art 2.2) and propose them to the Ministry (art 3.5);
- Support, monitor and inspect the implementation of regulation (art 2.3);
- Advise the Ministry and Government on surveying, aerial photography and mapping (art 3.1);
- Build infrastructure for surveying, aerial photography and mapping (art 2.4);
- Develop and manage national basic survey networks (art 10.3, 10.5);
- Develop and prepare basic national geographic maps (art 10.4, 12.2) and maps for other organizations (art 8.2);
- Develop and manage a database of geographic information (surveying, aerial photography and mapping) (art 2.5);
- Provide geographic information from the database (art 2.5);
- Conduct (basic) activities of surveying, aerial photography and mapping (art 2.5);
- Manage and maintain original films, information on aerial photography, satellite images, mapping data, and other relevant information (art 11.3, 12.3);
- Provide vehicles and surveying equipment for other parties (art 8.2);
- Study and develop surveying, aerial photography and mapping technologies (art 9.3) and present findings on regular basis (art 2.6);
- Cooperate with foreign countries and participate in activities of international organizations in fields of surveying, aerial photography and mapping (art 2.7, 3.4);
- Register mapping and surveying professionals and entities, surveying equipment and technical experts employed by them (art 2.8);
- Issue licenses for surveying, aerial photographic and mapping activities; inspect and issue technical accuracy certificates on the implementation of those activities (art 3.6)
- Coordinate with relevant parties in activities related to national border and joining zone activities (art 2.9);

- Participate in international border demarcation and prepare border and joining zone maps (art 3.2), manage original information on these activities (art 2.10);
- Organize dissemination meetings, seminars on laws, regulations and techniques on surveying, aerial photography and mapping (art 3.3) and upgrade capacity of personnel within the Department and other relevant organizations (art 9.3);
- Propose to the Minister of Interior or Government for consideration the amendment or
- Carry out technical inspection and certify production quality on surveying, aerial photography and mapping nationwide (art 9.4);
- Propose to the Minister or the Government to consider suspension of illegal activities (art 3.7), and to take legal actions against violators (art 3.8); and
- Propose to the Minister of the Government to reward complements (art 3.8).

And the SMC shall:

- Prepare proposals for strategic and operational plans on the activities of surveying, aerial photography and mapping (art 2.1);
- Prepare programs and projects to implement legislation and development plans (art 4.2);
- Create coordinate plot networks, altitude and magnetic globe at different levels (art 11.1);
- Carry out surveying, aerial photography and mapping activities according to the plan and assignment of the NGD, the Ministry of Interior and the Government (art 3.1, 4.6);
- Carry out technical activities on surveying, aerial photography and mapping for projects and activities as requested by the society (art 4.7) and implement surveying, aerial photographic and mapping projects (art 5.2);
- Disseminate policies, legislation and measures related to the role and duties of the Survey and Mapping Center (art 5.1) and organize technical meetings, seminars on surveying, aerial photography and mapping activities (art 5.4);
- Inspect technical standards, maintain and repair surveying and mapping equipment (art 9.2);
- Provide consultancy services on surveying and surveying equipment, and mapping nationwide (art 9.1 and 11.4);
- Provide flights for aerial photography to serve surveying and mapping activities (art 10.3);
- Coordinate, cooperate and sign agreements with various parties as assigned by the Minister of Interior or Government (art 5.3);
- Coordinate and Cooperate with different relevant parties, carry out marketing duties in managing, providing information on surveying, aerial photographs and mapping (art 8.3).

When comparing the preceding list with the Decree No 136/PM a general conclusion is that the duties of NGD are defined more or less identically with the Decree No 136/PM. On the other

hand the duties of SMC seem to overlap with these in many ways. For example implementation activities are not excluded from NGD's mandate and the (draft) Decision on the SMC contains articles about preparation and proposing strategic and operational plans to the Ministry although this should belong to the NGD. In fact the (draft) Decision on the NGD contains a similar provision. Duties overlap also in several other articles. As a result the division of labor between the NGD and SMC is far from clear. More common problem however is how duties and activities of NGD and SMC are meant to relate to each other in practice. Clarification of this is the second major objective of the new regulation to be prepared.

4.4 Conclusions for the forthcoming Regulation

As already mentioned, the new Decree, Decrees or other regulation to replace the Decree No 255/PM will complement the mandates of the NGD and SMS. It should therefore concentrate on relevant issues that either are excluded from the new Decisions or are improperly regulated in them. As the tasks specified in the Decisions seem to cover basically all activities conducted or planned to be conducted by the NGD and the SMC, the new regulation should mainly concentrate on defining how the tasks specified in the Decisions will in practice be organized and conducted. It should be more process-based than duty-based. This way also the division of labor between the NGD and SMC could be clarified.

The process-based approach is already recognized in the existing Decree. It does not prescribe about organization or duties of the NGD but instead about surveying, aerial photography and mapping activities in general. In the new regulation this approach should however be taken further by clearly defining the roles of the NGD, the SMC, and other relevant parties in different activities. The regulation should also strengthen the ties between the NGD and SMC, which is essential to ensure coordination of work of these independent authorities. It still needs to be discussed how tight this connection should be and how independently the SMC can operate for example in accepting and conducting consultancy assignments from other parties than the NGD. Although the Decision on the SMC refers to implementing assignment and plans of the NGD, the Ministry and the Government it does not clearly exclude possibility for accepting other assignments. In any case, it somehow has to be ensured that assignments from the NGD, the Ministry and the Government are always prioritized.

5. THE MAIN PRINCIPLES OF THE NEW REGULATION

5.1 Questionnaire

One of the main objectives of the forthcoming Decree is to specify and confirm the division of labor between the NGD and SMC as well as practical processes of surveying, aerial photography and mapping activities. As the (draft) Decisions described earlier are not totally clear, the first thing is to clarify how the division of labor has been intended to be arranged. Consensus on this in the NGD is essential to achieve before the actual division will take place. In order to facilitate the discussions in the NGD a simple questionnaire was prepared. The purpose was to activity-

by-activity specify which authority should be responsible for implementation. The results are meant to be taken as a base for establishing the processes.

The questionnaire was distributed to the Directors and staff of the NGD through the counterparts. The following joint answers correspond mostly to rationale of the new organization. Some inconsistencies however existed and some points needed further discussion. These answers are indicated in red and results of discussions related to them are explained below.

QUESTION		ANSWER	
		Yes	No
1	Does the NGD have the overall responsibility over management, inspection and supervision of all surveying, aerial photography and mapping activities in LAO?	✓	
2	Is the NGD meant to supervise activities of the SMC?	✓	
3	Is the NGD meant to supervise surveying, aerial photography and mapping activities of other Ministries and agencies?	✓	
4	Is the NGD meant to supervise surveying, aerial photography and mapping activities of private companies?	✓	
5	Can the NGD give orders to the SMC?	✓	
6	Does the NGD need to inspect and confirm results of SMC's work	✓	
7	Can the SMC take assignments from other Ministries, agencies and private companies?	✓	
8	If it can, do these assignments require approval of the NGD?	✓	
9	Does the SMC report to the NGD about its work in general?		✓
10	Does the SMC report to the NGD about concrete results of its assignments?	✓	
11	Does the SMC need to submit all data and material to the NGD?	✓	

ACTIVITY		should belong to		
		NGD	SMC	Both
12	Preparing proposals for new policies and legislation	✓		
13	Preparing technical regulations and instructions	✓		
14	Preparing strategic and operational plans for surveying, aerial photography and mapping activities			✓
15	Creating and maintaining a database of surveying, aerial photography and mapping data			✓
16	Creating and maintaining GIS database(s)	✓		
17	Sharing information from the database(s)	✓		
18	Selling aerial photographs	✓		

19	Selling maps			√
20	Selling other survey, mapping etc. related services			√
21	Maintain all documents and data of surveys, original negatives of aerial photography, satellite images, maps and results of areal demarcation			√
22	Conducting surveying, aerial photography and mapping activities for the NGD		√	
23	Accepting assignments from other Ministries and agencies		√	
24	Accepting consultancy assignments from private parties		√	
25	Accepting assignments from foreign companies (e.g. hydro power)		√	
26	Making consultancy-contracts for private assignments		√	
27	Conducting surveying, aerial photography and mapping assignments or other Ministries and agencies			√
28	Conducting surveying, aerial photography and mapping assignments of private companies etc.		√	
29	Conducting surveying, aerial photography and mapping activities for the NGD		√	
30	Conducting surveying, aerial photography and mapping activities for foreign companies			√
31	Issuing licenses for private surveying companies	√		
32	Keeping a list of private surveying companies and equipment	√		
33	Make a proposal for Government about issuing permits for surveying, aerial photography and mapping activities	√		
34	Organizing technical inspection of instruments			√
35	Inspecting and certifying quality of surveying, aerial photography and mapping products within the whole country	√		
36	Issue permits for use of geodetic, astronomic and leveling points; negative and films of aerial photography; any surveying data related to administrative boundaries; and topographic maps	√		
37	Issue permits for export of films of aerial photographs, satellite images, and survey data related to administrative borders and topographic maps and for export of equipment	√		
38	Implement surveying, aerial photographic and mapping projects			√
39	Implement donor funded programs/projects	√		
40	Provide flights for aerial photography to serve surveying and mapping activities	√		
41	Receive and consider notifications about constructing over survey marks	√		
42	Defining the objectives and implementation for updating the maps and geographic data	√		
43	Promotion of mobile GPS applications in the country including car navigation		√	

