CRITICAL ISSUES REGARDING TO THE DEVELOPMENT OF EFFICIENT NATIONAL LAND INFORMATION SYSTEM IN MONGOLIA

Bagadai NARANCHIMEG, Mongolia

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National land information system, NLIS
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SUMMARY

The state policy on land is a part of "National development Concept of Mongolia", based on state independence and is a guarantee of national security and a key of Government policy is the reform of the land sector and the privatization of land. This is a prominent, and indeed historic, policy with far reaching social and economic implications. The policy is designed to support economic development and the establishment of a mature land and real property market. Privatization of land is a major component of Government policy, although this will be for commercial and agricultural land only and not for pastureland.

To meet these policy objectives under the Land law of 2002 and consistent with land reform policy, the Government created the Administration of Land Affairs, Geodesy and Cartography (ALAGaC) in January 2003. ALAGaC is still very new and needs to form a clear view of the purposes and administrative limitations of the different land management functions in Mongolia. It is widely recognized that the Land package laws in need of revision regarding to reorganization and development NLIS as well.

I have tried to describe what we achieve during last few years in order to develop NLIS and in which stage now compare with year of 1999. Mostly I will concentrate on organizational issues, which is biggest problem we had many years as other developing country and also legal issues as well regarding to the development of NLIS in Mongolia. .

Whilst the primary focus of the NLIS is to support the Land Reform programme and emerging land market, particularly in Ulaanbaatar, it should also provide a communication backbone for land information access and exchange across ALAGaC's divisions and between ALAGaC and related Agencies.

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1. INTRODUCTION

Mongolia occupies an ecological transition zone in Central Asia where the Siberian taiga forest, Central Asian steppe, the Altai Mountains and the Gobi desert meet. Mongolia has a land area of 1.567 million square km with an estimated population of 3.0 million people. In the last 70 years significant change took place in term of population migration, and more than 50 percent of the population lived in the city.

Mongolia is now in a transition period to open democratic society and free market economy. During this transition period we are been facing with a demand to intensify land reform policy by revision of legal documents on land relations in harmonizing with directions of socio-economic development strategy and policy. Land rights and titles will be established through this reform. Human security will be enhanced through the capitalization of the population, titles to land, and creation of productive assets that will form a base for the further development of credit and financial markets.

The Mongolian government is a centralized system and has a hierarchical structure and mainly national, provincial and municipal level. Administratively Mongolia is divided into 21 Aimags (provinces), which are further divided into a total of 331 Soums (municipality). Ulaanbaatar City has six Districts and a further 3 remote Districts some distance from the main city.

The infrastructure in many soums is basic. Many are isolated, have limited electrical power, unreliable communications links and difficult road access particularly in winter, only 145 soums have permanent power supply.

Widespread use of computing technology in Mongolia dates from the second half of the 1980. The first powerful GIS and image processing systems were installed in 1994 at the Ministry of Environment and the Information Centre of the Academy of Science. Since the 1990's the Government has recognized the importance of information technology (IT) development in Mongolia and has taken several important steps towards establishing a suitable legal environment, improving technical capacity and adopting modern standards.

Within the Land reform policy development of parcel based Land information system is biggest issue. The establishment of Land information system in Mongolia is a complicate matter, where many different factors have to be taken into consideration. The proposed NLIS is part of an ongoing project to strengthen Cadastral Survey and Land Registration funded by loan from ADB.

2. CURRENT SITUATION

2.1 Policy challenge and land reform

The government and the Parliament of Mongolia have given high priority attention to strengthening land reform policy, to extending rights of land, the creating legal conditions that give guarantees to citizens, economic entities and organizations to possess and use land, as well attract foreign investment.

New Land Law has been approved by parliament in 7 June 2002. The same time in 23 June Land Privatization Law passed through Parliament. For Mongolians land

privatization is a very new concept; however, Mongolian parliament approved the Land Privatization Law so it was big historical event. Without land privatization it is impossible to make land reform. The existing land related laws described in Table 2 and implementation of the system will be coordinated in connection with rules and guidelines in relation to laws of Mongolia, but insufficient legislation to support the implementation of NLIS in Mongolia.

