

Land Administration in Post-Disaster Areas:

Case Study of Banda Aceh, Indonesia

Master of Science thesis by Rizqi Abdulharis

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ABSTRACT

On December 26, 2004, the world has evidenced one of the most horrible tragedies in history of humankind. Land administration sector was also badly influenced by the catastrophe. The cadastral offices in Province of Nanggroe Aceh Darussalam (NAD) and Nias were severely damaged by the tsunami. Most of cadastral records were lost or destroyed. The ground benchmarks, natural and man-made objects were also destroyed by tsunami and/or clearing out works in the tsunami affected areas.

With nothing left on the ground, the land administration processes should be started from the scratch. The Government of Republic of Indonesia (GoI) was quickly responding by publishing five-year master plan of rehabilitation and reconstruction of NAD and Nias, especially on the spatial layout and land affairs. Unfortunately, many have criticised the GoI's master plan. Besides its macro scale (Kamil, 2005), Fitzpatrick (2005) underlined the relocation camps and coastal buffer zones proposals as promoting disquiet among Acehnese. Many of Acehnese just wanted to go home and resettled their houses in the exactly same location as their previous houses that are swapped by tsunami (Montlake, 2005).

NAD is well-know by its uniqueness among other Indonesian provinces since NAD has entirely different cultural background. As most of Indonesian region used to be ruled by Hindu and Buddha kingdom, NAD had only been ruled by several Islamic sultanates in different periods of time. Therefore, NAD has a strong Islamic culture. The implementation of *Syariah*, Islamic Law, has been strengthening the Islamic background of NAD.

Besides its strong Islamic background, Acehnese have also different customary land administration system than other Indonesian provinces. The Acehnese's customary land administration system is basically originated from the Islamic culture. The Acehnese's customary land administration system is basically intending to maintain sustainable development and promoting equality for every Acehnese to enjoy the outcome of development.

In order to focus on efforts of rehabilitating and reconstructing Banda Aceh, this study only highlights two out of three components of land administration, which are land tenure and land use. Land valuation, which is another component of land administration, is not included within this study due to the collapse of local governmental institution that is in charge in the valuation of land, as well as due to the prohibition of land transfer before the land administration system in Banda Aceh is working properly.

In this study of land administration in post-disaster areas in Banda Aceh, the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh is being evaluated. The evaluation of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh is performed with special references to the Acehnese's customary land administration system, land administration theories and cases, Indonesian land administration policy and regulation and progress on rehabilitation and reconstruction of land administration in Banda Aceh.

Abstract

During the performance of this research, interviews and literature study were held to gather information on above mentioned special references. Interviews were held in Banda Aceh, Jakarta and Bandung and covered the point of view of the decision maker, professional and intellectual on land administration field, as well as the aspiration of Acehnese and particularly the citizens of Banda Aceh. On the other hand, the literature study was particularly performed for collecting information on land administration theories and cases in post conflict areas. Moreover, information regarding Indonesian general and special land administration laws, regulations and policies for Banda Aceh was gathered during the performance of the literature study. Additionally, the aspiration of Acehnese, particularly the citizens of Banda Aceh was also acquired from the literature study, to complete the information gathered by interviews.

Having evaluated the contribution of Acehnese's customary land administration system, it is concluded that the customary land administration system is still wanted to be applied in Banda Aceh, even though the Indonesian land administration system has been applied in there for almost half of a century. Some immediate actions on rehabilitation and reconstruction of land administration in Banda Aceh that are not in accordance with the customary background of Acehnese, such as titling the land under Indonesian land tenure regime, could still be applied during the phase of rehabilitation and reconstruction. However, the customary land administration system is still wanted by the Acehnese and particularly citizens of Banda Aceh to be applied in Banda Aceh in the future.

For evaluating effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh, a land administration system performance evaluation framework is developed in this study. The evaluation framework in this study is developed based on conventional land administration theories, as well as adopting the cadastral evaluation framework of Soft System Theory (see Barry, 1999; Augustinus and Barry, 2004). The land administration system performance evaluation framework comprises of three evaluation frameworks, which are evaluating the compliance level of land administration system and its components to the needs and wants of Banda Aceh citizens, as well as the fulfilment of objectives of the higher system of land administration.

Having compared the Indonesian land administration system and its implementation to the land administration theories, as well as to the state of land administration in Banda Aceh, Indonesian land administration system is lack of compliance with the land administration problems in rehabilitation and reconstruction of Banda Aceh. Several basic problems have been identified, such as dualism of land administration regime and lack of fulfilment of land registration features that are simplicity, security, affordability, currency and sustainability, as well as lack of realism, binding power, participation/consultation and human resource in Indonesian land use system.

Due to existence of previously mentioned basic problems, which leads to bad-operated and ineffective land administration system in Indonesia, immediate efforts are needed to address the land administration problem in rehabilitation and reconstruction of Banda Aceh. GoI, its representative and its partners in rehabilitation and reconstruction of land administration in Banda Aceh therefore have formulated

regulations and guidelines regarding the rehabilitation and reconstruction of land administration in Banda Aceh. Having evaluated the policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh, it is concluded that the main problems of land administration in post-disaster areas, which are insecurity of land tenure and needs to address the effect of the catastrophe and disaster mitigation in spatial plan of Banda Aceh, have almost been solved. The policy of GoI on land administration in post-disaster areas in Banda Aceh also provides a means to fill the gap in Indonesian land administration regulatory framework, which could be employed as well in the future for advancing Indonesian land administration system.

Nevertheless, adoption of breakthroughs proposed by and performed under the policy of GoI on land administration in post-disaster areas in Banda Aceh might not be able to fully fill the holes left by Indonesian land administration system, such as the recognition of Acehnese's customary land tenure (known as *Hak Ulayat* in Indonesian land tenure system) and no binding power mandated to relevant governmental institutions to enforce the implementation of spatial plan. Without efforts to address the basic problems in Indonesian land administration system, the land administration state in post-disaster areas in Banda Aceh might return to its initial state, even after fully accommodating the previously mentioned breakthroughs in the rehabilitation and reconstruction of land administration in Banda Aceh.

Therefore, besides adopting breakthroughs in the rehabilitation and reconstruction of land administration in Banda Aceh, this study recommends the government to provide supportive regulations to adapt to the customary background of Acehnese and Indonesia in general, as well as supportive regulations and procedures for accelerating the rehabilitation and reconstruction of land administration system in Banda Aceh. This study also recommends GoI to train and educate land administration professionals for ensuring the good performance of land administration, as well as to address the basic Indonesian land administration problems.

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One of my life objectives, as a person and an Indonesian citizen, has been accomplished by finishing this MSc graduation research. As a person, I have learned to develop ideas in my mind in a proposal and finally a report. During the performance of this study, I have also learned how discipline could lead to hard work, in which further leads to the accomplishment of objective(s). Meanwhile, my objective as an Indonesian citizen to help Indonesia on advancing its land administration system has also (almost) been accomplished. By evaluating the land administration status in post conflict areas in Banda Aceh, I hopefully could offer a second opinion for resolving land administration problem in Banda Aceh, as well as in Indonesia in general.

Due to the above mentioned facts, I have been working on this topic with a pleasure and full of enthusiasm. However, without full support and considerations from my MSc graduation research supervisor, Jaap Zevenbergen, my MSc graduation research would not end at the same state as it is at this moment. Research direction and comments from Jaap Zevenbergen, either during the performance of this study and our 2-year collaboration, has always assisted me to be on the right track of land administration research in post-disaster areas. Willem Korthals Altes, who is the professor of geo-information and land development, has been very kindly providing me with the insight of land administration cases in post-disaster areas. His comments and considerations have also assisted me finish this research. I would like also to thank to Sisi Zlatanova and Edward Verbree from Geographic Information System Technology Section, as well as Juliette van Driel from ProRail, for their patience and supervision in which have been very helpful to develop a researcher state of mind in me. Many thanks is also directed to Rizal Anshari, Weny Rusmawar Idrus, Bambang Eko HN and Erna Heryani from National Cadastral Agency (BPN/Badan Pertanahan Nasional); Wisnubroto Sarosa and Mokhamad Krismara from Rehabilitation and Reconstruction Agency (BRR/Badan Rehabilitasi dan Rekonstruksi) for Aceh and Nias; D.M. Hakim, Bambang Edhy Laksono, Iwan Kurniawan and Andri Hernandi from Bandung Institute of Technology; as well as Tengku Daniel Juned, M. Adli Abdullah, for providing all necessary data on land administration state in post-disaster areas in Banda Aceh. The continued supports from Indonesian community in Delft, particularly from my housemates, M. Ikhwan Jambak, Bib Paruhum, Ari Brotoaji, Hatami Nugraha and Farid Wajdi, as well as my step-brother, Helman Muhammad, and his family, have always been very valuable for finishing what I have started here in Delft since September 2003. The understanding from my fellow Indonesian basketball team of Delft for allowing me to take many practice leaves has also been very helpful to provide me with more time to work on this study. Otherwise, I could only probably be a master in basketball court up to now.

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ABBREVIATIONS

Bappenas	<i>Badan Perencanaan Pembangunan Nasional</i> (National Development Planning Agency)
BPN	<i>Badan Pertanahan Nasional</i> (National Cadastral Agency)
BRR	<i>Badan Rehabilitasi dan Rekonstruksi Aceh dan Nias</i> (Rehabilitation and Reconstruction Agency for Aceh and Nias)
CODEPU	<i>Comité de Defensa de los Derechos del Pueblo</i>
GoI	Government of Indonesia
JICA	Japan International Cooperation Agency
NAD	Province of Nanggroe Aceh Darussalaam
PoI	People of Indonesia

PART I BACKGROUND OF THE STUDY

The first part of report on study of Land Administration in Post-Disaster Area: Case Study of Banda Aceh, Province of Nanggroe Aceh Darussalaam (NAD), Indonesia, contains two chapters, which are Introduction and Customary Background of Case Study Area. The first chapter, Introduction, presents the background and research outline of the study. The second chapter, Customary Background of Case Study Area, reveals the lineage of civilisation of case study area, as well as its correlation to this study.

1. INTRODUCTION

The complexity of land administration problem, especially within the scope of rehabilitation and reconstruction of NAD, is being the primary attention in this study. To scrutinise the complexity of land administration problem in NAD, this chapter firstly gives an introduction of this study in Section 1.1. Furthermore, this chapter introduces brief definition of land administration concept to assist the conceptual framework development of this study in Section 1.2. Secondly, this chapter also presents the research outline of this study in Section 1.3. The research outline in Section 1.3 contains problem definition, research objective, research framework, research question and research method, as well as the description of structure of the report of this study.

1.1 Introduction

On December 26, 2004, the world has evidenced one of the most horrible tragedies in history of humankind. Up to 30 metres high tsunami waves wipe coastlines of Province of Nanggroe Aceh Darussalam (NAD) and Nias, Indonesia, and several other countries in South East Asia. According to BRR and the International Partner (2006), the December 26 catastrophe cost 167,000 lives, 3,000 km of impassable roads, 14 of 19 seaports damaged, 8 of 10 airports damaged and 120 arterial bridges destroyed. It is estimated that the cost of damages of productive sector reached US\$ 1.2 billion (approximately € 1 billion).

Land administration sector was also badly influenced by the catastrophe. The cadastral offices in NAD and Nias were severely damaged by the tsunami. Most of cadastral records were lost or destroyed. The ground benchmarks, natural and man-made objects were also destroyed by tsunami and/or clearing out works in the tsunami affected areas.

With nothing left on the ground, the land administration processes should be started from the scratch. The Government of Republic of Indonesia (GoI) was quickly responding by publishing five-year master plan of rehabilitation and reconstruction of NAD and Nias, especially on the spatial layout and land affairs. Unfortunately, many have criticised the GoI's master plan. Besides its macro scale (Kamil, 2005), Fitzpatrick (2005) underlined the relocation camps and coastal buffer zones proposals as promoting disquiet among Acehnese. Many of Acehnese just wanted to go home and resettled their houses in the exactly same location as their previous houses that are swapped by tsunami (Montlake, 2005).