44	Drafting a service and data sharing policy	√		
45	Drafting/defining pricing policies	√		
46	Repairs and maintenance of existing equipment, software and IT in to operational condition			√
47	Planning and procuring survey, mapping and GIS related hardware/software			√
48	Establishment of a modern digital orthophoto production and digital mapping line			√
49	Review of the existing geodetic network	√		
50	Review of the existing datum	√		
51	Densification of the horizontal and vertical geodetic			√
52	Review and improvement of transformation parameters between various data sets	√		
53	Production of digital orthophoto maps and digital/printed 1:50,000 topographical maps	√		
54	Updating and preparation of selected urban and suburban digital topographic maps at scale 1:5 000		√	
55	Co-operation with other ministries, organization etc. on data sharing and exchange e.g. in a form of GIS committee	√		

Question 5: According to the answer, the NGD could give orders to the SMC. This however does not seem possible as the NGD and SMC are two independent authorities without direct administrative link. It is unclear whether this kind of a link could be created in a Decree. It however is possible to prescribe that the NGD will lead processes and it can this way get some control over activities of the SMC. This will be discussed later in details.

Question 21: The purpose of the question was to indicate who will have the responsibility of collecting and maintaining the original data, films etc. In discussions it was later clarified that this should without any doubts belong to the NGD. The SMC however should maintain copies of results of its activities whenever this is possible.

Questions 23 and 24: This is one of the main topics that need to be discussed. Essential is to ensure that sufficient resources are available for activities related to public interest and services. As the SMC will at least mainly be in charge of practical conduction, the priority in its work should be given to assignments from the Government. For this purpose it is recommended that all activities of the SMC should somehow be approved beforehand by the NGD as will be explained later.

Questions 27, 30, and 38: The answers of NGD seem to indicate that although the SMC will be the operational organization, the NGD would also conduct surveying, aerial photography and mapping activities. The idea seems to be that the NGD would be in charge of conducting work for Government and the SMC would mainly deal with other parties, but also assist the NGD

whenever this is considered necessary. In practice this would mean that both organizations will have their own technical staff and equipment. It is questionable, whether this kind of a dual solution is sustainable and appropriate in the long run. Coordination however is in any case required just to prevent the organizations from competing with each other.

Question 39: According to the answer, only the NGD could implement donor funded projects. This however does not mean that the SMC could not be in charge of technical work related to implementation. It was explained that the NGD should be in charge of coordination of these projects.

5.2 Proposed Main Principles

Basing on the questionnaire, discussions about results of it, and the prior analyze on the (draft) Decisions on NGD and SMC the advisor prepared a proposal for the main principles of the new regulation. These were the following:

- New regulation is needed to adjust the present activities to the new organization and to follow up general development in the field of surveying, aerial photography and mapping.
- Similar to the existing Decree, the new regulation should prescribe about surveying, aerial photography and mapping activities.
- Regulation could be adopted in a form of one Decree prescribing about processes.
- The Decree should cover all surveying, aerial photography activities regardless of by whom they are conducted.
- In order to achieve the preceding kind of general scope of application, the Decree should be adopted by a decision of the Government (decision of the Ministry would not have direct legal effect outside of its own administration as there is no general law in which decision could be directly based).
- The Decree shall take into a consideration the new (draft) Decisions on the NGD and SMC, which form a general framework for it.
- The Decree should clarify the division of labor between the NGD and SMC.
- The Decree should specify the role of NGD as general administrative and supervisory authority of surveying, aerial photography and mapping.
- The Decree should specify the role of SMC as an operative organization in charge of conducting practical activities of surveying, aerial photography and mapping.
- The NGD will be responsible for preparing proposals for legislation and policies.
- The NGD will be responsible for preparing proposals for technical regulations; the preparation however should be done in co-operation with the SMC.
- The NGD will be responsible for co-operation with other Ministries and agencies in data sharing and other general issues.
- According to the (draft) Decisions, the SMC shall implement plans and assignments of the NGD (and the Ministry). This means that operations of the SMC should be approved beforehand by the NGD either in a plan or a specific assignment.

- The NGD and SMC will prepare together the operational plan for the SMC. The plan will be confirmed by the Ministry of Home Affairs, which also will decide about possible disagreements.
- The NGD can give assignments to the SMC only if it has resources to conduct them. Every assignment outside of the plan should be negotiated beforehand with the SMC.
- The SMC cannot directly take any assignments from other parties without approval of the NGD. This is important to ensure that operations of the SMC are prioritized from national interest point of view.
- After approval, the SMC can make contract with the client.
- The SMC will be responsible for conducting the work according to the contract.
- The SMC will submit results directly to the client, but shall submit the data to the NGD
- When conducting work of the Government, the SMC shall submit the results to the NGD for inspection and approval.
- The NGD shall collect all data from surveying, aerial photography and mapping activities and establish database for it.
- The NGD will be responsible for organizing distribution of data from the database and selling of products.
- Data distribution and selling can be organized through the SMC.
- The NGD and SMC will together prepare proposal of fees to be collected from data, products and services and submit it to the MEF for approval.
- The Decree will contain the basic provisions about copyrights.
- It should be decided who will be responsible for organizing training for other Ministries and agencies.
- The Decree could confirm the status of GIS Coordinating Committee.

These principles were presented to other advisors and counterparts. In discussions these principles were mainly accepted although further discussions about some points were requested by the NGD. It was however decided that these principles will first be further formulated into a more detailed proposal for the structure and main content of a new Decree and discussions conducted about this. This proposal will be presented in the next chapter.

6. STRUCTURE AND MAIN CONTENT OF THE NEW DECREE

The following proposal for the structure and main content of the new Decree to replace the existing Decree No 255/PM was presented to the counterparts and the directors of the NGD. A meeting with around 30 participants from the TA and SNGS about the proposal was held on 25.10.2011 in the NGD. The column on the right shows comments made in the meeting.

DECREE (OF THE GOVERNMENT) ON SURVEYING, AERIAL PHOTOGRAPHY AND MAPPING ACTIVITIES IN THE TERRITORY OF LAO PDR		
Part 1. General Provisions	Main Content	Comments made in the meeting on 25.10.2011
<i>Article 1. Scope of Application</i>	The Decree shall cover all surveying, aerial photography and mapping activities in Lao.	<p>Instead of Lao, the Decree should use the correct term Lao PDR.</p> <p>Concerning the structure a comment was made that all provisions about the same issue should be in the same context. This was taken into a consideration in discussions about the provisions, but no further comments about the issue were made.</p>
<i>Article 2. General Objectives</i>	To general objective is to ensure unity, quality, and efficiency in activities and management of surveying, aerial photography and mapping, and to promote economic growth and environmental sustainability.	<p>Instead of economic growth, the Decree should refer to socio-economic growth. It is also unclear what the efficiency covers in this context. It was agreed that this should be clarified in Lao version which is and will be the original one, English version is only a translation and actual drafting needs to be done in Lao.</p> <p>Development Plans of the Government should be included somewhere in the Decree.</p>

<i>Article 3. Definitions</i>	Explanation of key terms used in the Decree. Surveying should cover also GIS.	Also other Ministries have GIS activities and it does not belong solely to the NGD. It was clarified that the role of NGD is to be in charge of coordination of GIS activities. Result of lively discussion was that GIS should be included in the Decree, although some concerns were raised about practical conduction of this work.
<i>Article 4. Organization (NGD and SMC)</i>	General description of roles and mandates of the NGD and SMC. Addition to the (draft) Decisions, the National Spatial Data Infrastructure should be included in mandate of the NGD.	
<i>Article 5. GIS Coordinating Committee</i>	The Committee is responsible for coordination of Geographic Information and for supporting establishment of the national spatial data infrastructure. The NGD is responsible for facilitating work of the committee. The Director General of the NGD is the chairman of the Committee. Other members and secretaries shall be nominated by the Prime Minister. All relevant Ministries shall be presented.	GIS coordinating Committee was established already in 2003 but has not been operational due to lack of funds. However with the support of SNGS this is now possible. It was also mentioned that the Director General of NGD had already expressed his support to the revitalization of the Committee.
<i>Article 6. Policies and Technical Regulations</i>	The NGD shall prepare proposal for policies, plans and amendments to the legislation to the Minister. The NGD shall prepare a proposal for technical regulations to the Minister with support of the SMC.	Importance of references to regulations was mentioned in the discussions.
Part 2. National Geographic Information Depository		
<i>Article 7. Value and Management of Data</i>	Surveying, aerial photography and mapping data is the national asset important for the national security, economic development, society, culture,	The provision is more or less the same as corresponding provision in the Decree No 255/PM.