Table 2. Land related laws

No	*Name of laws*	*Date*
1	Constitution of Mongolia	1992
2	Civil code	2002
3	Land law of Mongolia	1995, revised 2002
4	Law on Land Privatization to Mongolian citizens (Law on allocation of land to Mongolian citizens for ownership)	2002
5	Law on State registration rights to immovable property and other rights related to it	1995, revised 2003
6	Land fee and payment law	1997
7	Law on cadastral survey and land cadastre	1999
8	Law on immovable property tax	2000

The Unified land territory shall be classified based on the general purpose of its use and the need for its use as follows (from Land Law Article 9):

- Agricultural land
- Land of cities, villages and other urban settlements
- Land under road and networks
- Land with forest resources
- Land with water resources
- Land for special purpose

The state owned land might be given for possession with a license to Mongolian citizens, companies and organization for duration of 15- 60 years. The possession licence may be extended for not longer than 40 years at a time (from Land Law Article 30).

In article 6 of the new Constitution of Mongolia the following is stated, *"Land other that that owned by citizens of Mongolia, is the property of the State. Only citizens of Mongolia may own land, other than pasture or common use land"*. Estimated land areas that could be owned by citizens of Mongolia, it is only 0.8% of the total territory of Mongolia (Table 3). Mongolian citizens receiving land can even get ownership rights where they can live with buildings and construction all together. This means provision for actions such as: to sell, mortgage, inherit and accept as security and making payments are allowed (ITC 1999).

Table 3. Estimated land areas that could be owned by citizens of Mongolia

No	Type of land	Area (hectare)
1	Cropland	1.226.800
2	Land in cities, villages, settlement areas of that: - Capital city - Other cities and villages, settlement areas	32.924 7.040 25.884
3	Total	1.259.720

Land shall be allocated to Mongolian citizens for the following purposes (Land privatization law Article 4):

- for family purpose
- for commercial purpose

At the moment only Mongolian citizens may own land even free of charge. Not even partnership composed entirely of Mongolian citizens may own land. Neither companies nor other legal entities, such as for-profit or non-profit entities, nor non-Mongolian or business entities with full or partially foreign investment, are permitted to own land (TA project, ADB). Regarding to the implementation of Privatization Law Government made a decision to finish up privatization process for family purpose within 2 years. But privatization process was very slowly and was a demand to extend the duration. The result within 2 years we succeeded to privatize land for family purpose going 45% in provincial level and 80% in Capital city.

The result of much good management for short time, land privatization has started successfully, such as advertisements, development of legal environment, improvement of human capacity, professional methodical arrangements for local land offices etc.

In order to intensify land privatization Government has approved related legislations, methodologies, and main strategies. Moreover, once Agency started to work as a regulating agency, it shows Mongolian parliament and government given big support for land reform and they understand their role to intensify land reform.

Within the framework of implementation of Land Law, Law of Land allocation to Mongolian citizens for ownership and 28, 37 Parliament resolutions in order to intensify land reform policy we have facing following difficulties:

- To define real price and valuation for land
- To establish land transfer organization regarding to land action
- How to make concession agreements and how to use land through concession agreement for foreigners is not clear
- To develop National Land Information System and principles
- To develop basic research in geodesy science
- To define land property tax
- Reorganization regarding the new regulating agency at different administrative levels
- Training and human capacity, particularly at the local level
- Lack of survey and geodetic equipment at the local level
- To improve the land administration and legal environment study on experiences of other countries

In addition to these difficulties there is a significant number of conflicts and inconsistency between the laws and definitions of the laws. These appear to have originated from a continental European source, and they have not harmonized entirely one with another. In order to solve all these problems related to land laws Minister of Urban and Contraction created working group on “To renew and make amendments to the land package law“ by end August 2005.

Also there was an obvious need to set up clear legal basis for arranging a National information service concerning real estate and other units of land as well as to secure the updating and quality improvement of the information.

2.2 Institutional/organizational issue, Administration of Land Affairs Geodesy and Cartography (ALAGaC)

Institutional problems were among the most difficult to resolve in the establishment and maintenance of NLIS in Mongolia.