The state of land administration in NAD and Nias after tsunami is entirely fragile. The power of earthquake and tsunami has devastated every component of land administration. As the office of National Land Agency (Badan Pertanahan Nasional/BPN) of Republic of Indonesia in Banda Aceh was severely damaged, the land books, which are the official records of cadastre held by BPN, flooded by sea water and mud (BPN, 2005). According to Hukumonline (2006), BPN has confirmed that 80% of cadastral documents could be recovered. Unfortunately, the recovery process of cadastral documents of NAD is running too slow if it is compared with the needs of security of land by tsunami survivors. Only 20% of cadastral documents of NAD have been sent back to NAD while the rest are still being processed. The fact that only 25% of land is titled has added the level of confusion on rehabilitation and reconstruction of land administration in NAD and Nias. The situation has turned to become worst when a "land mafia" has already begun to obscure boundaries in devastated areas in order to make fraudulent land claims and will make use of corrupt officials, if any, to obtain valuable land with a minimal compensation for the landlord (Fitzpatrick, 2005).

On the other hand, there is also a need to update the spatial planning of earthquake- and tsunami-affected area. This is due to the damage and the change of landscape as consequences of earthquake and tsunami. It was reported that December 26 earthquake and tsunami had devastated 800 km coastal strip of NAD (BRR and the International Partner, 2006). See Figure 1.1 for the location of earthquake- and tsunami-affected area in NAD and Nias. The range of damage within the NAD

coastal strip is varied from severely damaged in area up to 2 kms from coastal line to tsunami-free-affected area in area located beyond 5 kms from coastal line. See Figure 1.2 for the tsunami damage assessment map of Banda Aceh. Therefore, the updated spatial planning should take into account the development of “ground zero”, the moderately damaged and tsunami-free-affected areas, as well as interconnection between each mentioned area.



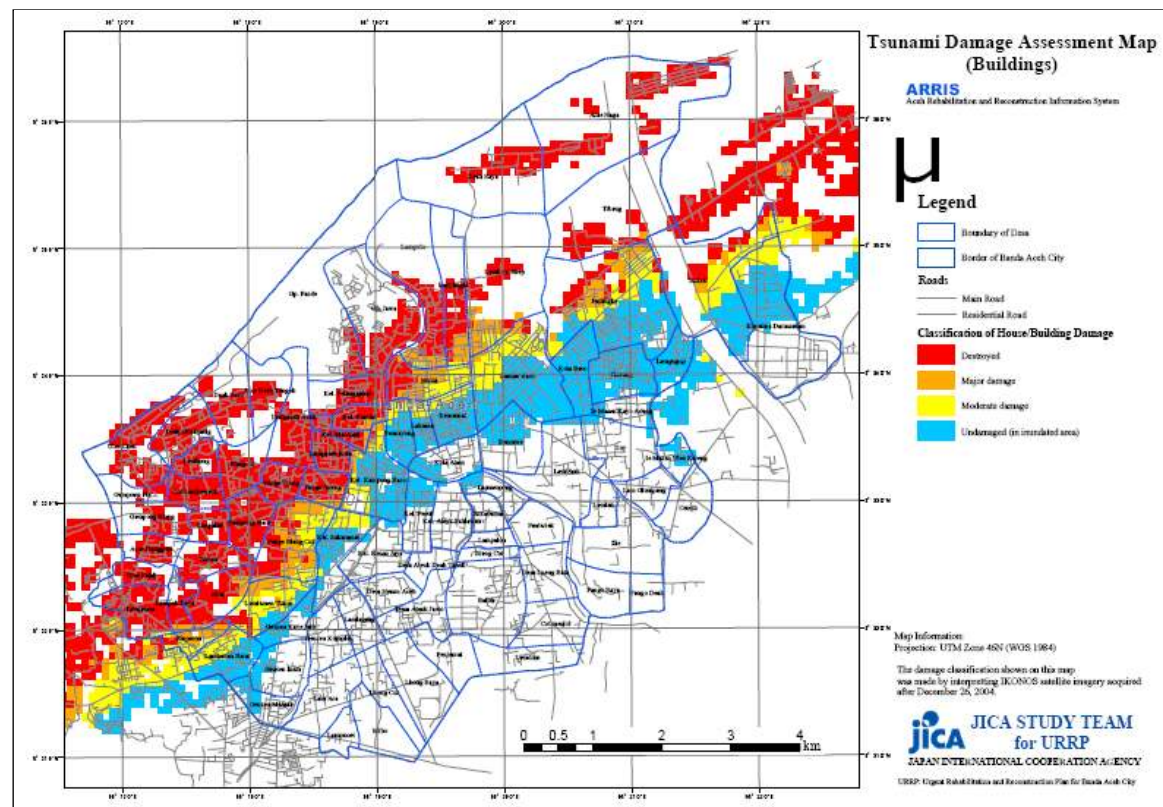
Fig. 1.1 Earthquake- and tsunami-affected area (shown in red) in NAD and Nias (Hakim *et al.*, 2005)

1.2 Definition of Concept

Land in this study is defined as the surface of the earth, based on Article 4.1 of Act of Republic of Indonesia No. 5 year 1960 concerning Basic Agrarian Law. This definition is used to adjust the context of the study in general, which is Indonesia. Furthermore, the rights to land, or also called land tenure, in this study is defined as the authority granted to the person in question to necessarily utilise the land in question, as well as the body of the earth, water and space above it for the interest directly connected to the use of the land as long as conforming the restrictions laid down by the Basic Agrarian Law and other regulations in a higher level. The definition of rights to land in this study is based on Article 4.2 of Basic Agrarian Law. Based on these definitions, this study further looks at the land as separately defined with the property. The property is further described as physical object that is attached to the land. Consequently, every property term in this study is directly translated into the term of land, except when the term of property points out the physical object that is attached to the land.

Land administration covers wide range of activities that could mean different thing for different people. At least there are two definitions that could describe the term of land

administration as a whole. According to Dale and McLaughlin (1999), the term of land administration is referring to public sector activities required to support the alienation, development, use, valuation and transfer of land. Another definition is issued by Barry (1999), which illustrates land administration as the sub-system that actualises strategies to implement land policy, and other related policies, within the land management system. As a matter of fact, land administration could also be defined as an execution tool of land policy and comprises public sector activities on tenure, use, and value of land. The more detail explanation of land administration concept is given in Part II of this study report. Meanwhile, the latter mentioned definition of land administration is used to formulate the research outline in Section 1.2.



Source: ARRIS, 2005

Fig. 1.2 Tsunami Building Damage Assessment Map of Banda Aceh

In this study, a post-disaster area is defined as an area that has experienced disaster in its recent past, including natural and man-made disaster. Furthermore, based on the previous definition, a post-disaster area in this study is also defined as including the post conflict area. In this study, a post conflict area is defined as an area that has experienced conflicts in recent past, particularly political conflict and war.

This study highlights the customary land administration system of Indonesia, particularly Banda Aceh. Therefore, it is important to define the term of *Hak Ulayat* (*Ulayat* Right), which refers to Indonesian customary land tenure. The more detail definition of *Hak Ulayat* could be found in Article 1.1 of Regulation of State Minister on Agrarian of Republic of Indonesia Number 5 year 1999 concerning Guidelines for Settlement of *Hak Ulayat* Problematic within Customary Law. In that article, *Hak Ulayat* is defined as authority of specific customary communities on specific area, in

which allows the members of the community to benefit from natural resources in area in question, including land, for the living of members of community in question that has been passed for generations, mentally and physically.

1.3 Research Outline

1.3.1 Problem Description

GoI's policy on rehabilitation and reconstruction of land administration in earthquake- and tsunami-affected area is the primary attention of this study, especially on issue of combining top-down and bottom-up approach within the scope of rehabilitation and reconstruction of land administration in NAD and Nias. Land policy formulation and development provides strategic direction of management of land, which includes the vision, objectives and strategic framework for the management and administration of land (Barry and Fourie, 2002). As stated in the beginning of Chapter 1, the state of land administration in NAD and Nias is entirely fragile. Many elements of land administration were severely damaged or even lost. On the other hand, many have criticised GoI's policies regarding rehabilitation and reconstruction of land administration in NAD and Nias (see Fitzpatrick, 2005; Kamil, 2005; and Montlake, 2005). In addition to critics on GoI's policies, the outcome of many committed projects, especially in the scope of rehabilitation and reconstruction of land administration in NAD and Nias, are mostly not as what they were expected. As the implementation both top-down and bottom-up approach of land administration is the only means to fastened rehabilitation and reconstruction of NAD and Nias, this issue should pay careful attention as well since this would be the first experience of GoI on implementing both approaches of land administration.

Policies regarding the tenure and use of the land, particularly on cadastral system and spatial planning, are considered as the key components of rehabilitation and reconstruction of land administration in NAD and Nias. This is due to the fact that most of Acehnese have been returning to their original place of living before the December 26 catastrophe. The homecoming of Acehnese to their land emerges bi-directional dilemma for both Acehnese and GoI. On one hand, Acehnese whose land is situated within the devastated area could not directly locate his/her own parcel as the landscape has severely altered because of earthquake and tsunami. The security of land ownership is also threatened since many of them lost their ownership approval. The damage or even the lost of land book, which has no back-up, exacerbates the tenure security of Acehnese. On the other hand, the GoI's plan to build back earthquake- and tsunami-affected area by means of sustainable and disaster-aware spatial planning could probably be pointless as many of Acehnese want to return to their land and build their home in exact location as it used to be. This is due to the tie between Acehnese and their place of living, as well as the tie between Acehnese and his/her community.

1.3.2 Research Objective

There are two objectives of this study, which are:

1. To evaluate the effectiveness of GoI's policy on rehabilitation and reconstruction of land administration for Banda Aceh;

2. To make recommendations, if necessary, towards the effectiveness of GoI's policy on rehabilitation and reconstruction of land administration for Banda Aceh based on the first mentioned objective.

1.3.3 Research Framework

Based on land administration description and problems defined from above, this study focuses on two out of three key components of land administration, which are tenure and use of land, particularly on spatial planning and cadastral system. Therefore, the land administration concept in this report is further defined as an execution tool of land policy and comprises public sector activities on the tenure and use of the land, particularly on spatial planning and cadastral system.

In this study, land valuation is not included within the discussion of rehabilitation and reconstruction of land administration in Banda Aceh. Firstly, the author argues that the land valuation system had been collapsed since the December 26 catastrophe. This is due to the inability of the local governmental institutions, which is in charge in the valuation of the land, to perform their governmental tasks on land valuation. In contrary to the loss of land registry data, land and property taxation data could quickly be recovered since every data regarding land and property taxation is backed up and available in digital form. However, the power of the destruction of December 26 catastrophe had changed the landscape of NAD and Nias, particularly in coastal areas, which led to the irrelevancy of land and property taxation data compared with the actual situation. Secondly, after the December 26 catastrophe happened, Badan Pertanahan Nasional (BPN/National Land Agency) issued the prohibition of transfers of right to land (BRR and the International Partner, 2006). The prohibition to perform the alienation of land was strengthened by the Master Plan of Rehabilitation and Reconstruction of NAD and Nias, which was issued on March 2005. This prohibition was intended to secure the rights to land of people of NAD and Nias and could only be revoked immediately after the land administration system in NAD and Nias is working properly. Thus, it is necessary to address and speed up the resolution finding of the land tenure and use problem first before addressing land value problem in NAD and Nias.

Fortunately, NAD is also a post conflict area due to the signing of Memorandum of Understanding (MoU) by Government of Indonesia (GoI) and Aceh's rebels on August 15, 2005, to end the 30 years of conflict in NAD. However, as the formulation of the policy concerning the impact of the signing of MoU is still undergone and there is very little information that could be acquired regarding the returning of the Aceh's rebels, this study does not include the post conflict situation in its discussion.

In this study, Banda Aceh is chosen as the case study area. Banda Aceh is the capital of NAD. Therefore, it holds many important functions in NAD, such as central administrative and business function. Besides being the biggest urban area in NAD, Banda Aceh territory covers as well many rural areas, which adds the complexity of land administration problem during the earthquake and tsunami rehabilitation and reconstruction process. The uniqueness of NAD among other provinces in Republic of Indonesia adds the importance of Banda Aceh within the rehabilitation and reconstruction process of NAD and Nias.

1.3.4 Research Question

In order to be able to achieve the three objectives of this study, therefore the main research question of this study is formulated as follows:

“How effective the policy of GoI is to address the problems on rehabilitation and reconstruction of land administration in Banda Aceh after the December 26 earthquake and tsunami.”