	built and natural environment, and science. The data shall be properly managed, shared, and used efficiently.	
<i>Article 8. Database</i>	The NGD is responsible for developing, establishing and maintaining a database in which all data from activities of the NGD and SMC shall be collected. The database shall also contain data prepared by other Ministries and agencies.	Some discussion was conducted about whether information from other Ministries should be included in the database or not. The Advisor reminded about article 2.5 of the (draft) Decision on the NGD according to which the NGD is responsible for managing and creation of database and providing national geographic information. Also name of the database was discussed, but this was left to be defined later.
<i>Article 9. Submitting Data to the NGD</i>	All ministries, agencies, and private companies are obliged to submit important information about their data to the NGD to be included in the database.	See the notes above about article 8.
<i>Article 10. Access to Data</i>	Everybody has right to get data from the database in accordance with provisions of this Decree.	
Part 3. Conduction of Surveying, Aerial Photography and Mapping Activities		
<i>Article 11. Permit for Activities</i>	Government approval is required for all conduction aerial photography, topographical mapping and higher level geodetic surveys excluding activities authorized in laws or Government Decrees. Application for approval shall be submitted to the NGD for consideration and preparation of proposal for the Government. Activities shall be conducted in accordance with conditions of the permit and provisions of this	The term “higher level geodetic surveys” was not properly understood. It was explained that the purpose was to exclude small scale activities done by for example handheld GPS-devices from the scope. This approach was considered justified.

	Decree.	
<i>Article 12. Registration</i>	All private surveying companies, their staff, and professional surveying, aerial photography and mapping equipment shall be registered in the NGD. The NGD shall keep the list of them.	Possibilities to conduct this in practice were questioned. One however must bear in mind that this is not a licensing system for professional surveyors, but merely a system for collecting information about companies and their activities. It was agreed that instead of all staff, the provision should cover only technical experts.
<i>Article 13. Technical Inspection</i>	Professional surveying and mapping equipment shall be inspected by the SMC, which issue quality certificates for approved equipment.	
<i>Article 14. Coordinate System</i>	Coordinate system confirmed by the Government shall be used in all surveying, aerial photography and mapping activities.	
<i>Article 15. Aerial Photography.</i>	Technician of the NGD shall participate in conduction of aerial photography and photo processing. If the NGD considers necessary also other authorities shall participate.	
<i>Article 16. Certification</i>	The NGD shall carry out technical inspection and certify quality of surveying, aerial photography and mapping activities and products upon requests.	Importance of prescribing about quality of surveying and mapping was mentioned in discussions.
<i>Article 17. Compliance Certificate</i>	The NGD may issue a certificate to prove that work is conducted in accordance with permits and regulation of this Decree.	
<i>Article 18. Handing Over the Results</i>	After completion, copy of data resulting from professional surveying and aerial photography, demarcation of administrative boundaries, and topographic maps shall be	

	handed over to the NGD.	
<i>Article 19. Import and Export of Equipment</i>	Import and export of professional surveying, aerial photography, and mapping equipment requires an approval from the NGD.	
<i>Article 20. Export of Data and Products</i>	It is forbidden to export data and products resulting from professional surveying, aerial photography, and mapping activities if this contradicts with national security or national interests.	
Part 4. Operations of the NGD and SMC		
<i>Article 21. Operational Plan for SMC</i>	The SMC and NGD prepare together an annual operational plan which specifies detailed activities and operations. The plan should cover all known public and private activities. The plan shall be approved by the Ministry of Home Affairs. The SMC shall conduct its activities and operations according to the approved plan.	<p>The Advisor explained backgrounds for the proposed processes related to services of the SMC. Necessity to establish and confirm mechanism for cooperation and coordination was generally understood. The proposed model however was not directly accepted and it remains to be decided whether and what kind of activities of the SMC will require approval from the NGD. This is perhaps the most crucial issue to be discussed and decided in further preparation. It was agreed that special attention shall be given to this issue in further preparation.</p> <p>It was also noted that the NGD and SMC should have their own plans. This however relates to the discussion described above.</p>

		The advisor explained that he will prepare a draft for the Decree basing on the proposed model for a base for further preparation.
<i>Article 22. Specific Assignments.</i>	The NGD and the Ministry may give the SMC assignments outside of the plan. This however may be done only within resources of the SMC and requires prior negotiations with the SMC. If there are not enough resources, the plan should be modified accordingly. If a Ministry or Government Agency wishes to use the services of the SMC it shall negotiate with the NGD.	See the discussion above about article 21.
<i>Article 23. Using Services of SMC</i>	<p>The SMC provides surveying, aerial photography, and mapping services to private parties in accordance with the operational plan and assignments of the NGD. Anyone who wishes to use services of the SMC shall submit application to the SMC for considering. If the SMC considers that it has resources to conduct it, it shall send the application with calculation of costs and fees to be collected to the NGD for approval. After approval the SMC may make a quotation and sign an agreement.</p> <p>The SMC has no authorization to conduct any activities without approval of the NGD.</p>	See the discussion above about article 21. It was also mentioned that the SMC should be able to conduct smaller operations without prior approval of the NGD and only bigger ones should be first submitted to the NGD for consideration.
<i>Article 24. Completion</i>	After completion, the SMC shall send the work assigned by the NGD to the NGD for inspection and verification. Other works the SMC may deliver directly to	

	the client, but shall send the material referred to in article 17 to the NGD.	
<i>Article 25. Training</i>	The NGD and SMC provide training of surveying, aerial photography and mapping upon requests.	It was considered appropriate that both will provide training.
<i>Article 26 Production of Orthophotos</i>	The SMC shall maintain and operate a modern digital orthophoto production and digital mapping line.	
<i>Article 27 Production of Maps</i>	The NGD is responsible for production and updating of topographical maps, but can use services of the SMC for conduction of this task.	
<i>Article 28 Geodetic Networks</i>	The NGD has an overall responsibility on establishment, reviewing and maintaining geodetic networks. Technical work shall be done by the SMC in accordance with the operational plan and specific assignments of the NGD.	
Part 5. Distribution and Use of Data and Products		Importance of prescribing about trading was mentioned. This however relates to distribution prescribed in part 5. Additionally (draft) Decision on the SMC already contains a provision about marketing.
<i>Article 29. Surveying, Aerial Photography and Mapping Products</i>	The NGD is in charge of selling products prepared by the NGD and products prepared by the SMC for the NGD. If considered appropriate, the SMC may distribute products for the NGD. One stop –principle should be applied.	
<i>Article 30. Data Distribution from the Database</i>	The NGD is in charge of distribution of data from the Database. If considered appropriate, this may be done through the SMC. One stop –	

	principle should be applied.	
<i>Article 31. Fees</i>	A fee shall be paid for services of the NGD and SMC, products and data according to a list confirmed by the responsible Government authority. The list shall be available in all places where products are sold. The NGD with support of the SMC prepares a proposal for fees.	Terminology in Lao version should be clarified as there are two different words for fees referred to in this provision.
<i>Article 32. Copyright</i>	The NGD has a copyright to all products and data prepared by itself or by the SMC for the NGD in accordance with the Law on Intellectual Property. Purchaser gets only limited rights to use them for the purposes which they are purchased. An agreement to specify conditions for use shall be made for each delivery of data. Sample of the agreement can be attached as an annex to this Decree.	
Part 6. Miscellaneous Provisions		
<i>Article 33. Protection of Survey Marks</i>	It is forbidden to destroy or damage survey marks. The NGD shall be informed by construction and other activities which might affect them at least 30 days beforehand. The NGD may prohibit or stop any work that might effect on the marks.	
<i>Article 34. Disciplinary Actions</i>	Violator of this Decree, permits, agreements etc. shall be punished.	
Part 8. Final Provisions		
<i>Article 35. Coordination and Dissemination</i>	The NGD and SMC are both responsible for dissemination of the Decree. The NGD is responsible for coordination with other Ministries and agencies in implementation.	
<i>Article 36. Coming into a Force</i>	The Decree replaces the existing Decree No 255/PM and will come into a force after signature (of the Prime Minister).	