The Mongolian government is a centralized system and has a hierarchical structure and mainly national, provincial and municipal level. There are three main ministries have been involved in the implementation of the Land information system: the Ministry of Nature and Environment (MNE), the Ministry of Infrastructure Development (MID) and the Ministry of Justice (MOJ) /Figure 1, ITC 1999/. As we can see from the figure we had a complicated organizational set up.

Beginning of 2002 in order to implement new Land law and Land privatization law Government made a decision to improve land related organizational structure. The Agency of Land Affairs, Geodesy and Cartography were established according to the Decree No162 of the Government of Mongolia dated August 14, 2002. There are considerable advantages in having these functions administered by the same agency. For example, all ownership, possession and use registration require knowledge of the area of ground (the parcel and building) to which the rights refer this requiring access to and linkage with cadastral maps and plans.

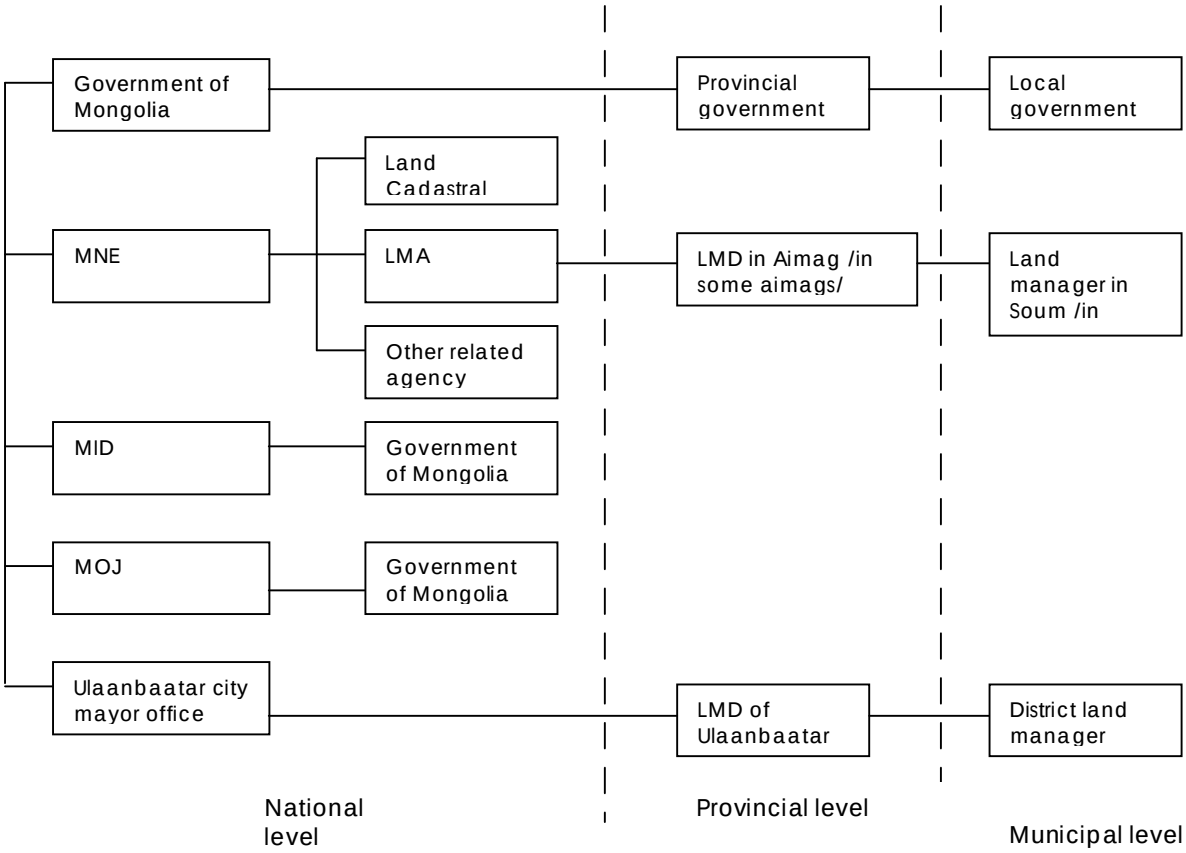

Figure 1. Organizational set-up of Land related activities in Mongolia

The organizational framework of the new Agency is shown in Figure 2. The Agency is now the main governmental Regulatory Agency in land administration and real property registration. ALAGaC has representatives in every corner of Mongolia, with over 101 full-time employees at the head office in Ulaanbaatar and consists of 2 main departments and 8 divisions as shown in Figure 2. The agency has been working under direct supervision of Prime Minister (Mongolian Government). Main duties of new agency to manage activities to implement the Land Law, Geodetic and Cartographic Law and Real Estate Registration Law and other relevant regulations, and support policy and directions of the Mongolian government in this sphere. If we compare two figures, we can see big difference between them.