Having looked at the problem description in Section 1.2.1, the main research question of this study is broke down into several secondary questions to acquire the structured answer of the main research question. The secondary questions of this study are as follows:

1. What the contribution of the Acehnese's customary land administration system is to the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh;
2. What the contribution of the existing land administration theories and cases, in both stable and uncertain environment, is to the effectiveness of GoI's policy on rehabilitation and reconstruction of land administration in Banda Aceh;
3. What the contribution of Indonesian land administration policies and regulations is to the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh;
4. What the contribution of the progress of rehabilitation and reconstruction of land administration in Banda Aceh is to the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh.

1.3.5 Research Method

In order to answer the above mentioned secondary questions, the following methods were used:

1. The answer of the first secondary question is mainly subtracted from interviews with the experts on Acehnese's customary law. The scarcity of literatures regarding Acehnese's customary land administration system is becoming one of the impedance factors on performing this study. However, the literature study is also performed for acquiring the general information regarding lineage of Acehnese's civilisation;
2. The answer of the second secondary question is mainly based on literature study of land administration laws and regulation in Indonesia, as well as report on land administration reform project in Indonesia and interviews with the Indonesian land administration experts;
3. The answer of the third secondary question is deducted from the interviews with the decision makers of rehabilitation and reconstruction of Banda Aceh, as well as literature study of materials gathered during the interviews and from the Unitary Website for Aceh and North Sumatra Reconstruction Information Sharing¹;

¹ <http://e-aceh-nias.org/>

4. In order to answer the forth secondary question, the literature study of existing land administration theories and cases, particularly for spatial planning and cadastre in stable and uncertain environments, is performed.

The information acquired from interviews and literature study regarding contribution of customary land administration system of Acehnese and Indonesian land administration regulation, as well as progress on rehabilitation and reconstruction of land administration in Banda Aceh, is compared and reviewed by existing land administration theories and cases in order to evaluate the GoI's policy on rehabilitation and reconstruction of land administration in Banda Aceh.

The interviews were held within the period of October 24 to November 24, 2005. The break down of the period of interviews is as follows:

1. Among the period of October 24 to 26, 2005 and November 18 to 24, 2005, interviews were held in Bandung, Indonesia. All of the interviewees are the lecturers in Department of Geodetic Engineering of Faculty of Civil and Environmental Engineering of Bandung Institute of Technology, particularly from the Surveying and Cadastre Group.
2. Among the period of October 27 to November 1, 2005 and November 17, 2005, interviews were held in Jakarta, Indonesia. The interviewees background are varied from the decision makers of Indonesian cadastre and the rehabilitation and reconstruction on cadastral system in NAD and Nias in BPN head office and former Deputy of Survey and Land Registration Division of BPN;
3. Among the period of November 10 to 16, 2005, the interviews were held in Banda Aceh, Indonesia. The backgrounds of interviewees are the decision makers on rehabilitation and reconstruction of land administration in NAD and Nias, as well as the experts on customary law of Acehnese.

The interviews covered the point of views of the decision maker, either for Indonesia in general and particularly on rehabilitation and reconstruction of land administration in NAD and Nias, as well as the intellectual and professional. The interviews generated information regarding the land administration problem and policy on rehabilitation and reconstruction of NAD and Nias from the decision makers, as well as the desired state of land administration system in post-disaster area in NAD and Nias from Acehnese's intellectuals. Unfortunately, because the time allocated for interviews held in Banda Aceh was too short, the opinion of earthquake and tsunami survivors regarding the expected result of rehabilitation and reconstruction of land administration in Banda Aceh could not be acquired. The desired condition by the catastrophe survivors is basically needed to evaluate the GoI's policy on rehabilitation and reconstruction of land administration in Banda Aceh. See Part II for the further details on correlation between the wanted state of land administration in post earthquake and tsunami area and evaluation of efficiency and effectiveness of land administration system. However, the data on aspiration of the December 26 catastrophe survivors could also be subtracted from literature collected during the period of interview.

On the other hand, the literature needed to answer above mentioned secondary research questions was collected continuously up to the end of February 2006. The literatures needed to complete the answer to the first secondary question were mainly

Part I: Background of the Study

Chapter 1: Introduction

collected from the internet. For answering the second and forth secondary questions, there were no significant obstacles while acquiring the literatures. For answering the second secondary question, Indonesian land administration law and regulation, as well as the report on land administration reform project, are studied. For answering the forth secondary question, basic theory of land administration is subtracted from several literatures. In order to assist the formulation of solutions on rehabilitation and reconstruction of land administration in Banda Aceh, several literatures on land administration in uncertain environment, such as the case of Xhosa-speaking communities (Barry, 1999) and proceeding of a symposium held by International Federation of Surveyors (Fédération Internationale des Géomètres/FIG) Commission 7 on Land Administration in Post Conflict Areas (FIG Commission 7, 2004), as well as Handbook for Planning Immediate Measures From Emergency to Reconstruction (UN-HABITAT, 2005), are studied. Unfortunately, efforts on collecting literatures to answer the third secondary question is hampered by the fact that there is no updated information related to this study, except the Resettlement Guidelines and the report on Aceh and Nias one year after tsunami (BRR and International Partners, 2005), shared in Unitary Website for Aceh and North Sumatra Reconstruction Information Sharing since August 2005. The most updated literatures regarding the progress of rehabilitation and reconstruction of land administration in NAD and Nias were acquired during the period of interview held in Banda Aceh.

1.3.6 The Structure of This Study Report

The result of study on “Land Administration in Post-Disaster Area: Case Study of Banda Aceh, Indonesia” is described in this report. The structure of this study report is as follows:

Part I Background of the Study:

- Chapter 1, Introduction, contains the background of the study, a brief definition on land administration concept and the research outline;
- Chapter 2, Customary Background of Banda Aceh, contains the lineage of the civilisation of Acehnese, as well as its correlation to this study, particularly on Acehnese’s customary spatial planning and cadastral system;

Part II Theoretical Background of the Study:

- Chapter 3, Land Administration Theory, describes the basic land administration theories on stable environment, particularly on the tenure and use of the land;
- Chapter 4, Land Administration in Uncertainty, illustrates several land administration cases in post conflict areas. Additionally, the land administration theory for evaluating the performance of land administration in uncertain environment is also portrayed within this chapter;

Part III Land Administration System in Banda Aceh:

- Chapter 5, Policy of GoI on Rehabilitation and Reconstruction of Land Administration in Banda Aceh, describes the GoI's policy and regulation in general, as well as GoI's special policy for rehabilitation and reconstruction of land administration in NAD and Nias, particularly in Banda Aceh;
- Chapter 6, Progress of Rehabilitation and Reconstruction of Land Administration in Banda Aceh, illustrates the progress of rehabilitation and reconstruction of land administration in Banda Aceh up to one year after the December 26 catastrophe;

Part IV Analysis:

- Chapter 7, Land Administration Evaluation Framework for Banda Aceh, explains the theories and methods implemented for evaluating GoI's policy and regulation on rehabilitation and reconstruction of land administration in Banda Aceh;
- Chapter 8, Evaluation of Rehabilitation and Reconstruction of Land Administration in Banda Aceh, describes the evaluation of GoI's policy and regulation on rehabilitation and reconstruction of land administration in Banda Aceh by land administration evaluation framework explained in Chapter 7;

Part V Conclusion and Recommendation:

- Chapter 9, Conclusion and Recommendation. The Conclusion Section answers the main and secondary research questions, while the Recommendation Section provides the recommendation for the continuation of rehabilitation and reconstruction of land administration in Banda Aceh.

2. CUSTOMARY BACKGROUND OF BANDA ACEH

It is previously mentioned in Chapter 1 that the Acehneses' customary land administration system becomes an important factor on evaluating the policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh. Therefore, this chapter further gives an introduction to the customary background of Acehnese (Section 2.1), judicial system in NAD (Section 2.2) and Acehneses's customary land administration system (Section 2.3).

2.1 Introduction

The civilisation of Aceh is always being connected to the establishment of Islam in Aceh. Soon after Islam entered Aceh in 8th century, the Sultanate of Peureulak was established around 850 AD in (then) the Regency of East Aceh, NAD, with Banda Khalifah as its capital (Wikipedia, 2006c). Marco Polo further reported from his visit to Aceh in 1292 that Aceh was ruled by the Sultanate of Samudra Pasai (FreeAtjeh, 2000). Later on, the territory of Sultanate of Samudra Pasai covered as far as Satun in southern Thailand, Johor in Malay Peninsula and Siak in (then) Province of Riau of Indonesia in its golden age (Wikipedia, 2006c).

The strong influence of Islam to the culture of Aceh could also be discovered during the War of Aceh from 1873 to 1904. The desperate Dutch Colonial government was forced to employ the more cooperative strategies, proposed by Snouck Hurgronje, due to the resistance of Acehnese. Based on Snouck Hurgronje analysis, the Dutch Colonial government minimised the role of Sultan while at the same time paid an attention to the *Ulee Balang*, the hereditary chief, who could be trusted as local administrators (Wikipedia, 2006c). However, Wikipedia (2006c) reveals that Snouck Hurgronje considered the *Ulama*, the Islamic religious leaders of Acehnese, could not be trusted or persuaded to cooperate. Therefore, Snouck Hurgronje argued that the *Ulama* should be destroyed. Even after 1904, the guerrilla wars were still continued to take place, which mostly led by the *Ulama*.

After the Independence of Republic of Indonesia on August 17, 1945, Aceh declared its supports to the establishment of Republic of Indonesia. However, the Acehnese should wait until 1999 to have autonomy to implement the *Syariah* (Islamic Law) due to the promulgation of Act of Republic of Indonesia No. 44 year 1999 concerning the Implementation of Speciality of Province of Special Region of Aceh. The special autonomy to implement the *Syariah* is then supported by the promulgation of Act of Republic of Indonesia No. 18 year 2001 concerning Special Autonomy for the Province of Special Region of Aceh, which is later on named as the Province of Nanggroe Aceh Darussalaam (NAD).

2.2 Judicial System in NAD

Article 25.1 and 25.2 of Act of Republic of Indonesia No. 18 year 2001 describe that *Syariah* in NAD, which is integrated in Indonesian national judicature system, is executed by *Mahkamah Syariah* (Islamic Court of Law), in which the *Syariah*-based authority is further promulgated by *Qanun* (the Regulation of Regional Government) of NAD. In order to put into effect the *Syariah* Judicature in NAD, the Government of NAD promulgated *Qanun* No. 10 year 2002 concerning the *Syariah* Judicature, which was fully supported by Indonesian central government by the promulgation of the Presidential Decree of Republic of Indonesia No. 11 year 2003 concerning the *Mahkamah Syariah* and Provincial *Mahkamah Syariah* in NAD. At the same day of the promulgation of the Presidential Decree, the *Mahkamah Syariah* and Provincial *Mahkamah Syariah* were officially established. The Judicial Authority of *Mahkamah Syariah* is further administered by Act of Republic of Indonesia No. 4 year 2004.

According to Judicial Authority Act, *Mahkamah Syariah* could act as special court of both Islamic Judicature and Normal Judicature. The first level case would be sentenced by *Mahkamah Syariah* of Regency/Municipality, while the Provincial *Mahkamah Syariah* is in charge on appealed cases. The further appeals should be directed to Supreme Court of Republic of Indonesia.

Furthermore, the Judicial Authority Act is also promulgated that Provincial *Mahkamah Syariah* is also authorised to sentence the first and last level judicial authority disputes among *Mahkamah Syariah* in NAD. However, as the authority of *Mahkamah Syariah* could only be sanctioned to the Moslems, the judicial authority disputes between *Mahkamah Syariah* and Normal Courts within different judicature should be sentenced by Supreme Court of Republic of Indonesia.

Qanun No. 10 year 2002 further describes the authority of *Mahkamah Syariah* to take care of the following aspects:

- *Al Ahwal Al Syakhshiyah* (Islamic family law), which comprises of the authority to deal with marriage, inheritance and testaments;
- *Mu'amalah* (Islamic substantive law), such as trades, debts and credits, revenue sharing from cropping, authorisation, business cooperation, borrow and lend, goods' confiscation, *Hak Langgih* (*Langgih* Right, a right to deny the transfers of goods that breach the right of the person in question), goods' pawning, opening the land, mining, found goods, banking, leasing, guaranteeing, employment, looted goods, *waqaf* (donation of property for the religious purposes), grants, charities and gifts;
- *Jinayah* (Islamic criminal law), which comprises of *zina* (sexual act outside the marriage), *zina* accusation, stealing, robbing, alcohol drinking and drugs abuse, *murtad* (anyone who leaves Islam and becomes a "traitor" to it through their new beliefs or action²), rebellion, murder, battering, gambling and seclusions.