A general conclusion to be made is that the content mainly corresponds to what has been discussed in the NGD. As was expected, the main issue still to be decided is the legal and administrative link between the NGD and SMD. As has been explained, the proposal was based on the idea to create fairly strong link between these Agencies for reasons specified earlier. This idea however did not gain unrestricted support of the participant. The staff of NGD seems to prefer more independent role for the SMC. The justification for the proposal was however understood, and a common understanding was reached about a general need to create some kind of cooperation and coordination mechanism. How to do this in practice remains still to be defined. Obviously options for proposed “operational plan and assignment” –model will be considered. In any case, it is extremely important to reach a consensus about solution before the division of NGD actually takes place. Later it would be much more difficult.

Basing on the results of the meeting, the Advisor prepared a draft for a new Decree. This draft was translated and submitted to the NGD for further discussions and preparation. Because it still is an internal discussion paper, a copy of it was not attached to this report. Despite of discussions in the meeting, the draft is based on the proposed “operational plan and assignment” –model. It however contains optional provisions aiming to increase independence of the SMC within the model. According to these provisions the operational plan would not necessarily contain specified assignments but instead define either resources that SMC shall allocate for public activities or resources that the SMC can use for private assignments.

ANNEX 1. Commentary on Decree (No 255/PM, 16/08/2005) on Surveying, Aerial Photography and Mapping Activities in the territory of Lao PDR

	Remarks and Comments	Conclusions and Proposals
<i>General</i>	Notable is that the Decree does not have a general provision about scope of application. This means that single provisions could be interpreted as they are without any limitations deriving from the scope of application.	
Part I – General Provisions		
<i>Article 1</i>	<p>Article specifies the overall purpose of the Decree. As a general provision it needs to be taken into a consideration in the interpretation of specific provisions of the Decree. The actual content of the article remains partly unclear due to the translation. The main points however seem to be the following:</p> <ol style="list-style-type: none"> 4) To ensure national level unity in administration and management of plans, technique, quality, equipment, technicians and funds. (Funds in this context refer to outside funding, for example from donor countries). 5) To promote economically and efficiently surveying, aerial photography and mapping activities, and 6) To preserve and use results of these activities in single unified system. <p>Article also refers to technical instructions officially outlined by the Government.</p>	<p>As the Decree refers to Decree No 136/PM about NGD, this article is the basic provision about the mandate of NGD. Basically all detailed activities mentioned in the Decree fall within these main categories.</p> <p>Notable is that point 3 gives clear and exclusive mandate to preserve results of surveying, photography and mapping in one place (system). This is crucial when considering national spatial data infrastructure and related systems.</p> <p>Power to issue technical instructions for implementation of this kind of Decree should belong to the authority responsible for implementation, in this case to the NGD. It should be considered whether an authoritative provision on this could be included in the Decree. On the other hand instructions might be more respected if issued by the Government. Crucial however is that even in this case they should be based on proposal of the NGD.</p>
<i>Article 2. Definitions and Interpretation</i>	Article contains the basic definitions used in Decree. In fact some of the terms are not used elsewhere in the Decree like for	Definitions should be reviewed to ensure that they are correct and appropriate. For example definition of Map Scale is too

	<p>example GIS Map and Digital Map.</p> <p>Notable is that surveying refers to survey activities related to preparation of any plan or map. The term plan however is not defined.</p>	<p>technical in this context. Scales should be defined in a specific provision if needed. It should also be considered whether additional definitions are needed.</p> <p>Definitions play major role in defining scope of application of the Decree and through this to mandate of the NGD. The NGD for example has a jurisdiction of surveys conducted by other authorities. What this means in practice depends directly on, what is understood to belong to “surveying” as is defined in the Decree.</p>
<i>Article 3</i>	<p>Article recognizes the value of surveying, aerial photography and mapping data (and the system!) as a national asset and requires it to be well managed for effective use.</p>	<p>Implementation of this provision requires establishment of a system through which the data can be used effectively for different purposes.</p>
Part II - The activities and management on the surveying, aerial photography and mapping		
<i>Article 4</i>	<p>Articles 4 and 5 define detailed activities belonging to surveying, aerial photography and mapping and this way are the basic provisions in defining the mandate of NGD.</p> <p>Activities specified in article 4 cover:</p> <ul style="list-style-type: none"> - Development and research of technology; - Training; - Conduction of surveys, aerial photography and mapping for socio-economic development, national defense, national security and research of technology (socio-economic development is a general concept, which can be understood to cover basically everything, therefore the provisions does not in practice restrict the mandate at all); - Organizing surveys; - Establishment of control network, leveling and 	<p>Articles 4 and 5 contain perhaps the most important provisions of the Decree. The content of them should therefore be carefully considered for the new Decree. Formulation and wording of the present activities should at this context be clarified and some new activities added.</p> <p>Technical regulations should be separated into an own article. This should be more clearly formulated as an authoritative provision to empower NGD either issue technical regulations/instructions for implementation of the Decree or to prepare a proposal of them for the Government (if approval of the Government is considered necessary).</p>

	<p>gravimetric network in the country;</p> <ul style="list-style-type: none"> - Preparation of proposal of technical instructions (there is an error in translation, which refers to restrictions) to be approved and confirmed by the Government; - Developing quality of data, amending and sharing the data; - Preparation of topographic and thematic maps and map brochures. 	
<i>Article 5</i>	<p>Article 5 specifies the following (management) activities:</p> <ul style="list-style-type: none"> - Inspection and supervision of plans, techniques, quality, effectiveness and management of surveying, establishment of geodetic network, establishment of leveling points and aerial photography as well as preparation of maps by other authorities and parties in order to ensure their coherence with the technical instructions issued by the Government. - Maintain a list of survey companies, surveying units, surveyors as well as surveying, aerial photography and mapping equipment in the country. - Organizing technical inspection of instruments and certifying quality of surveying, aerial photography and mapping products within the whole country. 	<p>This provision confirms the NGD's role as the leading and supervisory organization of geographic services. It also provides the NGD a mandate to some extent to supervise activities of other ministries and organizations. This concerns all activities related to surveying, aerial photography and mapping. Also quality of results of activities conduct by other ministries and organizations shall be certified by the NGD. This could be understood to mean that the NGD should inspect and confirm results of these activities. As one of these activities is surveying, definition of it is crucial as was explained before.</p>
<i>Article 6</i>	<p>Article prescribes that all surveying, aerial photography and mapping activities in the country requires a permit from the Government. The only exception is cases involving the national security. Proposal for activities shall be submitted to the</p>	<p>The provision requires NGD to set up a system of applying permits. Notable is that the article concerns all surveys regardless of by whom they are conducted and on which Law and Decree they are based. The provision does not</p>

	NGD to be presented to the Government.	<p>however necessary require separate permits for each survey and permit can therefore be issued generally to activities related to certain processes.</p> <p>It should be clarified whether an authorization in a Law or a Decree issued by the Government can be understood to contain a permit referred to in the article. If so, separate permit would not be needed.</p>
<i>Article 7</i>	Article requires a technician from the NGD to be present in conduction of aerial photography and film processing for mapping. In specific cases, some other organs should also be present. Other cases than ones related to security and national secrets are not specified.	Article leaves open, who decides when other authorities should participate In practice, the NGD evaluates the need and sends a letter to the Ministry of Defense and the Ministry of Foreign Affairs if necessary.
<i>Article 8</i>	Article requires all concerned parties to hand over documents and data of surveys, original negative of film of aerial photography, satellite images, maps and results of areal demarcation to the NGD for preservation and further use.	This provision is significant for two reasons. Firstly it means that the NGD is the authority responsible for maintaining all geographical data. Secondly it seems to authorize the NGD to share this data further for any purposes (“further use to meet requirements of all sectors”). This is another crucial provision to be beard in mind when discussing about the spatial data infrastructure.
<i>Article 9</i>	Article requires the officially confirmed (by the Government) coordinate system to be used in all surveying, aerial photography and mapping activities regardless of who conduct them.	The NGD uses Lao 97 as an official datum, while WGS 84 is more commonly used in Laos. It is actually a bit unclear whether the Government has officially confirmed Lao 97 as an official datum as is required by article 9. If it had been confirmed, use of other datum would be in contradiction with the article. If not, use of other datum is still allowed.
<i>Article 10</i>	Article prescribes that use of specified data requires a certified document from concerned agencies and approval from the NGD.	The provision covers among other things topographical maps, which means that they cannot be used without NGD’s approval. This relates partly to copyright of data

		prepared by the NGD.
<i>Article 11</i>	Article prohibits exporting the data specified in article 10 without NGD's approval.	
<i>Article 12</i>	<p>Article prescribes about protection of survey marks, which are considered as common properties important for national development. It further requires NGD to be noted one month in advance about construction over these marks.</p> <p>It however is not totally clear whether informing the NGD is enough or does the construction need to be approved by the NGD. In practice however a permit is needed and the NGD can even stop construction or other work if necessary.</p>	<p>Wording of this provision should be tightened to clearly prohibit damaging and destroying of survey marks. Currently this is done only indirectly in article 17, which prescribes about fine to be paid by anyone who destroy or damage the marks.</p> <p>It is clear that such an act should be considered as an offence and should be penalized. This however should most probably be done in a law as it is not possible to prescribe penalties in lower level statutes. Provision could be included for example in the Law on Land. (see also later article 16 about fines).</p> <p>Article should be clarified to prescribe that construction over survey marks, and any other activity that might affect them, always requires prior approval from the NGD.</p>
<i>Article 13</i>	Article prohibits exporting surveying, aerial photography and mapping equipment without NGD's approval.	Articles 11 and 13 could be combined. Neither of these articles set any criteria for exporting, which leaves the NGD freedom to apply whatever grounds in consideration. It might be appropriate to categorize data basing on general acceptance of its export (always prohibited, can be considered In certain circumstances, is allowed unless - etc.).
<i>Article 14</i>	Content of the article is a bit unclear mostly due to translation. It seems to prescribe that technicians of the NGD can be used for training only if the NGD has been notified and if training is included in an overall plan.	If the preceding interpretation is correct, the provision could be written much simpler way to prescribe about requesting training from the NGD without a need to include it in a plan.
Part III – Praise for whom is efficient and disciplinary actions against violation		
	Article prescribes about	The certificate should be called