The main goal of ALAGaC is to plan and to map the land resources of Mongolia and to affirm the legal rights of citizens to own. Possess and use real estate and register to it. The current main objectives (long term strategies) of the Agency are:

- To support the establishment of working land and real property market
- Successful completion of land privatization
- Establishment of National Land Information System (NLIS)

Implementation of the NLIS will, therefore be undertaken against a background of the newly formed Agency with ongoing organizational change, procedural and technical development.

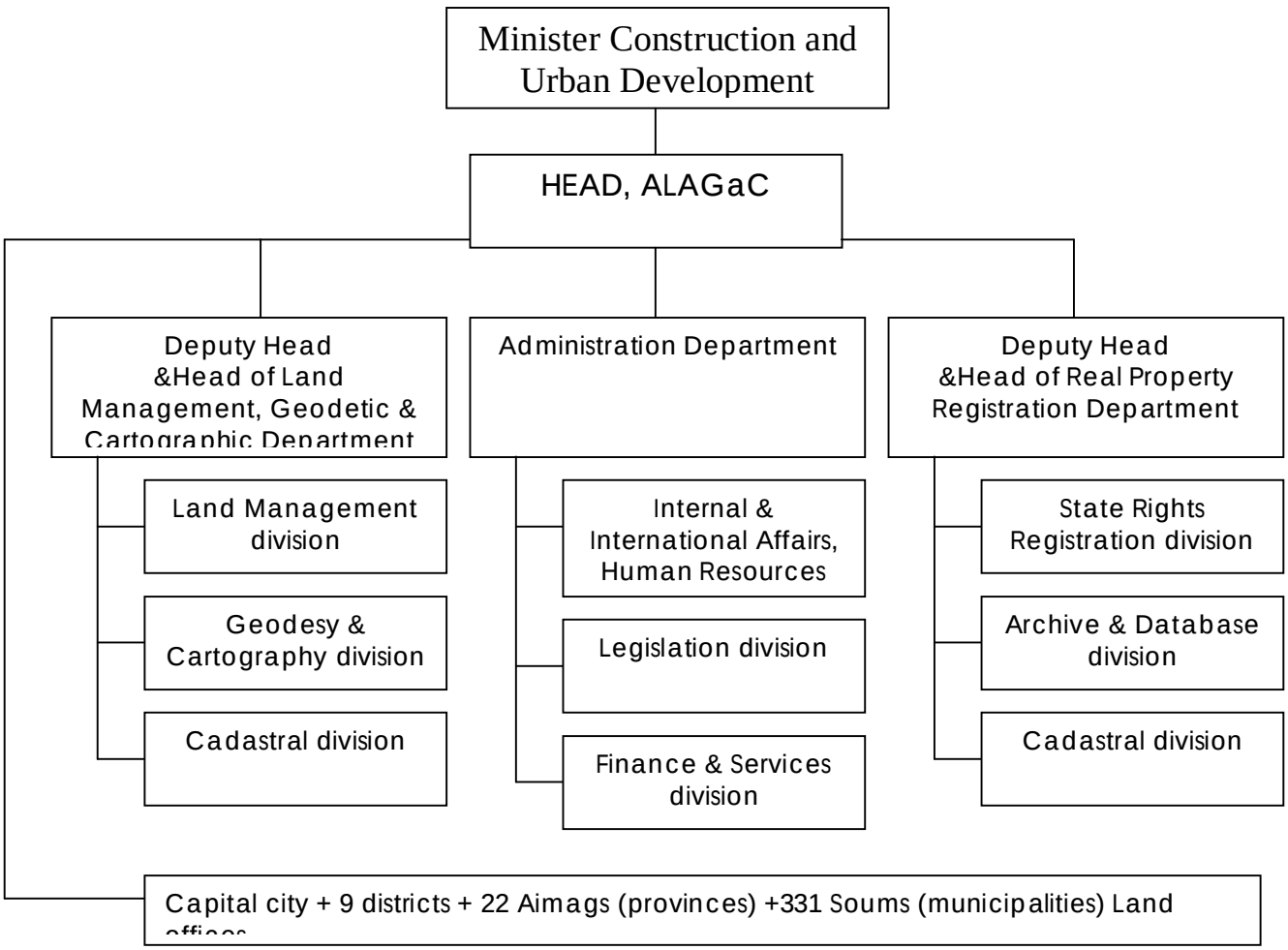

Figure 2. New organizational set-up, ALAGaC

Preparatory work for implementation of new IT systems as part of the NLIS, or expansion/improvement of existing systems within the ALAGaC will necessarily require reappraisal of the existing digital an paper procedures. The increased use of IT generally requires greater precision in standardization, documentation and workflows than some of those currently in operation

Since the purpose of the NLIS project is draw together and rationalize the key functions of the Agency implementation of database technologies will provide opportunities and a focus to simplify those procedures and activities that are common to several functions/divisions of ALAGaC. Similarly, the application of Geographical Information Systems (GIS) technology draws together the mapping and text based functions, especially in title registration where there is some overlap between the functions of the State registration department and Cadastre (TA project report).

2.3 Related on going programmes in the land sector

To date Mongolia has received assistance from a number of donor agencies relating to land programmes, including:

- Asian Development Bank, Cadastral survey and Land registration loan project
- Germany, GTZ, Development of fiscal cadastre in Mongolia
- Sweden, SIDA, Human capacity building project
- UNDP, Biodiversity project
- Korea, Research Institute fir Human Settlements

ADB loan project is most important, biggest programme in relation to the development of NLIS, as the NLIS being developed within the context of this project. I will describe about this project in detail below.

3. CADASTRAL SURVEY AND LAND REGISTRATION PROJECT, ADB

3.1 Objective and Scope of the project

The project objective is to create an institutional environment for the efficient issuance and administration of property and land lease certificates and for more efficient collection of land fee payments and property taxes, for urban and agricultural development, and for the operation of a private property market. As such, the project will carry out systematic cadastral survey and will establish an NLIS, based on up-to-date data. The project has two components:

- Component A, Cadastral survey
- Component B, Design and establishment of the NLIS

The total area covered by the project is about 3 million ha, covering settlement (urban) land areas and farmland (crop and incentive livestock farms, and livestock winter shelter sites). This constitutes about 2% of Mongolia's territory and does not include pastureland.

However, component A started their activities from April 2001 and component B started their activities beginning of January 2004. Because of complicated organizational structure and lack of coordination between those organizations project activities was very slowly.

3.2 Current status and implementation

The project is scheduled for 6 years, in three two-year phases. Aerial photography and cadastral survey was undertaken by contractors, engaged and supervised by ALAGaC. The ALAGaC will provide and maintain the cadastral database to be used by the already existing Property Registries and by the existing City and Provincial Land Management Departments. The ALAGaC will establish the National Land Information System (NLIS) in Mongolia within the project.

Due to the delay of preparation of NLIS technical specifications and bidding documents under the TA project, the start of NLIS is rescheduled until the 1st quarter of 2006.

Ortho-photo map and Digital Terrain Models (DTM) have been created basing on results of aerial photography and digital ortho-photo processing. With this work, about 700 sheets of ortho-photo maps and DTM of Ulaanbaatar city area at the scale of 1:2000 are completed. In total , 18440 hectares of land including 111064 possessed parcels of families and economic entities have been covered by cadastral maps at scale of 1:1000.

Satellite imagery and processing for the farmland: Cropland areas in Darkhan-uul, Orkhon, Bulgan, Selenge provinces under PHASE II of the project have been procured according to scope of the work and the digital image processing of the these images has been contracted and in process at the moment. The digital image processing and rectification of the satellite images are being conducted and as a result, approximately 90 sheets of ortho-photo maps covering 3600 sq.km at the scale of 1:50 000 will be produced. These ortho-photos will be used for further collection of land registration and cadastral survey data, farmland utilization planning and management. They are also used for creating land value maps and land valuation as well as it provides the basic information of the parcel based land information system for the farmland areas.