2.3 Customary Land Administration of Acehnese

This section describes the Acehnese's customary land administration system. This section therefore is divided into two subsections, which are the Acehnese's customary land use system (Section 2.3.1) and the Acehnese's customary land tenure system (Section 2.3.2).

2.3.1 Customary Land Use System of Acehnese

The basic feature of Acehnese's customary land use system is its spatial structure and planning. The customary spatial structure of Acehnese is comprised of general and public services spatial structure (Juned pers. com. 2005³). The general spatial structure is originated from the federal administration of Sultanate of Aceh until the middle of 19th century. The general spatial structure in order from top to bottom is comprised of:

² http://atheism.about.com/library/glossary/islam/bldef_murtad.htm

³ Interview with Professor Tengku Daniel Juned, Professor of Law, Faculty of Law, University of Syiah Kuala, Banda Aceh, Indonesia, on November 16, 2005

1. Sultanate of Aceh, equals to NAD at this moment;
2. *Sago*, equals to regency/municipality;
3. *Mukim*, equals to district under regency/municipality;
4. *Gampong*, equals to village.

Besides the general spatial structure, federal administration of Sultanate of Aceh also recognised the public service spatial structure, particularly concerning the management of maritime territorial of Sultanate of Aceh. *Panglima Laôt* has been established based on *Syariah* since the sultanate period of Sultan Iskandar Muda from 1607 to 1637 (Wikipedia, 2005). *Panglima Laôt* is customary fishermen institution of Acehnese, which maintains the *Hukôm Adat Laôt* (Acehnese's customary maritime law) by arranging fishing manners, defining allowable fishing period, performing customary rules and managing customary ceremonial, resolving disputes among fishermen and becoming facilitator between fishermen and *Ulee Balang* (local administrator). In the era of Indonesian independence, the function of *Ulee Balang* is represented by local government.

The spatial structure of maritime territorial managed by *Panglima Laôt* is entirely different from the federal administration structure. First of all, the territory managed by *Panglima Laôt* is as large as the maritime territorial of Sultanate of Samudra Pasai (Wikipedia, 2005). It also includes the areas up to 100 metres from line of the highest tide (Abdullah pers. com. 2005⁴). Secondly, the spatial structure of *Panglima Laôt* is based on the unit of location where the fishermen fish, tie up their boats, sell the fish or reside called *Lhök* (Wikipedia, 2005). The area of a *Lhök* is between the 100 metres belt from line of the highest tide and the maximum range of the fishermen boat to be able to manage the marine resources economically. In accordance with the development of maritime technology, the range of the modern fishermen boats have been exceeding the traditional territory of *Lhök*. Therefore, the *Panglima Laôt* in regency and provincial level has been established to resolve the conflicts among *Lhök(s)*.

The Acehnese's customary spatial structure actually mirrors bottom-up spatial planning approach. The head of each smallest spatial unit, for both general and public service spatial structure, has an authority to plan his/her *Gampong* or *Lhök*. For instance, in a *Gampong*, *Keuchik* (head of a *Gampong*) has an authority to allocate the land to those who need it, as well as to maintain the balance between the lands allocated to the citizens of *Gampong* and to the public purposes, such as for herding and cemetery (Juned pers. com. 2005; Abdullah pers. com. 2005).

Furthermore, the head of each smallest spatial unit holds a huge responsibility to maintain sustainability (Juned pers. com. 2005). In both Acehnese's customary land and maritime law, there are restrictions that should be conformed, such as restrictions to cut trees that are important for the humankind, to build houses outside residential areas, to fish using poisons and so forth. The task of the head of each smallest spatial unit is to ensure that there are no violated restrictions in the territory in question.

⁴ Interview with M. Adli Abdullah, Secretary General of *Panglima Laôt* of NAD, on November 14, 2005

Due to self-administration on spatial planning, the citizens of *Gampong* are bounded to their land and village. As a *Gampong* is demanded to be self-sufficient, this leads the citizens of *Gampong* to perform their activities within the territory of *Gampong*, including settling, cultivating and burying their relatives.

2.3.1 Customary Land Tenure System of Acehnese

According to Abdullah (pers. com. 2005), there are four types of Acehnese's customary land tenure, which are Right of Ownership, *Hak Ulayat Gampong* (land customary right of village), *Hak Ulayat Laôt* (land customary right for the purpose of maintaining *Hukôm Adat Laôt*) and *Tanah Waqaf* (land and/or property which is donated to the religious institution for religious purposes). The area included in *Hak Ulayat Laôt* is defined as the area for maintaining *Hukôm Adat Laôt* which lies between the lines of highest tide and 100 metres from the lines of highest tide. The land included in *Hak Ulayat Laôt* is public property and maintained by *Panglima Laôt*. On the other hand, *Tanah Waqaf* is maintained by *Baitul Maal*, an institution that manages the religious charities, for the religious purposes. *Baitul Maal* is also in charge of the land that has no owner for the prosperity of Acehnese.

Acehnese's customary ownership right and *Hak Ulayat Gampong* are managed by *Keuchik* (Abdullah pers. com. 2005). Basically, the whole territory of *Gampong* is included within *Hak Ulayat Gampong*. *Keuchik* further allocates the land for settlement and cultivation to the citizens of *Gampong* and issues the ownership right of allocated land to the citizen of *Gampong* in question. The land allocation itself should go through the following processes (Abdullah pers. com. 2005):

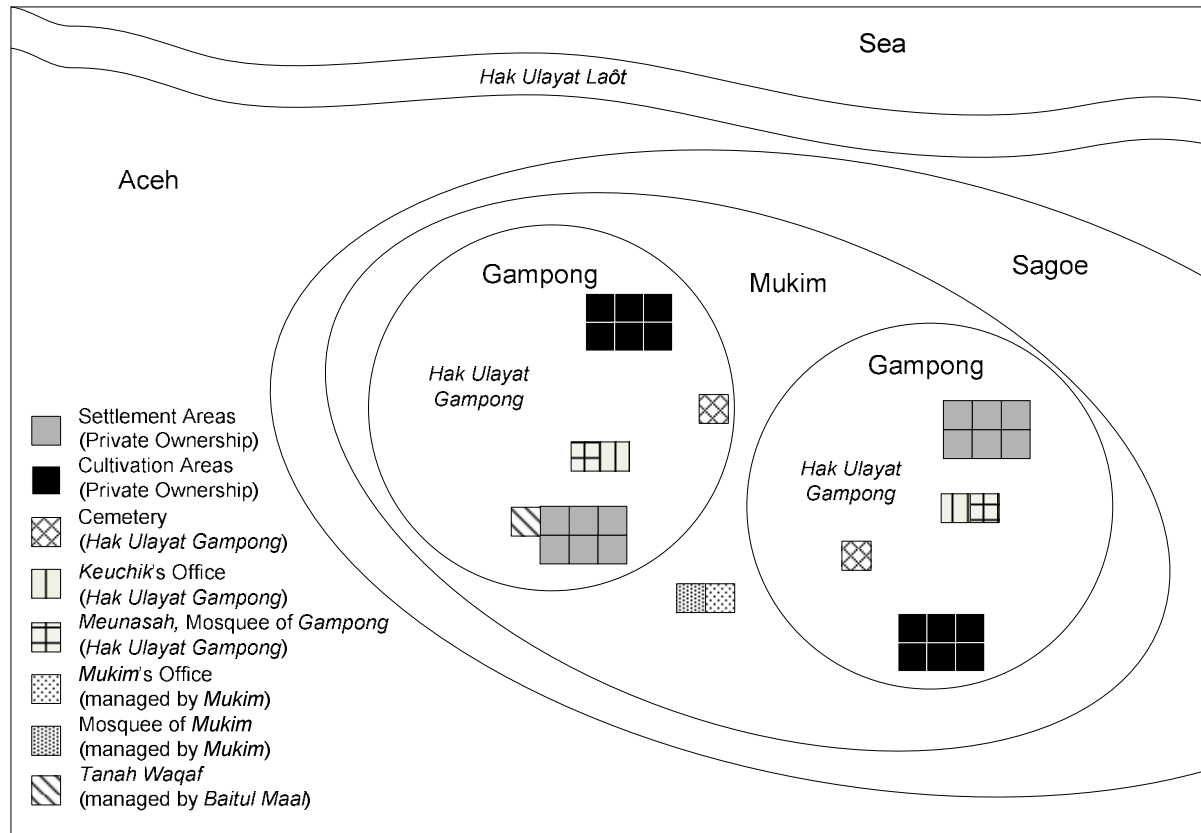
1. The land has been cultivated or exploited in a good manner by a person in question;
2. The person in question has received an acknowledgement from the community of *Gampong* that the land has been cultivated or exploited in a good manner by a person in question;
3. The issuance of the proof of land ownership from *Keuchik* in oral ceremony witnessed by at least three citizens of village in question.

Furthermore, Juned (pers. com. 2005) explains the extent of each *Hak Ulayat Gampong* as complying with the followings:

- The area that could be managed economically;
- The area within one-day-return walking distance.

The author argues that the dispute resolution approach in Acehnese's customary land tenure system is basically similar to the race statute. The race statute is represented in *Hak Terdahulu* (Preliminary Right). *Hak Terdahulu* manages the granting of land tenure to the first land occupant, as well as liability of alienation of the land (Juned pers. com. 2005). Once the land tenure is granted, *Hak Langgih* offers the protection for the land occupant to refuse alienations of the land in question that breaches *Hak Terdahulu* held by the person in question (Juned pers. com. 2005). Juned (pers. com. 2005) further describes that the dispute resolution process is performed by the relevant administration level. For instance, the dispute among citizens of a *Gampong*

will be taken care by *Keuchik*, while the dispute resolution process that included two different *Gampong* will be led by head of *Mukim* and so forth.



Adopted from Juned (pers. com. 2005) and Abdullah (pers. com. 2005)

Fig. 2.1 Acehnese's customary spatial structure and land tenure system

PART II THEORITICAL BACKGROUND OF THE STUDY

This part brings the theoretical background of land administration within this study. The theoretical background of land administration is used as a means to evaluate the GoI's policy on rehabilitation and reconstruction of land administration. Therefore, this part of the study report reveals the theoretical background to evaluate the land administration system. The evaluation framework of land administration system is actually subtracted from the existing theories of land administration. Thus, this part firstly portrays the land administration theory in a stable environment at the Chapter 3, Land Administration Theory, while the Chapter 4, Land Administration in Uncertainty, exposes the existing theory for evaluating land administration system. Additionally, the cases on land administration in post conflict areas are also given in Chapter 4.

3. LAND ADMINISTRATION THEORY

Basic land administration theory is described in this chapter. This chapter comprises of an introduction to land administration in Section 3.1. Furthermore, Section 3.2 describes the basic concept of land administration; including detail explanation of principle, feature and classification of land tenure (Section 3.2.1) and land use (Section 3.2.2).

3.1 Introduction

Land could be defined as a physical thing that encompasses the surface of the earth and all things attached to it both above and below (Dale and McLaughlin, 1999). Also according to Dale and McLaughlin (1999), land is an abstract thing that is manifest as a set of rights to its use with a value that can be traded even though the physical object cannot be moved.