<i>Article 15</i>	“compliment certificate” to be issued by the Government basing on report of the NGD. This refers to an official certificate that a project or work has been conducted in accordance with the Decree and other relevant regulation.	“Compliance Certificate”.
<i>Article 16</i>	<p>Article prescribes about fines for violators of the Decree. Fines are defined in percentages of project costs. According to the article, serious violations must be brought to trial.</p> <p>One specified fine relates to violation of copyright in publishing maps. The Decree however does not have a general provision about copyright.</p>	<p>Although reason for this provision is understandable, it raises several questions. Firstly it is unclear whether this kind of a penalty fine can be prescribed in a decree. Secondly, nature of the fine is unclear: is it a criminal fine or an administrative fine/fee. Thirdly, calculation of fine from project cost might be difficult or even impossible (what is project cost?). Exact amounts would be far simpler. Fourthly, it is unclear what the court could do in serious cases which are brought to it.</p> <p>To avoid the preceding uncertainties the provision could be formulated to prescribe about extra fee to be paid in case of neglecting to follow the obligations set by the Decree. The extra fee could for example be a multiplied original fee. This however requires that normal fees are defined somewhere, most logically in this Decree.</p> <p>Provision(s) about copyrights of products prepared by the NGD should be included in the Decree or in another statute. This provision should also prescribe about users’ obligation to follow conditions set by the NGD in a user agreement.</p>
<i>Article 17</i>	Article prescribes about (penalty) fee to be paid for damaging or destroying survey marks. Fee corresponds to the reconstruction cost of the mark. Optionally offender can be brought to trial.	See what is said above about this kind of penalty fees and courts’ jurisdiction in this kind of cases. It however might be possible to prescribe in the Decree that anyone who damages or destroys a survey mark is obliged to compensate repair or

		reconstruction of it.
Part IV – Final Provisions		
<i>Article 18</i>	According to the article, the NGD shall coordinate with other ministries, agencies, provinces, Vientiane Capital, districts, special regions and other relevant parties on obeying the Decree.	The provision highlights the role of NGD as leading organization responsible for coordination of issues belonging within the scope of application of the Decree.
<i>Article 19</i>	Article prescribes about entry into a force of the Decree. The Decree came into a force 16.8.2005 and repealed the old Decree No 73/PM from 1995 as well as all previously issues conflicting provisions.	<p>General provision about repealing all contradictory provisions is common but it inevitably leads to interpretative problems. As repealed provisions are not specified, basically all provisions in every prior Decree should be investigated one-by-one to define whether they are actually conflicting or does the Decree for example only supplement it.</p> <p>One must also bear in mind that a Decree can repeal only same or lower level provisions, not provisions included in laws.</p> <p>Another notable issue is the fact, that all newer Decrees have similar clause. This means that some provisions of the Decree might actually already have been repealed by another partly overlapping Decree. Therefore it is crucial to investigate also other regulation related to the scope of application of the Decree.</p>
Missing provisions		<p>As already mentioned, the Decree does not have any provisions about fees to be collected from tasks specified in the Decree. Such a provision should be included in this or another Decree (if not already existing).</p> <p>Also provisions about copyright and NGD's right to distribute data and set conditions for this should be included in the Decree. Even the sample agreement could be attached as an annex to the Decree.</p>

ANNEX 2. Comparison of Decree No 136/PM and the new Decisions of the Ministry of Home Affairs

Tasks mentioned in the Decree 136	Corresponding task in Decision about the NGD	Corresponding task in the Decision about Survey and Mapping Centre
Plays a role as a chief of staff and assistant to the government in the management, inspection of the survey, aerial photography and mapping nationwide (art 1)	Plays a role as chief of staff and assistant of the Minister of Interior and Government in the management and inspection of activities of surveying, aerial photography and mapping nationwide, as well as implement and fulfill political duties assigned by the Ministry of Interior and the Government (art 1)	The assistant engine of the Ministry of Interior and Government in implementing activities of surveying, aerial photography and mapping (art 2)
Research and propose to the Prime Minister or Government for approval the strategic plans and comprehensive plans on the activities on surveying, aerial photography and mapping (art 2.1)	Research and propose to the Minister or Government for approval the strategic and operational plans on the activities of surveying, aerial photography and mapping (art 2.1)	<p>Research and propose to the Minister of Interior and Government for the approval of strategic and operational plans on the activities of surveying aerial photography and mapping (art 4.1)</p> <p><i>Note: Strange that both agencies may propose these plans to the Ministry. The SMC should prepare proposals to the NGD.</i></p> <p>Comply with legislation; research and turn the Party's policies, socio-economic development plan of the Government and plans of the Ministry of Interior into detailed programs, projects in each period and implement them effectively (art 4.2).</p> <p><i>Note: This should belong to the NGD as the SMC implements plan of the NGD.</i></p>
Research and draft laws, legislation, regulations and policies on surveying, aerial photography and mapping for	Research and draft laws, legislation, regulations and policies on surveying, aerial photography and mapping in	

Government consideration (art 2.2)	order to propose to the Minister of Interior or Government for approval (art 2.2)	
Determine standards, criteria and technical requirements to propose to the Prime Minister for promulgation or to be promulgated by the National Geographic Department as assigned and to correctly support, monitor, supervise and inspect organizations and individuals (art 2.3)	Research to develop technical regulations to propose to the Minister of Interior or Government for promulgation or to be promulgated by the National Geographic Department as assigned including to support, monitor, supervise and inspect organizations and individuals for their correct implementation (art 2.3)	
Build physical technical, scientific and technological infrastructure to meet the growth of activities in surveying, aerial photography and mapping nationwide (art 2.4)	<p>Build physical, technical, scientific and technological infrastructure to meet the growth of activities in surveying, aerial photography and mapping nationwide (art 2.4)</p> <p>Develop national basic survey networks nationwide (art 10.3). Manage, maintain and protect national basic survey network points nationwide (art 10.5)</p> <p>Research, design and decorate national basic geographic maps (ATLAS) (art 12.2)</p>	Create coordinate plot networks, altitude and magnetic globe at different levels (art 11.1)
<p>Manage, provide information and implement activities of surveying, aerial photography and mapping to meeting the needs of economic, cultural, social, national defense, national security and scientific research activities nationwide (art 2.5).</p> <p>Develop, manage, provide information and implement actual survey, aerial photography and mapping nationwide to be in line with socio-economic development plan, national defense, national security of the Party and Government (art 2.11)</p>	<p>Manage, create database and provide national geographic information, implement basic activities of surveying, aerial photography and mapping to meeting the needs of economic development, culture, society, national defense, national security and scientific researches nationwide (art 2.5)</p> <p>Develop national basic terrain maps by surveying landscape (art 10.4). Manage, inspect and carry out the development of geographic maps by aerial photography and satellite images (art 11.4)</p> <p>Manage and maintain original films, information on aerial</p>	<p>Carry out surveying, aerial photography and mapping activities nationwide according to the plan and assignment of the National Geographic Department, Ministry of Interior and the Government of Lao PDR in each period (art 3.1)</p> <p>Carry out activities on surveying and mapping of terrain maps and specific map as assigned by the National Geographic Department, Ministry of Interior and Govern in each period (art 4.6)</p> <p>Carry out technical activities on surveying, aerial photography and mapping for projects and activities as requested by the</p>