4. SET-UP AND DESIGN ISSUES OF NLIS IN MONGOLIA

ALAGaC's vision for the NLIS is to make land related information readily available to all interested parties (private citizens, commercial enterprises, government agencies so on), for further development of land policy and planning in all aspects.

The purpose of the NLIS is to deliver an information system of national scope capable of assisting the ALAGaC in all its functions but with an early emphasis on cadastral mapping and registration of titles to land and other immovable property. The serves the main purpose has advancing the government's land privatization policy and providing a more streamlined and transparent service to the public.

Figure 3. shows a conceptual diagram of the Mongolian NLIS. The NLIS is based upon the foundation of the Geodetic Reference Network and Topographic mapping with a multi-purpose cadastre at its core that is closely integrated with land management and planning functions. This provides a registration system for land and property that facilitates the administration of land and property transactions and the collection of taxes and land fees.

The conceptual design should reflect the business logic of the agencies in Mongolia responsible for land information, rather then the organizational structure WHAT SYSTEM DOES rather then HOW SYSTEM DOES IT.

As already stated the implementation of the GoM's land reform policy is a key priority and the strengthening of the cadastral survey and its integration with the business functions of other divisions and organizations is paramount.

The multi-purpose cadastre will provide basic parcel and property information for a range of transactions currently carried out in a number of the key divisions. It is anticipated that rationalization of functions, transactions and procedural development will be required over the period of the project. Within ALAGaC Head quarters, the NLIS will provide an

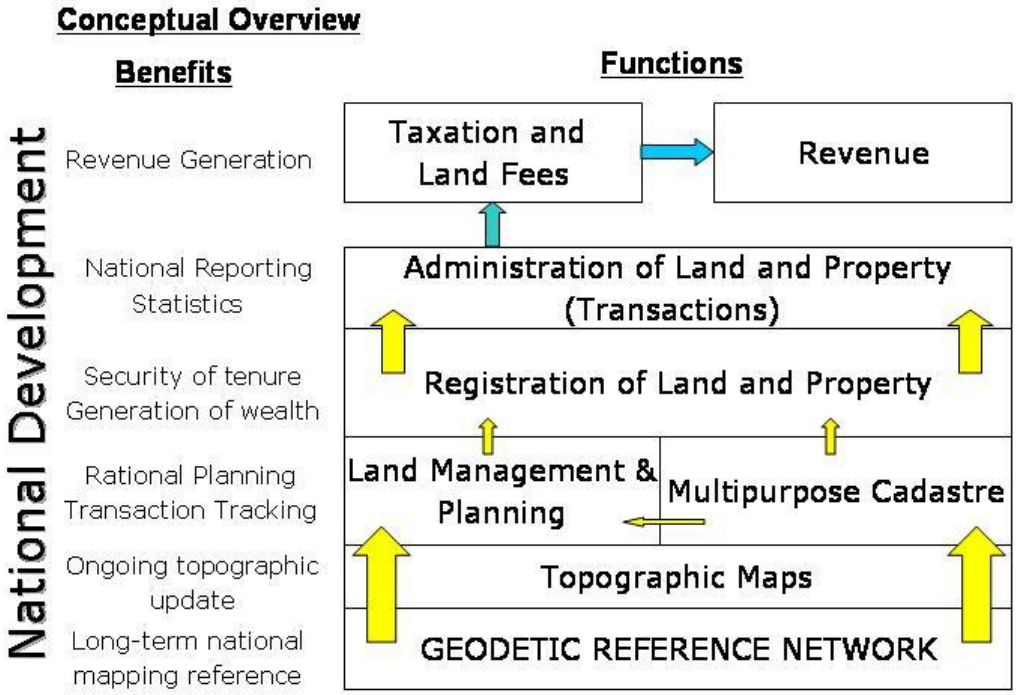

Figure 3. NLIS conceptual diagram

information backbone that cuts across divisional boundaries to provide an integrated spatial information framework based upon a unified data model.