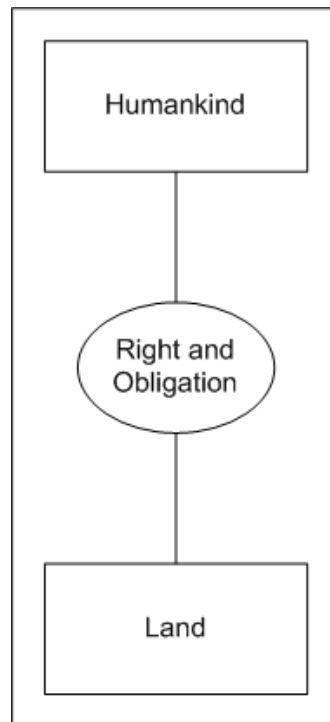
In this study however land is defined as the surface of the earth, based on Article 4.1 of Act of Republic of Indonesia No. 5 year 1960 concerning Basic Agrarian Rule. This definition is used to adjust the context of the study in general, which is Indonesia. Furthermore, the rights to land, which is also called land tenure, in this study is defined as the authority granted to the person in question to necessarily utilise the land in question, as well as the body of the earth, water and space above it for the interest directly connected to the use of the land as long as conforming the restrictions laid down by the Basic Agrarian Rule and other regulations in a higher level. The definition of rights to land in this study is based on Article 4.2 of Basic Agrarian Rule. Based on these definitions, this study further looks at the land as separately defined with the property. The property is further described as physical object that is attached to the land. Consequently, every property term in this study is directly translated into the term of land, except when the term of property points out the physical object that is attached to the land.

Land, in a broader context, has been considered as an important element of life among many ancient philosophies, such as Greek, Chinese, Hindu and Japanese philosophies (Wikipedia, 2006a). Nowadays, land is still considered as an important element of life, bearing in mind its association with people, society, state and sustainable development, in both physical and abstract manner.

The relationship between people and land is described differently in each country. This relationship basically defines the society's and state's point of view of the land in a country. Dale and McLaughlin (1999) underpins the relationship between people and land as of fundamental importance in every society and evident in the form of property rights. The level of state's control to the land could also be comprehended from this relationship as the world has evidenced the different ways of transferring the right of land to the people, such as full state control, communal forms of tenure, individual property rights and so forth (Dale and McLaughlin, 1999). It is also revealed from many works, such as Dale and McLaughlin (1999) and Zevenbergen (2002), that land and humankind is related to each other through rights and obligations of humankind to land. See Figure 3.1 for diagram of relationship between humankind, the broader context of people, society and state, and land.

Land is also correlated to sustainable development, both directly and indirectly. The term of sustainability refers to challenges of balancing economical and ecological development perspectives and acknowledging our collective responsibility of stewardship to the future generations (Dale and McLaughlin, 1999). According to de Soto (1993), as it is cited in Dale and McLaughlin (1999), most of land and/or property rights in developing countries are held informally, which impedes the land and/or property to enter the formal market as a negotiable asset. Another work of Feder *et al.* (1988), which is also cited in Dale and McLaughlin (1999), shown that

the link between land, in this case the security of land ownership, and economic performance is existed, although few limitation should be applied to the result of this work. The Feder's work demonstrated that the farmer in Thailand, with registered land, had a direct access to credit and the price of unregistered land was lower than its social value while the reverse was true for registered land. On the other hand, the scarcity of supply of land and the increasing number of population have always been creating competition on acquiring and exploiting the land. As the value of land becomes the bottom line of competition on the land, the link between the land and sustainable development is underpinned.



Adopted from Dale and McLaughlin (1999) and Henssen and Williamson (1990); as cited in Zevenbergen (2002)

Fig. 3.1 Relationship between humankind and land

Based on above mentioned facts, therefore the land needs to be managed appropriately. The process by which the resources of land are put into good effect is called land management (UN-ECE, 1996; cited in Enemark, 2005). Land management itself has been defined differently by different works, as it is viewed according to the objective of the work itself. In Barry's work, land management is operationally defined as a system embodying the strategic planning, policy development and policy implementation processes related to land, which includes programmes that *inter alia* address land occupation, land use, the natural environment, natural resources, agriculture, transportation and utilities (Barry, 1999). Albeit the broad definition of land management is given, Barry's work describes the land management systems hierarchy from the specific viewpoint of a cadastral system analyst, which is employed further in Barry's analysis. Enemark (2005) also argues that land management paradigm consists of three components, which are land policy, land information infrastructure and land administration infrastructure. In Enemark's land management paradigm, land administration infrastructure is argued as the operational component of land management paradigm, which implements other components of land management activities within context of a country.

In the context of a country, land policy is considered by Enemark (2005) as the most important component of land management paradigm since land policy is a part of a country's national policy on promoting objectives including economic development, social justice and equity, and political stability. Thus, land policy may be associated with security of tenure; land market; real property taxation; sustainable management and control of land use, natural resources and the environment; the provision of land for the poor, ethnic minorities and women; and measures to prevent land speculation and to manage land disputes (Enemark, 2005). In conclusion, land policy leads to the foundation of land administration and land information infrastructure within a country. Additionally, as being one of the fundamental systems in every country, the manner on how land management deals with the problem of land is basically influenced by macro environment including political, economic, technological, physical, legal and social elements (Barry, 1999). See Figure 3.2 for the system hierarchy in land management adopted from Dale and McLaughlin (1999), Barry (1999) and Enemark (2005), which considers as well the land administration point of view of this study.

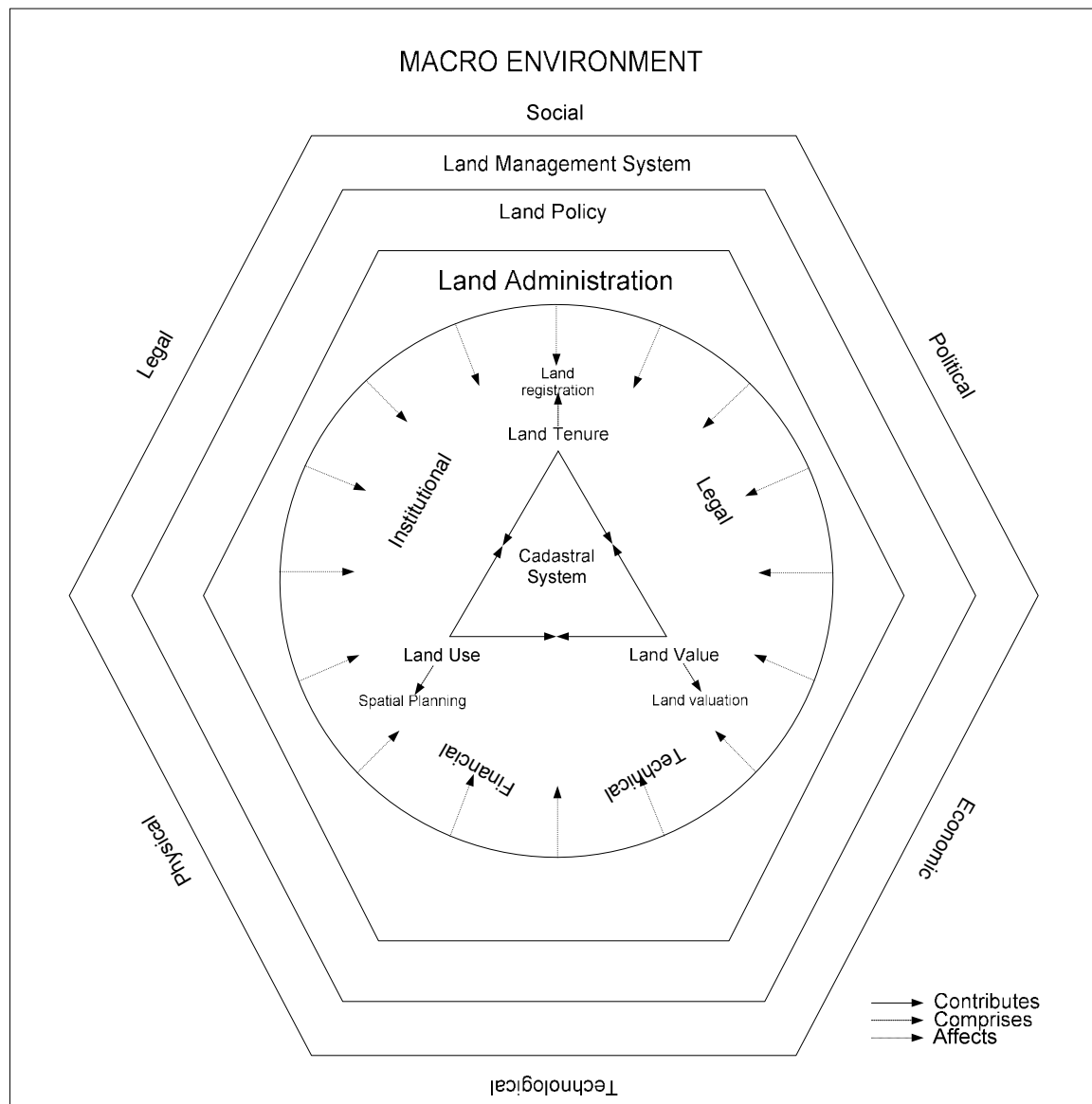
Having overviewed the land management system in this section, the next section, Section 3.2, describes the land administration system within the context of this study.

3.2 Land Administration

Adopting the definition from Dale and McLaughlin (1999) and Barry (1999), land administration is defined as an execution tool of land policy and comprises public sector activities on tenure, use, and value of land. Furthermore, the key components of land administration, which are land tenure, land use and land value, are interacting to each other within the scope of cadastral system and facilitate the operational of land administration (Enemark, 2005). See Figure 3.2 for details of system hierarchy in land management.

The concept of cadastre is difficult (Enemark, 2005) and impossible (Dawson and Sheppard, 1952) to identify, which is both terse and comprehensive. Basically, cadastre is just a record that identifies the individual land parcels/properties (Enemark, 2005). Furthermore, Dawson and Sheppard (1952), as cited in Dale and McLaughlin (1999), argues that distinctive character of cadastre is readily recognised and may be expressed as the marriage of technical record of the parcellation of the land through any given territory, usually represented on plans of suitable scale, with authoritative documentary record, whether of a fiscal or proprietary nature of the two combined, usually embodied in appropriate associated registers. Nowadays, most cadastral registers are linked to land value and security of right to land (Enemark, 2005), as well as to land use planning (Dale and McLaughlin, 1999). Therefore the term of cadastral system is more usable since this system include the interaction between the identification of land parcels, the registration of land rights, the valuation and taxation of land and property, and the present and possible future use of land (Enemark, 2005). Additionally, Mulolwa (2002) argues that cadastral system includes the organisational, legal, financial and technical arrangements, as well as human resources development that is adopted by Barry (1999) and Dale and McLaughlin (1999). These arrangements are needed for development, operation and maintenance of land administration (Mulolwa, 2002).

This section further explains the key components of land administration, which are land tenure in Section 3.2.1 and land use in Section 3.2.2.



Adopted from Dale and McLaughlin (1999), Barry (1999) and Enemark (2005)

Fig. 3.2 Land management hierarchy

3.2.1 Land Tenure

Land tenure basically describes the manner in which rights in land are held (Dale and McLaughlin, 1999). Dale and McLaughlin (1999) also describe that land tenure is defined by a broad set of rules, some of which are formally defined through laws concerning land and property while others are determined by custom. Additionally, Dale and McLaughlin (1999) argue that besides covering the rights to gift or grant land, buy and sell it, or mortgage it; land tenure also covers the rights to use the land subject to certain restriction and obligation. These arguments are in accordance with the relationship between humankind and land depicted in Figure 3.1.

Rights, restrictions and obligations to land are varied in one country to each other. Basically the form of rights, restrictions and obligations to land is based on combinations of group, state and individual land rights (Dale and McLaughlin, 1999). Furthermore, Feder and Feeny (1991), as cited in Dale and McLaughlin (1999), identify the category of land regimes, which are open access, communal or common, private and state land.

The basic concept of security of land right is basically based on recognition of land and the rights attached to it. Such procedure to recognise the legal interest, including ownership and/or use, in land is called land registration (McLaughlin and Nichols, 1989; cited in Zevenbergen, 2002). Dale and McLaughlin (1999) include as well the regulation of the character and transfer of land rights into the above mentioned well-defined legal interest. Additionally, Henssen and Williamson (1990), as cited in Zevenbergen (2002), explain the interconnection among concept described in Figure 3.1, land registration and cadastre. In the scope of land tenure, land registration concept is used to answer the questions on who the land owner is and how the land owner can be connected to the land, while the cadastral system concept answers the questions regarding the land itself (Henssen and Williamson, 1990). Henssen's and Williamson's argument also satisfies the inertial cadastral system triangle described in Figure 3.2.