	<p>photography, satellite images and other relevant information (art 11.3)</p> <p>Manage and maintain mapping data, figure and geographic information system maps (12.3)</p> <p>Provide information on surveying, aerial photography and mapping, vehicles and surveying equipment and create maps for line divisions within the Department, center and other sectors (art 8.2)</p>	<p>society (art 4.7)</p> <p>Implement surveying, aerial photographic and mapping projects and other activities under its duties and responsibilities (art 5.2)</p> <p>Manage technical staff on surveying and mapping activities to serve socio-economic development} national defense and national security (art 3.3)</p> <p>Design, decorate and produce maps (art 10)</p>
<p>Provide comments, present findings of researches and compile highly effective, quality scientific achievements for information and implementation on regular basis (art 2.6)</p>	<p>Propose comments, present findings of researches and compile highly effective, good quality scientific achievements for information and implementation on regular basis (art 2.6)</p> <p>Study and develop current advance technologies to serve surveying, aerial photography and mapping activities (art 9.3)</p>	<p>Research; develop science, technology and human resource to serve the Survey and Mapping Center to ensure advancement and high effectiveness (art 3.3)</p>
<p>Cooperate with foreign countries; participate in activities of international organizations in the fields of surveying, aerial photography and mapping based on the agreement of higher level (art 2.7)</p>	<p>Cooperate with foreign countries; participate in activities of international organizations in the fields of surveying, aerial photography and mapping based on the agreement of higher level (art 2.7)</p>	
<p>Manage and register enterprises, mapping survey units and technical staff employed by these organizations, including registering surveying equipment, aerial photography and mapping tools nationwide (art 2.8.)</p>	<p>Manage and register mapping surveying professional and entities, surveying equipment and technical experts employed by these organizations, including inspect technical accuracy in surveying, aerial photography and mapping (art 2.8)</p>	
<p>Carry out technical inspection on surveying, aerial photography and mapping enterprises as well assist the government in macro-management in these activities (art 2.10)</p>		
<p>Responsible for the management and inspection of the</p>		<p>Issue decisions, notices, instructions to disseminate</p>

implementation of laws, decrees, decisions, regulations and policies on surveying, aerial photography and mapping nationwide (art 2.9)		policies, legislation and measures related to the role and duties of the Survey and Mapping Center (art 5.1)
Research and propose to the Minister to the Prime Minister's Office, supervising the National Geographic Department to appoint personnel to the posts within the National Geographic Department based on the requirements, criteria and actual situations of the tasks defined by the Government (art 2.12)	Research and propose to the Minister of Interior the appointment, promotion, relocation, training, complement, grant of bonuses, disciplinary actions and other benefits to personnel within the Department (art 2.11)	
Manage, utilize personnel -civil servants within the Department; propose to higher level for consideration the promotion, relocation, education, reward, disciplinary actions, benefits to personnel within the Department (art 2.13)		Manage personnel of the Center, allocate personnel according to their competency, upgrade capacity of the personnel-civil servants in technical, political and economic management areas; research and propose to the Minister of Interior for the improvement, organization structure reshuffle, promotion, reward, bonuses, pension, disciplinary actions and other benefits (art 4.3)
Provide comments or advice to the Government or Prime Minister on surveying, aerial photography and mapping in order to provide policies, strategic plans for socioeconomic development (art 3.1)	Provide comments or advice to the Minister of Interior or Government on surveying, aerial photography and mapping (art 3.1)	
Participate in the surveys of border demarcations between countries and join relevant parties to determine joint-border line between domestic zones (art 3.2)	<p>Coordinate with relevant parties to implement activities related to national border and joining zone activities (art 2.9)</p> <p>Join other relevant parties in surveying international border demarcation; create international border line and joining zone maps (art 3.2)</p> <p>Manage original information on surveying, aerial photography, international boundary and joining zone maps (art 2.10)</p>	

	Study and analyze technical documents as the basis for between-country-border and joining zone activities. Manage and inspect the accuracy of indicating between-country-border lines and joining zones of the maps (art 13)	
Organize technical seminars on surveying, aerial photography and mapping (art 3.3)	Organize dissemination meetings, seminars on laws, regulations and techniques on surveying, aerial photography and mapping (art 3.3) and upgrade capacity of personnel within the Department and other relevant organizations (art 9.3)	Organize technical meetings, seminars on surveying, aerial photography and mapping activities (art 5.4)
Represent the Government for relations with foreign countries and international organizations as defined by regulations in order to grab assistance in finance, equipment, capacity building and advance science and technologies to serve the activities of surveying, aerial photography and mapping nationwide (art 3.4)	Cooperate with foreign countries and international organizations as assigned by the Minister of Interior or Government to grab assistance in terms of equipment, capacity building and advance science and techniques to operate surveying, aerial photographic and mapping activities throughout the country (art 3.4)	
Research and propose to the Government or Prime Minister the revocation of decisions, regulations, instructions and other policies on surveying, aerial photography and mapping that are not consistent with situations or contradicted with the Party guidelines and laws and regulations of the Government (art 3.5)	Propose to the Minister of Interior or Government for consideration the amendment or revocation of legislation, regulations in the areas of surveying, aerial photography and mapping that are not consistent with situations or contradicted with the Party's guidelines and laws and regulations of the Government (art 3.5)	
Issue licenses, technical accuracy certificates on the implementation of surveying, aerial photographic and mapping activities of the organizations nationwide (art 3.6)	Issue licenses to operate surveying, aerial photographic and mapping activities; inspect and issue technical accuracy certificates on the implementation of those activities (art 3.6) Carry out technical inspection and certify production quality on surveying, aerial photography and mapping nationwide (art	

	9.4)	
	Manage, monitor and inspect techniques on taking aerial photography of sectors, organizations that operate taking aerial photography nationwide (art 11.2).	
		Inspect, renovate, maintain, repair and issue quality certificates for surveying and mapping equipment (art 4.5) Inspect technical standards, maintain and repair surveying and mapping equipment (art 9.2)
	Provide vehicles and surveying equipment and create maps for line divisions within the Department, center and other sectors (art 8.2) <i>Note: Shouldn't the SMC carry out the technical work and therefore have the equipment.</i>	Provide consultancy services on surveying and surveying equipment, and mapping nationwide (art 9.1 and 11.4)
		Provide flights for aerial photography to serve surveying and mapping activities (art 10.3)
Propose to the Government for consideration the suspension of implementation of activities that are inconsistent with technical regulations and the importation of survey, aerial photographic and mapping equipment that are carried out without an approval from the National Geographic Department (art 3.7)	Propose to the Minister of Interior or Government to consider the suspension of the implementation of activities that are inconsistent with technical regulations, the import -export of information and equipment for surveying, aerial photographic and mapping activities that are not consistent with laws and regulations, technical regulations promulgated by the Government. (art 3.7)	
Propose rewards, complements to individuals and legal entities who comply with the laws, decrees, decisions and technical regulations officially promulgated by the Government in the areas of survey, aerial photography and mapping as	Propose the reward, complement to individuals and legal entities who comply with the laws, decrees, decisions and technical regulations that are officially promulgated by the Minister of Interior or Government in the areas of	

well as to sue, penalize and take actions against individuals and legal entities that violate the officially promulgated laws, decrees, notices, decision and technical regulations (art 3.8)	surveying, aerial photography and mapping as well as to sue, penalize and take actions against individuals and legal entities who violate the officially promulgated laws, decrees, notices, decision and technical regulations (art 3.8)	
Propose budget plans; manage and utilize budget, equipment provided to the Department (art 3.9)	Propose budget plans; manage and utilize budget, equipment provided by the Ministry of Interior or the Government (art 3.9)	Manage budget, vehicles, assets, technical equipment used in the operations of the Survey and Mapping Center (art 4.4)
Implement other rights and duties as assigned by the Prime Minister or Minister who supervises geographic activities (art 3.10)	Implement other rights and duties as assigned by the Minister of Interior or the Government (art 3.10)	
		<p>Coordinate, cooperate and sign agreements with various parties as assigned by the Minister of Interior or Government (art 5.3)</p> <p><i>Note: this does not contain a reference to assignment of the NGD.</i></p>
		<p>Coordinate and Cooperate with different relevant parties, carry out marketing duties in managing, providing information on surveying, aerial photographs and mapping (art 8.3).</p> <p><i>Note: Providing information belongs also to duties of NGD.</i></p>