The NLIS will have breadth of content but also depth at all organizational /administrative levels. ALAGaC and other Agency's will draw extensively from the NLIS for a wide range of functions are all levels of administration (City/District/Aimag/Soum). A distributed system making optimal use of networking across the country is therefore envisaged. Emphasis will be on functional linkages to eliminate duplication and redundancy in current systems.

A phased longer-term development of some of the key functions is anticipated according to the existing and emerging priorities. The system should therefore be robust, flexible and capable of expansion and improvement in each of the key functional areas of development.

Technical:

- all data will be designed for multipurpose rather than for use in one division.
- All data duplication between various divisions in ALAGaC will be avoided
- Overall structure must be user friendly and simple to understand and where the law permits open and standard

Organizational:

- one organization the ALAGaC is responsible for the implementation and establishing protocols for data flows and procedures
- whilst the functional requirements of the system broadly coincide with the organizational divisions of the NLIS overlapping functions/data will be subject to ongoing review as the project progresses

As we understand regarding to establishment of NLIS in Mongolia at least clear that we going to develop integrated NLIS design within the project. With the establishment of NLIS on full integration of data and functions currently within the Immovable property registration system, wasteful duplication of efforts in the acquisition and production of land data can be avoided and the accuracy, timeless, correctness and consistency of land information, used in planning for development and management of land resources, can be ensured.

Many advantages of the integrated system, for instance it will reduce data redundancy /duplication/, system errors and will be efficient system for users and will decrease the land appeals.

Regarding to integration we still have to improve NLIS technical specifications, particularly on conceptual and logical design, data flows, system and user requirements, security of the system etc, probably it will give positive influences for making good and efficient system design, also reducing level of risk. The integration of IPRS into a single NLIS database will provide timely, smoothly, efficiently, effectively and reliable transactions and supply land information to various interested parties and also supporting new organizational structure.

5. CONCLUSION

The NLIS project will draw together and rationalize the key business functions of the Agnecy. Implementation of database technologies will provide opportunities and a focus to simplify those complicated procedures and activities that are common to several functions/divisions of ALAGaC. Similarly, the application of GIS and IT draws together the mapping text based functions, especially in title registration where there are some overlaps between the functions of the Immovable property registry and the Cadastre. The integration of Immovable property registration system into a single NLIS database will provide timely, smoothly, efficiently, effectively and reliable transaction and supply land information to various interested parties and also supporting new organizational structure.

Different institutional and organizational divisions carry out these activities at different geographic locations. The business processes that these divisions undertake and the interactions between them are complex and are currently governed, in part, by the institutional structures rather than by the logic of the processes themselves.

Implementation of the system will be coordinated in connection with rules and guidelines in relation to laws of Mongolia But there was an obvious need to set up a clear legal basis for arranging a national information service throughout country concerning real estate and other units of land as well as to secure the updating and quality improvement of the information. So far, the Government of Mongolia established working committee to study and make amendments to all existing land related laws and legislations in 2005 according to the order by Minister of Justice. The purpose of amendments in the land laws to support Government Land Reform policy as well as support young land and property market in Mongolia. Inn\ terms of the implementation of the GoM’s land reform policy the integration

of the cadastral and the immovable properties register take precedence. These are also the most complex components from a functional and institutional perspective.

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BIOGRAPHICAL NOTES

Bagadai Naranchimeg, MSc., Land use planning engineer and graduated Land Management University of Moscow in 1993.
Prof. Master Degree course for cadastral application, ITC, 1999.
Since 1993 involved with land related activities such as development of registration system, development of land rules and regulations, advisory policy regarding implementation of the land law and other relevant regulations, design of land information database and application of GIS technology for different field etc.,
Now land administration specialist on Cadastral survey and land registration ADB project, ALAGC since 2003.

CONTACTS

Bagadai Naranchimeg
Agency of Land affairs, Geodesy and Cartography
Address:
Bayangol district
P.O.Box-242
Ulaanbaatar-210526, Mongolia

Tel: 976-99261558 /cell/
Fax: 976-11-324576
Tel: 976-11-318295 /office/
E-mail: naranchimeg70@yahoo.com