The security of land right held within the scope of land tenure is further described in this section. Therefore, this section is divided into three subsections, which are Section 3.2.1.1, Principles and Features of Land Registration; Section 3.2.1.2, Classification of Land Registration System; and Section 3.2.1.3, Advancing Land Registration. Section 3.2.1.1, Principles and Features of Land Registration, portrays the principles and features of land registration system throughout the world to provide the basic of recognition of legal interest in land and asses land registration system effectiveness. Section 3.2.1.2, Classification of Land Registration System, describes the identified land registration regimes. Section 3.2.1.2 also provides recent improvements on land registration concept to upgrade and strengthen the registration function.

3.2.1.1 Principles and Features of Land Registration

Basically there are existed two factions of land registration principles. The first faction is land registration principles proposed by Kurandt, which are focusing on land registration activities (Zevenbergen, 2002). Kurandt's principles are used as the base for German's system of title registration (Zevenbergen, 2002). According to Kurandt (1957), as cited by Zevenbergen (2002), those land registration principles are (1) speciality principle, (2) booking principle, (3) consent principle and (4) publicity principle. Henssen (1995), as cited in Zevenbergen (2002), defines above mentioned Kurandt's principles. According to Henssen (1995), the speciality principle implies that in land registration, and consequently in the documents submitted for registration, the concerned subject (man) and object (land) must be unambiguously identified. Further in Hensson's work, the booking principle is said to imply that a change in land rights on an immovable property, especially by transfer, is not legally effectuated until the change or the expected right is booked or registered in the land register. Henssen (1995) also explains the principle of publicity as implying that the legal registers are open for public inspection and also that the published facts can be upheld

as being more or less correct by third parties in good faith, so that they can be protected by law. The last of Kurandt's principle, consent principle, implies that the real entitled person who is booked as such in the register must give his consent for a change of the inscription in the land register.

Another faction of land registration principles, which is focusing on more result oriented principles, is frequently found in Anglo-Saxon literature attributed to Ruoff (Zevenbergen, 2002). According to Zevenbergen (2002), Ruoff claims that the successfulness of a title registration is depending to the degree which local law and local administration take into account (1) mirror principle, (2) curtain principle and (3) insurance principle. Simpson's work provides the definition of above mentioned principles. The mirror principle involves the proposition that the register of title is a mirror which reflects accurately and completely and beyond all argument the current facts that are material to title (Simpson, 1976; cited in Zevenbergen, 2002). Simpson (1976) also argues that the curtain principle provides that the register is the sole source of information for proposing purchasers, who need not and indeed must not concern themselves with the trusts and equities that lie behind the curtain. Finally, Simpson (1976) argues that the insurance principle ensures anyone who suffers losses, because of the failure of mirror principle to provide correct reflection to the title and a flaw appears, must be put in the same position, so far as money can do it, as if the reflection were a true one.

The both faction of principles above could be achieved if they are included in the relevant law, as well as by providing the clear definition and directives on every process regarding land registration (Zevenbergen, 2002). As each country has its own land-related law and regulation, these principles may be implemented differently in each country. Additionally, Henssen (1995), as cited in Zevenbergen (2002), argues that the first mentioned faction of land registration system principles is more useful to be employed as the identifier of differences between systems.

Besides principles above, there are also several features that are expected from land registration system posted by Kurandt (1957), Dowson and Sheppard (1995), Simpson (1976) and FIG (1995), as they are cited in Zevenbergen (2002). These features are critical factor in measuring effectiveness of land administration system, particularly land registration system (Zevenbergen, 2002).

Kurandt (1957) identifies four features expected from German's title registration as clarity, correctness, legal security and understandability. In the Anglo-Saxon literatures, it is identified seven features expected from land registration as security, simplicity, accuracy, cheapness, expedition, suitability to its circumstances and completeness of the record (Dowson and Sheppard, 1956 and Simpson, 1976; as cited in Zevenbergen, 2002). According to Zevenbergen (2002), the features founded on Anglo-Saxon literatures are mostly attributed to Fortescue-Brickdale (1913), except the 7th feature that is added by Dowson and Sheppard (1956).

FIG also identifies the features expected from land registration system, which are recognised by FIG as a number of well recognised criteria for measuring the actual or potential success of a cadastre, as security, clarity and simplicity, timeliness, fairness, accessibility, cost and sustainability. FIG (2005) further describes the importance of these features. The security feature allows the land market operate effectively and

efficiently, providing access to credit held by financial institutions, as well as avoiding duplication of records in case of disaster and securing the records from damages and/or changes by unauthorised persons. FIG (2005) argues that the clarity and simplicity feature assist the system to avoid the its low performance caused by complex forms, procedures and regulations. The complex forms, procedures and regulations are argued by FIG as the factor that may discourage use of the system. Additionally, simplicity is argued by FIG as facilitating cost-minimised, fair access and maintenance of the system. Timeliness feature is related to the presentation of up-to-date information in a timely fashion and wide coverage of the system. The fairness feature should allow the separation of subjective political interests, as well as equitable access to the system that is reflected from the decentralised offices, simple procedures and reasonable fees. Regarding the accessibility feature, the system should be able to provide efficient and effective access to all users, especially within the constraints of cultural sensitivities, as well as legal and privacy issues. FIG also argues that the system should be operated in a way that costs can be recovered fairly, without unduly burdening users. Finally, sustainability feature implies that the organisational and management arrangements, the procedures and technologies and the required educational and professional levels are appropriate for the particular jurisdiction. This final feature is argued as being able to ensure that the system is maintained over time, including procedures for completing the cadastre in a reasonable time frame and for keeping information up-to-date.

Additionally, Palmer (1996), as cited in Dale and McLaughlin (1999) argues that indemnity is also an important feature to ensure the land administration and land registration system performed effectively. As it is mentioned in Dale and McLaughlin (1999), several jurisdictions, such as Sweden, England, South Africa and Namibia, provide indemnification to the person who is suffering loss due to the failure of registry official.

3.2.1.2 Classification of Land Registration System

There exist various land registration systems throughout the world. Most of classification usually assists debates as it usually emphasises a relative details while on the same time neglecting several other characteristics of a given system (Zevenbergen, 2002). Therefore, this section is highlighting several classifications of land registration system identified from some literatures, such as Zevenbergen (2002), Barry (1999), Dale and McLaughlin (1999) and so forth. As it is summarised from Dale and McLaughlin (1999), Zevenbergen (2002) and Barry (1999), the identified classifications of land registration system are based on (1) registration system, (2) adjudication, (3) boundary definition, (4) dispute resolution and (5) surveying and mapping system.

Registration System

The classification of type of registration system is basically originated from identification on how the acknowledgement and alienation of the land is recorded. Dale and McLaughlin (1999) identify the type of registration system as private conveyancing, registration of deeds and registration of title. Additionally, Larsson (1991), as cited in Barry (1999), argues that at the most basic level, land right may be conveyed by oral agreement.

Oral Agreements and Symbolic Delivery

This type of registration system is mostly appeared in early system of law and usually involving the community knowledge. Barry (1999) identifies that the community knowledge includes either witnessing or verbal affirmation of a contract. This type of registration is argued as effective to be implemented within small community. The oral agreements could happen either in the division or transfer of land. Symbolic act is usually performed in the transfer of land. Simpson (1976) argues that handing over of turf or a twig in the presence of witnesses used to be adequate to safeguard not only the purchaser but also the third parties that have interests in land.

Private Conveyancing

The private conveyancing system allows the acknowledgement and alienation of land to be performed by private individuals related to the event (Dale and McLaughlin, 1999). Mostly, an intermediary such as notary is involved in the event. The interests in land are transferred by the signing, sealing and delivery of documents between private individuals with no direct public notice, record or supervision (Dale and McLaughlin, 1999). Dawson and Sheppard (1952), as cited in Barry (1999), add that in Britain the system is administered by solicitors who draw up an abstract of title, which attempts to trace all transactions in a land parcel for the previous forty years. This basically ensures the security of tenure. Unfortunately, this system could become very complex and expensive. Barry (1999) describes that England used to experiencing the incomplete lineage of land and defective description of the land.

Registration of Deeds

Henssen (1995), as cited in Zevenbergen (2002), identifies a deed registration system as the registration of the deed, a document which describes an isolated transaction, itself. Henssen (1999) argues that the deed registration is concerned with the registration of the legal fact.

Dale and McLaughlin (1999) describe the three basic elements in deeds registration as the logging of the time of entry of a property document, the indexing of the instrument and the archiving of the document or a copy thereof. Additionally, Nichols (1993), as cited in Dale and McLaughlin (1999), lists the three core principles of deeds registration system, which are security, evidence and notice and priority. Regarding the security principle, Nichols (1993) argues that registration of a document in a public office should provide some measure of security against loss, destruction or fraud. From the evidence principle emerges that registered documents can be used as evidence in support of a claim to a property interest, even though they cannot provide an assurance of title. Finally, notice and priority principle emerges that registration of a document gives public notice that a property transaction has occurred and, with exception, the time of registration provides a priority claim.

Furthermore, Henssen (1995) identifies that this deed is evidence that a particular transaction took place, but it is in principle not in itself proof of the legal rights of the involved parties and, consequently, it is no evidence of its legality. In order to avoid erroneous transfer of deed, the ostensible owner must trace his ownership back to a good root of title. Additionally, Kleyn and Boraine (1992), as cited in Barry (1999),

argue that state accepts no responsibility for the correctness of the register or for errors or omissions in the documentation.

Registration of Title

Zevenbergen (2002) argues that title registration is the most refined form of land registration. A title registration according to Henssen (1995), as cited in Zevenbergen (2002), records the legal consequence of the transaction, but not the deed that describes the right and the transfer of rights.

The advance feature of title registration, if it is compared to other types of land registration, is the parcel-based registration system (Zevenbergen, 2002). This system should allow a parcel to be well-defined, including information regarding its boundary and rights attached to it, which directly relates to the information regarding the owner of certain land. As the registry information is usually kept in a public office of the right, the holder of the rights to land enjoys the state's protection. Simpson (1976), as cited in Zevenbergen (2002), adds that registration of title acts as a warranty of title in the person registered as owner and bars adverse claims. Additionally, Lawrence (1980), as cited in Zevenbergen (2002), argues that there are four more features of title registration. The above mentioned four features are as follows:

1. Title registration constitutes two separate, but related, records: an unambiguous definition of all land parcels represented in maps or plans and a descriptive record giving all relevant information;
2. Title depends on the act of registration, not on documents or on judicial orders, while dealings are affected by an entry on the land register, and by no other means;
3. Registration may be applied selectively to particular areas, but compilation is compulsory;
4. An important objective is to render unnecessary the trouble and expense of repeated investigations of title. Thus anyone who purchases on the register for valuable consideration and in good faith from a registered proprietor acquires and indefeasible title, notwithstanding any defect in the vendor's title.

Based on technical aspects on describing the parcel, Henssen (1995) argues that there are at least existed three different groups of title registration, which are the English group, German/Swiss group and Torrens group. The English system is identified in England, Ireland, some Canadian provinces and Nigeria. Zevenbergen (2002) argues that the English registration system fulfils almost all five above mentioned features. The emphasis of the system lies with the legal aspects since it does not involve the cadastre. The sporadic registration is usually used for certain cases like a sales contract. The index map of the area is not necessarily needed before commencing the registration as the registry office usually uses large scale Ordnance Survey topographic maps. As the English registration system combines above mentioned aspects with the general boundary type (further explained in section of boundary definition within Section 3.2.1.2), Zevenbergen (2002) argues that this combination allows for a quick and relatively cheap start. Zevenbergen (2002) also mentions that the digital index maps in England and Wales were almost completed on 2002. The administrative body of land registration system in England and Wales is a central

agency called the Land Registry. This body adheres to the ministry of justice and the Chief Land Registrar has some judicial powers.