ANNEX 3. Weekly Activities of the Mission

September 2011

Week	Main Activities	Meetings, etc.
36	<ul style="list-style-type: none"> - Planning the mission, discussions with other advisors and staff of NGD. - Reviewing the inception report, progress reports, steering committee minutes and other documents related to the project. - Preparing a workplan for the mission. - Reviewing and preparing a commentary about Decree No 255/PM. 	<p>Arrival on 3.9.</p> <p>6.9. Meeting with the Director General of NGD</p>
37	<ul style="list-style-type: none"> - Analyzing recent and planned organizational changes and their effect from legal point of view. - Clarifying the present mandate of NGD. - Presenting preliminary results of the commentary on Decree No 255/PM to the counterparts. 	<p>12.9. Meeting with staff of the NGD</p> <p>16.9. Meeting with,, Dorith von Behaim, CTA of Land Management and Registration Project.</p>
38	<ul style="list-style-type: none"> - Continue to analyze organizational changes and mandate of the NGD. Reviewing and commenting translations of new draft Decisions about organization. - Discussions with the counterparts about the present and future mandate of the NGD. - Preparing a presentation the Steering Committee meeting. Participating in the meeting. 	<p>19.9. Meeting with staff of NGD about activities and mandate of NGD.</p> <p>20.9. Meeting with Chantaviphone Inthavong, Director General of LNRRIC (NLMA).</p> <p>22.9. Steering Committee Meeting</p>
39	<ul style="list-style-type: none"> - Finalizing the analyze of new decisions. - Preparing a questionnaire about intended mandates of the NGD and SMC. Presenting the questionnaire to counterparts. - Reviewing legal documents related to NLMA and land registration from the NGD point of view. - Updating the commentary of the Decree No 255/PM basing on counterparts' comments. 	<p>29.9. Meeting with counterparts about commentary of the Decree No 255/PM</p>

October 2011

Week	Main Activities	Meetings, etc.
40	<ul style="list-style-type: none"> - Preparing a summary of results of the missions so far and planning the rest of mission. - Discussions about the questionnaire with other advisors. - Reviewing the project document from new organization point of view. - Beginning preparation of new regulation to replace the Decree No 255/PM. Defining the scope of application, the main content, and basic principles. 	
41 <i>1 public holiday</i>	<ul style="list-style-type: none"> - Continue preparation of the Decree. - Preparing a proposal for the main principles for further discussion. Discussions about these principles with other advisors. - Beginning to prepare proposal for structure and main content of the Decree. 	11.10 Extended CTA-meeting of Finnish funded projects
42	<ul style="list-style-type: none"> - Discussions with the advisors and counterparts about the main principles of the Decree. - Finalizing a proposal for the structure and main content of the Decree. Discussions about it with the other advisors. Presenting the updated version to the counterparts. - Beginning to draft provisions of the Decree. 	
43	<ul style="list-style-type: none"> - Discussions about proposal for structure and main content of the Decree with the counterparts, directors and staff of the NGD. - Continue drafting of the provisions, presenting the final draft of the Decree to the counterparts. - Preparing the mission report. 	25.10. Meeting with the directors and staff of the NGD about the structure and main content of the new Decree
44 <i>1 workday</i>	<ul style="list-style-type: none"> - Finalizing the mission report, handing it over. 	31.10 End of the Mission

**DECREE (OF THE GOVERNMENT) ON
SURVEYING, AERIAL PHOTOGRAPHY, AND MAPPING ACTIVITIES
IN THE TERRITORY OF LAO PDR**

Draft for discussions and further preparation, 31.10.2011

Part I. General Provisions

Article 1. Scope of Application

This Decree applies to all surveying, aerial photography, and mapping activities in the territory of Lao PDR.

Article 2. General Objectives

This Decree is issued to ensure unity, quality, and efficiency in surveying, aerial photography and mapping, to promote efficient management and use of geographic data, and to promote socio-economic growth and environmental sustainability in accordance with policies and development and strategic plans of the Government.

Article 3. Definitions and Interpretation

In this Decree:

Aerial Photography means recording data of the ground from an elevated position by an aircraft or satellite and processing this data into plans and maps.

GIS means Geographic Information System.

GPS means Global Positioning System.

Surveying means a science of making essential measurements to determine accurate locations of objects by geodetic and photogrammetric methods using diverse technologies including GPS and GIS for preparing databases, plans, and maps.

Topographic Map means a map displaying details of topographic features and other map elements.

Article 4. Organization

The National Geographic Department, abbreviation “NGD”, is the supervisory body of the Government on surveying, aerial photography, and mapping activities nationwide. It is in charge of establishment of the geographic information depository [and/as part of] the national spatial data infrastructure.

The Survey and Mapping Center, abbreviation “SMC”, is the assistant agency of the Government in implementing activities of surveying, aerial photography, and mapping. It provides services to the Government and other parties in accordance with this Decree.

Article 5. GIS Coordinating Committee

The GIS Coordinating Committee is established to coordinate and standardize Geographic Information and to support establishment of the national spatial data infrastructure. The National Geographic Department shall facilitate the work of the Committee.

The Director General of the National Geographic Department shall act as the chairman of the Committee. Other members shall be nominated by the Prime Minister from all Ministries using or producing Geographic Information.

Article 6. Policies, Technical Regulations, and Standards

The NGD shall prepare proposal for policies, plans and amendments to the legislation to the Ministry of Home Affairs. The NGD shall prepare proposals for technical regulations and instructions to be followed in implementation of surveying and mapping activities. It shall work together with the Department of Intellectual Property Standardization and Metrology in preparation and confirmation of standards to be used in these activities.

Part II. National Geographic Information Repository

Article 7. Value and Management of Data

Surveying, aerial photography and mapping data is national asset important for the national security, economic development, society, culture, built and natural environment, and science. The data shall be properly managed, shared, and used efficiently.

Article 8. Database

The NGD is responsible for developing, establishing, and maintaining a database in which all data from surveying, aerial photography, and mapping activities of the NGD and SMC shall be collected. The database shall also contain geographic information prepared by other Ministries and Government Agencies.

Article 9. Submitting Information and Data to the Repository

All Ministries, Government Agencies, and private companies are obliged to submit important geographic information and data to the NGD to be included in the database.

Article 10. Access to Information and Data

Everybody has right to get information and data from the database in accordance with provisions of this Decree.

Part III. Conduction of Surveying, Aerial Photography and Mapping Activities

Article 11. Permit for Activities

Government approval is required for all conduction of aerial photography, topographical mapping, and higher level geodetic surveys excluding activities authorized in Laws or Government Decrees and activities related to the national security.

Application for approval shall be submitted to the NGD for consideration and preparation of proposal to the Government.

Activities shall be conducted in accordance with conditions of the permit and provisions of this Decree and other relevant regulation.

Article 12. Registration

All private surveying companies, their technical experts, and professional surveying, aerial photography and mapping equipment shall be registered in the NGD. The NGD shall keep a list of them.

Article 13. Technical Inspection

Professional surveying and mapping equipment shall be inspected by the SMC. The SMC shall issue a quality certificate for inspected and approved equipment.

Article 14. Coordinate System

Coordinate system confirmed by the Government shall be used in all surveying, aerial photography, and mapping activities.

Article 15. Aerial Photography

Technician of the NGD shall participate in conduction of aerial photography and photo processing. If the NGD considers necessary for national security or national interests, it shall invite also other authorities to participate.

Article 16. Quality Certification

The NGD shall upon requests carry out technical inspection and certify quality of surveying, aerial photography, and mapping activities and products.

Article 17. Compliance Certificate

The NGD may issue a compliance certificate to prove that work has been conducted in accordance with permit, this Decree, and other relevant regulation.

Article 18. Handing Over the Results

After completion, copy of data resulting from professional surveying, aerial photography, and mapping activity, demarcation of administrative boundaries, and topographic maps shall be handed over to the NGD.

Article 19. Import and Export of Equipment

Import and export of professional surveying, aerial photography, and mapping equipment requires an approval from the NGD.

Article 20. Export of Data and Products

It is prohibited to export data and products resulting from professional surveying, aerial photography, and mapping activities if this contradicts with national security or national interests.

Part IV. Operations of the NGD and SMC

Article 21. Operational Plan of the SMC

The SMC and NGD prepare together an annual operational plan in order to allocate resources of the SMC.

<i>Option 1:</i> The plan shall indicate all known Government and private activities to be conducted by the SMC.	<i>Option 2:</i> The plan shall indicate resources that the SMC is obliged to allocate for assignments of the NGD and Government
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The Plan shall be approved by the Ministry of Home Affairs. The SMC shall follow the approved plan in its operations.

The Ministry of Home Affairs may amend the approved Plan if it is necessary to re-allocate resources of the SMC.

Article 22. Specific Assignments

<i>Option 1:</i> The NGD may give the SMC assignments outside of the Operational Plan within available resources of the SMC. The NGD may give the SMC assignments outside of the plan within available resources of the SMC.	<i>Option 2:</i> The NGD may give assignments to the SMC in accordance with the Operation Plan. Assignments outside of the Plan shall be negotiated with the SMC.
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Article 23. Using Services of the NGD

The NGD provides surveying, aerial photography, and mapping services to Ministries, Government Agencies and other public entities. The NGD may request the SMC to assist in implementation of required activities.

Article 24. Using Services of SMC

The SMC provides surveying, aerial photography, and mapping services to institutions, juridical entities, local and international organizations, and other private parties in accordance with the operational plan and assignments of the NGD.