The English system had been evolved in such way to be able to overcome the complex land registration problem (Simpson, 1976; as cited in Zevenbergen, 2002). In the mid of 19th century, England was experiencing the private conveyancing, which was then replaced by a very basic deeds registration in several region. By then problems occurred due to the privacy protection scheme and multi-tiered system of land tenure. Palmer (1996), as cited in Zevenbergen (2002), identifies that English common law enabled title to land to be acquired without the consent of the previous owner by a process that did not have a divesting effect, such as the system was a multi-titular one and a number of people might have title to the same property. Therefore, there was a need to accompany the introduction of the title registration to English common law jurisdictions with certain simplification of the land law. Simpson (1976) describes that title registration could only be successfully performed after 60 years of the introduction of title registration in England by allowing 1925 simplifications on English common land law. Palmer (1996) further argues that the adoption of a title registration system in an English common law jurisdiction affects a move away from a multi-titular system to a uni-titular one. The implementation of English land law in territories, which are used to be occupied by British rule, seldom emerged the above mentioned problems as these territories managed to introduce deeds registration in an open and more effective way than England did (Simpson, 1976; as cited in Zevenbergen, 2002). However, problems caused by multi-titular land law can still be found in most territories since the simplifications of English common land law were usually not adopted. Additionally, Mulolwa (2002) and Zevenbergen (2002) add that pre-existing customary land tenure arrangement still could be found to be implemented parallel and/or intertwined with the English land law.

The German/Swiss registration system could be found in Germany, Austria and Switzerland, as well as territories that are used to be ruled by Austrian-Hungarian Empires such as Croatia, Czech Republic, Hungary, Slovakia, Slovenia and in some parts of Poland and Romania (Henssen, 1995; as cited in Zevenbergen, 2002). In the German/Swiss registration system, transfer of rights to land was simplified by means of good cadastral surveys and well-functioned deeds registry. According to Zevenbergen (2002), the main characteristics of this registration system could still be found in above mentioned territories, even though jurisdictions, borders and even social-economical principles had been changed.

As described in Zevenbergen (2002), the title register is called land book. Basically, the structure of land registers in the German/Swiss system is similar to the English system, except that the land owner does not enjoy a real state guarantee as the right holder is only protected by public faith and the counter-claims can be lodge within a certain period to prove a better right. Mostly it appears that the base documents for application could not be prepared by the parties involved only. The involved parties are usually accompanied by notary, as well as lawyers as professional experts, on preparing base application documents. The works in this system are divided among lots of parties, such as courts who keep the land book and private licensed surveyors who perform the cadastral surveying. As this system is involving many public and private institutions, the well-performance of each practitioner and the cooperation

among them are needed to allow the system working well. The merging of registry and cadastre into one organisation even allows the system to be well implemented, such as in the case of Czech Republic, Hungary and Slovakia.

The Torrens registration system could usually be founded in Australia, New Zealand, some provinces of Canada, some parts of the USA, Morocco, Tunisia and Syria (Henssen, 1995; as cited in Zevenbergen, 2002). This system was firstly emerged when Sir Robert Torrens introduced the Real Property Act in 1858 in South Australia. This system was formulated to combat the problems of uncertainty, complexity and cost associated with old system title (Wikipedia, 2006b). The important emergent feature of this registration system is that the land title maintained by state is indefeasible. The indefeasible land title is due to careful evaluation of unbroken chain of title for certain period. However, there exist exceptions that can penetrate the indefeasibility of land title *inter alia* (Wikipedia, 2006b):

1. Those listed on the title;
2. Those claiming the land on a prior folio;
3. Where the land is included by wrong description on the part of the Registrar and the proprietor is not or has not derived title from a purchaser 'for value';
4. Paramount interests. These interests, although even possibly unregistered, are 'superior' to interests that are registered;
5. Fraud, where fraud is committed by the registered interest holder [principle of immediate indefeasibility];
6. *In personam*, where it can be shown that there was some contractual promise or undertaking by the registered party *vis-a-vis* the unregistered party;
7. Inconsistent legislation, where legislation is enacted after the Torrens legislation is inconsistent with the Torrens legislation, the later piece of legislation will prevail;
8. Volunteer, where the registering party acquires the interest for no consideration, such as bequeathed in a will.

Adjudication

Adjudication is defined as an authoritative ascertainment of all existing rights in any particular parcel of land (Simpson, 1976; as cited in Barry, 1999). Based on definition of adjudication posted by Simpson (1976), the adjudication process is intending to answer questions regarding the land and the rights attached to it, such as questions posted by Crocombe (1984), as cited in Barry (1999), as follows:

- What unit of people should be registered?
- In whose name should group rights be registered?
- What unit of land should be registered?
- What rights should be registered?
- How should rights be registered?
- When should they be registered?

Furthermore, Barry (1999) argues that the above questions provide a checklist for assessing the registration component.

The above set of questions is actually led to another important question in what means those questions could be answered. The answer lies in the above mentioned adjudication's definition, which is an authoritative ascertainment.

Basically, there exist two kinds of authoritative ascertainment, which are sporadic and systematic adjudication (Dale and McLaughlin, 1999). Sporadic adjudication is held whenever and wherever it is needed, such as when a transfer of rights is about to take place or when an owner so requests, with no order of sequence. On the other hand, systematic adjudication is planned and held in order of sequence to determine all rights in pre-defined area at the same time.

The last but not least, Crocombe (1984) also posts one last question relevant to adjudication, which is how the register can be maintained. From the identification of registration system in the previous section, it reveals that the register could only be efficiently maintained as it is backed by law (Simpson, 1976; as cited in Zevenbergen, 2002). Therefore, this explains why the authoritative word is needed to accompany word of ascertainment in the definition of adjudication posted by Simpson (1976).

Boundary Definition

Boundaries mark the limit of each tract of land (Dale and McLaughlin, 1999). Dale and McLaughlin (1999) also mention that a boundary, in legal term, is defined as an imaginary line that divides two adjoining lands. The importance of boundary definition is due to origin of the land as a continuum, while the object of the land registration, which is parcel, is always a part of that continuum (Zevenbergen, 2002). Practically, the imaginary line that represents the boundary could be characterised by fences or hedges. However, as fences and hedges in law are regarded as guards against intrusion and not necessarily indicates, or even coincide, with the position of legal boundary, therefore there is a need to formalise the form of boundary.

Many works have identified forms of boundary, especially the works of Dale and McLaughlin (1999) and Barry (1999). Dale and McLaughlin (1999) identify two forms of boundary, which are fixed and general boundary, while Barry (1999) suggests another alternative form of boundary that is topological boundary.

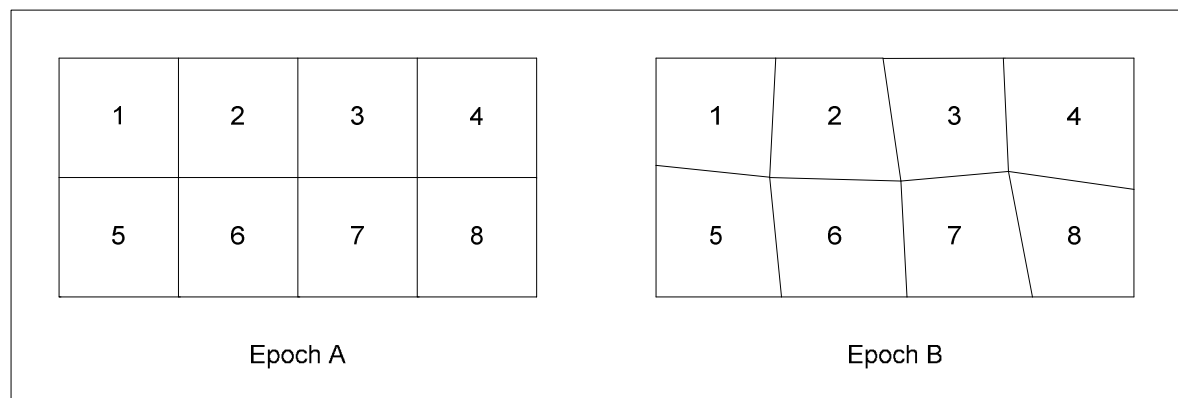
Dale and McLaughlin (1999) define the fixed boundary as the precise line of the boundary that can be determined. The use of this form of boundary reflects that the precise position of a boundary has been determined. Furthermore, Dale and McLaughlin (1999) identify three categories of fixed boundary as those that are:

1. Defined on the ground prior to development and identified, for example, in document of sale;
2. Identified after development, for example when line of the boundary is agreed between neighbours at the time of adjudication;
3. Defined by surveys to specified standards.

On the other hand, the use of general boundary is emerged when the official register only shows the approximate line of the boundary, which precise details can only be established by further investigation on the ground (Dale and McLaughlin, 1999). Dale and McLaughlin (1999) further categorise the general boundary as those where:

1. The ownership of the boundary feature is not established, so that the boundary may be one side of a hedge or the other or down the middle;
2. The boundary is the indeterminate edge of a natural feature such as a forest;
3. The position of any boundary is regarded as approximate so that the register may be kept free from boundary disputes.

Topological boundary system comprises boundaries that are not rigidly defined in geometric space and allows for fluid land occupation patterns (Barry, 1999). Topological boundary term is adopted from the term of topology, which is concerning the maintenance of relationship between neighbouring objects under distortion such as adjacency, connectivity and containment (Laurini and Thompson, 1992; Dale and McLaughlin, 1988; as cited in Barry, 1999). This boundary system is argued as being a special form of general boundary system that permits the shifting of the *de jure* boundary, the mathematical lines, to match the positions of the fences lines as and when they are moved (Barry, 1999). See Figure 3.3 for example of implementation of topological boundary system in two different epochs.



Source: Barry (1999)

Fig. 3.3 Topological boundary system

Dispute Resolution

At least there exist two different systems that focus on handling the land dispute, which are negative vs. positive system and race vs. notice statutes.

Negative vs. Positive System

There are two essences of the negative vs. positive system regarding the dispute resolution, which also distinct this system from other classified systems. First of all, this system creates clear distinction between negative and positive system from guaranteed and indemnification of land title, while the second property of this system creates a distinction between a negative and positive system from continuation of rights record (Zevenbergen, 2002).

The first property of this system reveals that under the positive system the registrar or his or her employer, which is usually the state, guarantees the titles that are registered (Zevenbergen, 2002). Therefore, every records kept in the registrar are considered by

law as correct and damage caused by mistakes is redeemed by the state or the registry. On the other hand, the negative system provides no guarantee regarding the land title except mistakes caused by keeping the registers. Moreover, de Haan (1992), as cited in Zevenbergen (2002), lists the main characteristics of the negative system, which are amended in a positive system, as follows:

1. Lack of guarantees for completeness, correctness and validity of the inscribing for the transferee;
2. The inactiveness of the registering institutions in connection therewith;
3. Lack of a complete registration of interest themselves, with the accompanying guarantees;
4. Lack of a financial guarantee in the form of liability for the state for the whole registration system.

However, the positive system could not be said as the perfect system as well since the registration of land title is often time consuming and requiring depth investigation in all kinds of aspects of the purchaser, the seller and their agreement (Zevenbergen, 1996; as cited in Zevenbergen, 2002). Even though the negative system does not give guarantees, this system offers brief registration process and the registering institution dose not interfere much with the seller and purchaser.

The second property of this classification is regarding the continuation of rights record. Under the negative system, all transaction records and any changes occur in them are maintained (Zevenbergen, 2002). Unfortunately, this transaction records do not provide a title to the land and can only act as a witness in the dispute resolution. In contrary, the positive system provides a title, which is backed by a government guarantee, to the new owner and erases the previous owner from the registry (Palmer, 1996; as cited in Zevenbergen, 2002).

Race vs. Notice Statutes

This system of dispute resolution was formulated due to the state's efforts on giving incentive to register a deed. Most of civil law systems of deeds registration offers this incentive by giving a priority to a *bona fide* purchaser who register first over others (Moyer and Fischer, 1973, as cited in Zevenbergen, 2002).

In this classified system of dispute resolution, the key property to distinct two *vis-à-vis* statutes are whether there exist priority to the recorded deeds. Simpson (1976), as cited in Zevenbergen (2002), identifies that under the race statute there exist prioritisation based on the order in which instruments are registered. Unfortunately, as this statute allows for nearly complete reliance on recorded title, even if the grantee knew of a prior unregistered transfer, race statute could be used for fraudulent purposes (Moyer and Fischer, 1973; as cited in Zevenbergen, 2002). Therefore, it was introduced notice statute to avoid such fraudulent purposes.

According to Simpson (1976), as cited in Zevenbergen (2002), notice statute offers a security to the *bona fide* purchaser for value without notice of other competing claims. However, the registration must be affected before the later purchase occurs and not merely before it is registered. Therefore, a subsequent purchaser can rely on the

register without having to record his own title document for the subsequent purchaser without notice will always win.