Services may be requested directly from the SMC.

<i>Option 1:</i> The SMC shall submit the request together with estimation of required resources, calculation of costs, and calculation of fees to the NGD for approval. If the NGD considers that the SMC has resources to conduct, it shall approve the request.	<i>Option 2:</i> If the requested service might affect the SMC's capacity to conduct assignments of the NGD or Government, the SMC shall submit the request together with estimation of required resources to the NGD for approval. If the NGD considers that the SMC has resources to conduct, it shall approve the request. After approval the SMC may make a quotation and sign an agreement with the client.	<i>Option 3:</i> If the requested service requires significant resources, the SMC shall submit the request together with estimation of required resources to the NGD for approval. If the NGD considers that the SMC has resources to conduct, it shall approve the request. After approval the SMC may make a quotation and sign an agreement with the client.
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Article 25. Completion

After completion, the SMC shall send results of work assigned by the NGD to the NGD for inspection and verification. Results of other works the SMC may deliver directly to the client, but shall send the copies referred to in article 18 to the NGD.

Article 26. Training

The NGD and SMC provide training on surveying, aerial photography, and mapping upon requests.

Article 27 Production of Orthophotos

The SMC shall maintain and operate a modern digital orthophoto production and digital mapping line.

Article 28. Production of Maps

The NGD is responsible for production and updating of topographic maps. It can use services of the SMC in production and updating.

Article 29. Geodetic Networks

The NGD has an overall responsibility on establishment, reviewing and maintaining geodetic networks. Technical work shall be done by the SMC in accordance with the Operational Plan.

Part V. Distribution and Use of Data and Products

Article 30. Surveying, Aerial Photography and Mapping Products

The NGD is in charge of selling products prepared by the NGD and products prepared by the SMC for the NGD. The NGD may organize the selling through the SMC or other distributor.

Article 31. Data Distribution from the Database

The NGD is in charge of distribution of data from the database. The NGD may use services of the SMC in organizing the distribution.

Article 32. Fees

[The Responsible Government Body] shall define fees for services of the NGD and SMC, and products and data to be purchased from the NDG basing on a proposal of the NGD.

Article 33. Copyright

The NGD has a copyright of all products and data prepared by itself or by the SMC for the NGD in accordance with the Law on Intellectual Property. Purchaser gets only limited rights to use them for the purposes which they are purchased. An agreement to specify conditions for use shall be made for each delivery of data. Sample of the agreement is attached as an annex to this Decree.

Part VI. Miscellaneous Provisions

Article 34. Protection of Survey Marks

It is prohibited to destroy or damage survey marks. The NGD shall be informed by construction and other activities which might affect them at least 30 days beforehand. The NGD may prohibit or stop any work that might damage or destroy the marks.

Article 35. Disciplinary Actions

Anyone who:

- Conducts aerial photography, topographical mapping, or higher level geodetic surveys without a permit of the Government, or against conditions of the permit or regulation of this Decree;
- Neglects to register a private surveying company;
- Imports or exports professional surveying, aerial photography, and mapping equipment without an approval of the NGD;
- Compromises national security or national interests by exporting data or products resulting from professional surveying, aerial photography, and mapping activities;
- Destroys or damages a survey mark; or
- Violates copyrights of the NGD by using products or data contrary to an agreement made with the NGD;

shall be fined (in accordance with relevant provisions of law) and is obliged to compensate caused damages.

Part 8. Final Provisions

Article 36. *Coordination and Dissemination*

The NGD and SMC are responsible for dissemination of the Decree. The NGD is responsible for coordination with other Ministries and agencies in implementation of this Decree.

Article 37. *Entry into a Force*

This Decree replaces the Decree on Surveying, Aerial Photography, and Mapping Activities in the Territory of Lao PDR, No 255/PM, dated 16 August 2005 and is effective from the date of signature.

Minutes of Meeting: GIS-committee

Note! Most of the meeting discussions were in Lao language – Minutes of meeting do not have yet the NGD comments or corrections

Meeting to establish the committee (has been inactive since 2003). All the members received the committee tasks (previous meeting)

1. Meeting was started with a welcome speech by Dr. Thongchan Manixay (the Deputy Minister of Ministry of Home Affairs)

The main points of his speech:

- The background for the committee (history of the committee)
- Importance of getting this activity funded – temporarily funded by SNGS

2. Introduction of the participants

- Mr. Buoasoth Souvannakhounmane (Acting director of NGD)
- Dr. Khnogkham Suligna (Acting Director SMC)
- Mrs. Sikhay Siribounma (Director of Science and technology division)
- Mrs. Noun Phommixay (Deputy director of cartography)
- Dr. Ammala Keonuchan (Deputy director of Science and technology division)
- Mr. Sami Janne (GIS advisor, SNGS)
- Mr. Inpong Homsombath (Head of Geology and Mine Information Center)
- Mr. Vongsack Maleivanh (Chief of Infrastructure Section/Ministry of Public Work and Transportation)
- Dt. Savathdee Kingkeo (Head of Statics Department, Ministry of Public Health)
- Prof. Bounmark Inthiphone (Vice Dean of Faculty of Science/National University of Lao PDR (NUOL))
- Mr. Kongthet Sittivongsa (IT/GIS of Department of Environment, Research Institute of Water Resources, Ministry of Natural Resources and Environment (MONRE))

- Mr. Virasith Phommovanh, (Acting Director of Remote Sensing Center, Research Institute of Water Resources, MONRE)
- Mr. Bouakeo Chantepha, Engineer, (Department of Roads/Ministry of Transportation and Communication)
- Mr. Phounsap, (GIS Technician, Research Center of Agricultural Land Use, Ministry of Agriculture and Forestry (MAF))
- Mr. Phaylin Bouakeo, (GIS Data technician (Department of Water, MONRE))

3. Mr. Sami Janne: Introduction presentation to the GIS committee and structure for the meeting;

Discussion topics:

- Tasks of the committee, frequency of the meetings, work plan for year 2012 and members of the committee

After the presentation he gave the floor for the participants

4. Discussion:

Dr. Kongkham: Suggested to improve the committee by creating two level groups (technical/director level) with separate meetings – technical meeting will prepare and director meeting will decide

- Meeting should be arranged 3-4 times a year.
- He also suggested that secretary of the committee should not only be from NGD staff; 2 from NGD + 2 from other ministries/organizations.

Dr. Thongchanh: A new GIS-committee chairman should be selected (discuss next meeting); Director General of NGD Mr. Buoasoth proposed

Prof. Bounma, NOUL. 1. Supported to continue the committee; 2. Standards of data (GIS) software.etc,.. should be one task of the committee; 3. Budget for the committee is important- should be discussed 4. Name standards - geonames-village; rivers etc. (NGD done already). 5. Technical words; to Lao language (e.g. GIS) (editor idea: working group?)- Example Lao version for GIS different NGD and other sectors (NOUL, etc.,)

Mr. Inpong Homsombath, Head of Geology and Mine Information

Center: Wanted to confirm that GIS committee member (old) moved away- and new member should be named (from their organization). Technical documents of GIS needed and should be distributed e.g. coordinate system same (this actually done already) other like GIS guidelines a GIS etc..; program/software not needed to be standard.

Dr. Savathdee Kingkeo/Head of Statistic Department/Ministry of Public Health: Using Arcview, MapInfo, MapLao/ (translated version? Check!) supported by UNDP (for collecting data)

RSC-Virasith/MONRE: Agreed about committee roles, tasks; agree with professor – translation of GIS related words; University responsible of translation?

- GIS-Theory/techniques – less theory, step by step (guidelines/document) should be prepared
- Legend- of the map –from mining; land; ministries etc... different every organization – should be standardized?

Mr. Bouakeo/Department of Roads and Bridge/Ministry of Transportation and Communication: Do not have a problem with coordinate system because participated on NGD workshop

Mr. Bouasoth/NGD: proposed other sector to send name(s) of the persons to join the committee (before next meeting)

Other comments: 1) Only NGD do (topographic?) maps 2) a lot overlapping work (in Lao PDR) 3) budget from government for committee needed

5. It was decided that

- Based on discussions NGD/SNGS will prepare new list of tasks and work plan for year 2012 (presented in the next meeting)
- Frequency of meetings will be four times a year (approximately every three months)
- All the members will provide the representative names (actual and deputy), who will participate the committee

Dr. Thongchanh/Deputy Minister of Ministry of Home Affairs

Summarized the meeting (NOT VERIFIED – IN LAO)

1. Words translate Lao (standards) important NGD/NOUL (working group) also geo names.
2. Data sharing-committee next meeting (editor: working group)
3. Secretary- improve the committee, how to earn money to committee. Committee work one way-sale some data.
4. Propose NGD to do mandate the role-agreement from the ministry, include private sector as well.