As Moyer and Fischer (1973), as cited in Zevenbergen (2002), identify that it is not possible to rely solely on the recording system due to the fairness as between two conflicting claimants, therefore it was further introduced the race-notice statute. This statute manages a subsequent purchaser prevail against a prior purchaser when the subsequent purchaser is without actual or constructive notice of the earlier claim and registers before the prior purchaser does (Simpson, 1976; as cited in Zevenbergen, 2002). Additionally, some countries have introduced a grace periods before the priority is determined by the order of registration (Zevenbergen, 2002).

Surveying and Mapping System

The author argues that classification of land registration systems under the scope of surveying and mapping system could be observed from two different points of view, which are surveying and mapping, as well as institutional arrangement that supports surveying and mapping processes. The institutional arrangement is argued as important class within the classification of land registration system given that the surveying and mapping end results would be maintained by one or more in-charge institution(s).

Surveying and Mapping

This class of classification could be divided into four sub-classes, which are surveying method, the source of evidence, the data storage and coordinate system. There exist many methods of surveying. However, the most usable surveying methods are terrestrial surveying and aerial photogrammetry (Barry, 1999). The method in favour is usually chosen based on the accuracy requirements, availability of equipment, as well as the availability of necessary technical supports.

Regarding the source of evidence, Zevenbergen (2002) argues that there are three basic techniques for measuring all boundary points. The first and the simplest method is by measuring the distances between all boundary points relative to one another (Zevenbergen, 2002). Thus, as there are only few points that have been tampered with, boundary points would be easily traced, even it is possible to reconstruct their original position. Zevenbergen (2002) adds that the further improvement of this method could be reached by measuring as well angles or bearings. The second basic technique would be the graphic representation of points of the unit of land on paper (Zevenbergen, 2002). The simplest result of this technique is the description of the configuration at large, not scaled and only concentrating on the topology. When it is combined with certain survey techniques, the result would be a reliable overview of the unit of land at certain scale. The third method is the employment of special measuring instruments, such as plane table (Zevenbergen, 2002). This results a direct graphic representation.

Concerning the data storage method, the data is usually stored in analogue and/or digital form. Furthermore, there are two kinds of storage methods, which store maps and/or coordinates only.

Finally, the fourth classification sub-class is regarding the coordinate system. As described by Zevenbergen (2002), many countries have developed national coordinate systems, including for cadastral surveying, while the other countries adopt different coordinate system for topographic and cadastral mapping as each mapping process hold different requirements.

Institutional Arrangement

In most of the countries, governmental institution is in charge on land registration and cadastre, either one or more governmental institutions (Zevenbergen, 2002). Zevenbergen (2002) also explains that in-charge institution(s) on land registration and cadastre could be ranged from being a part of the judiciary, different ministries to even an independent land registry. In the case of independent land registry, it could fall under different ministries as well (Zevenbergen, 2002).

Zevenbergen (2002) further provides evidences on the involvement of private practitioners. The involvement of private practitioners is ranged from being a part of the legal system (e.g. notaries, conveyancers or solicitors) to fully independent person or institution (e.g. private licensed surveyor).

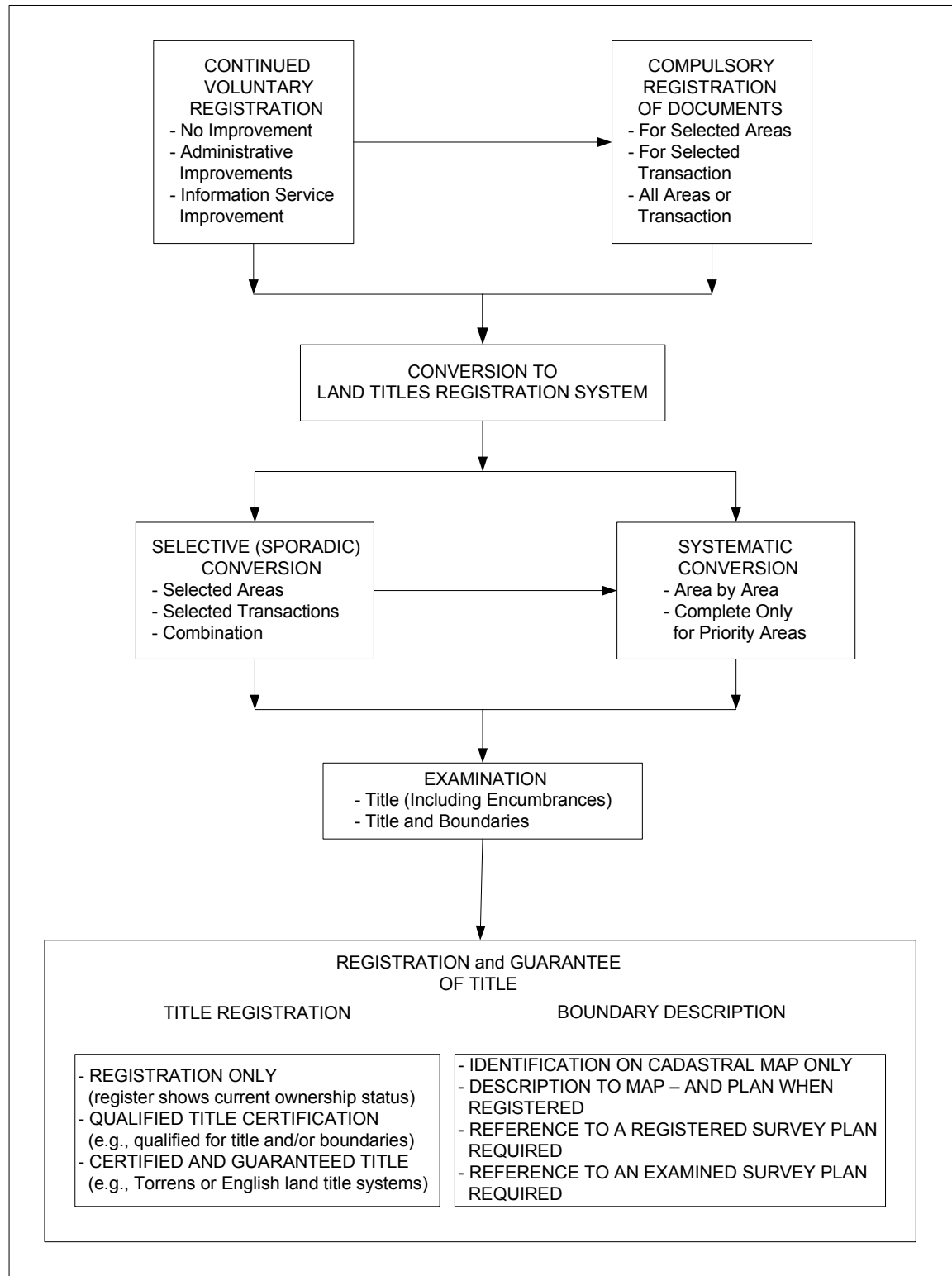
Cooperation among public-public and public-private institution could be considered to be an ideal state in land registration and cadastre (Zevenbergen, 2002). Zevenbergen (2002) given an example of the Austrian solution, which shared the land registry database but keeping the responsibility of each involved-institutions separately.

Besides cooperation, there is another concept for strengthening land registration. The concept proposed by Nichols (1993) focuses conversion to title registration system followed by continued land registration. See Figure 3.4 for details.

3.2.2 Land Use

Land use has been described within many works from different point of views. In this study, land use is defined according to its description in Dale and McLaughlin (1999) as it is the most relevant definition for this study. Land use, according to Dale and McLaughlin (1999), is defined as the economic and cultural activities practised upon the land. Moreover, Dale and McLaughlin (1999) distinct the term of land cover from land use, as it comprises the physical state of the land and describes the quantity and type of vegetation and other material that occurs on the earth's surface. However, Dale and McLaughlin (1999) identify that land use and land cover are interconnected by human actions, which directly alter the physical environment.

As human interference and natural processes, which are mostly interrelated to human action, could change the landscapes over the time, therefore the ways in which the land is or will be used has an important role on sustainable development (Dale and McLaughlin, 1999). It is a must to determine how land is to be developed, as well as the monitor on how land is developed. Therefore, a tool is needed to achieve the sustainability.



Source: Nichols (1993); as cited in Dale and McLaughlin (1999)

Fig. 3.4 Strengthening the registration function

Spatial planning is argued as the tool to achieve the sustainability in the scope of land use as a component of land administration. Spatial planning is comprised of land use planning and land use movement planning (Tarigan, 2005). Additionally, Dale and McLaughlin (1999) add land use control as the component of spatial planning.

This section further explains the characteristics of spatial planning in Section 3.2.2.1 and spatial planning classification in Section 3.2.2.2.

3.2.2.1 Spatial Planning Characteristics

It is mentioned earlier in Section 3.2.2 that spatial planning is comprised of land use planning, land use implementation planning and land use control. Therefore, there exist close relation between planning and implementation. The fact that Barret and Hill (1984), as cited in Larsson (1997), describes that implementation must be regarded as an integral part of the policy process rather than an administrative 'follow on' from policy making. Barret and Hill (1984) argues that political process by which policy is mediated, negotiated and modified during its formulation and legitimation do not stop when initial policy decisions have been made but continue to influence policy through the behaviour of those responsible for its implementation and those affected by policy acting to protect or enhance their own interest. Furthermore, Barret and Hill (1984) also argue that policy, as the framework for action, is only really created during the implementation process. Hence, the characteristics of spatial planning, which are further explained in this section, are comprised of characteristics of both spatial planning and its implementation. These characteristics have been identified as parameters to evaluate the successfulness of spatial planning and its implementation.

Larsson (1997) identifies the parameters to evaluate the successfulness of spatial planning as comprises of realism, up-dating, binding power and participation/consultation. Larsson (1997) argues that there exist too many plans that are not realistic. These plans do not seem to incorporate consideration of limited possibilities for implementation, the lack of financial resources, weak institutional support or the low steering power of the plan. In the case of developing countries, the spatial plans are often considered to be more architectural designs. The realistic studies on the best guidelines for more organised development in financially and institutionally weak surroundings with large sectors is usually being considered as irregular studies. Even there exist unrealistic plans in industrial countries, whichever caused by not considering the hard economic realities, technical systems, existing implementation base, or existing demands for planned sites and facilities. The unrealistic plans result non-developed or only partially developed plans.

Furthermore, Larsson (1997) categorises the up-dating as the second most important characteristic of spatial planning since the situational changes should allow the plan to be revised. This is due to the long-term view of comprehensive plan. Even the short-term plan must often be successively implemented during a longer time period. The non-revised plan usually allows a severe hindrance to suitable development as there might be better solutions rather than those written in plan. The essence of the importance of up-dating is that the spatial planning should allow flexibility to cope the situational changes.

The third characteristic of spatial planning is binding power. Larsson (1997) at least identifies two kind of spatial planning in the scope of binding power, which are plan-led development that bounds the development to the adopted plan and system that allows a great deal of discretion to happen. The plan-led system is usually considered as the most probable system of spatial planning since the second system is likely to lead the uncontrollable implementation of spatial planning. On the other hand,

Larsson (1997) also argues that a rigid connection to an official plan is not always the best practical solution, especially when the plan is not up-to-date. Thus, Larsson (1997) suggests the spatial planning instrument to keep the balance between binding and flexibility.

Another characteristic of planning is participation and consultation. Larsson (1997) argues that this parameter will assist a better implementation environment due to cooperation among authorities, land owners and other citizens.

In the scope of spatial planning implementation, the identified characteristics are related to planning-implementation institutional aspect. Those characteristics are institutional connection to planning-implementation, unambiguous division of responsibility, power of relevant institutions, decentralisation, financial base and personal resources (Larsson, 1997). As mentioned earlier, the link between planning and its implementation is considered as an integral part on evaluating spatial planning. There are evidences that planning becomes easier to implement if the planners and those who are responsible for implementation work together under the same institution. The existence of a subordinate board, which could lead the implementing authorities to work based on the plan, could also ease the planning implementation. However, Larsson (1997) argues that if there exist no interconnection between planners' and its implementers' institution and the bottom-up communication is bad, there is an intention of less commitment given by both actors of spatial planning.

In accordance with the first character of spatial planning implementation, the clear division of responsibility is also regarding the institutional aspect of in planning implementation. Larsson (1997) argues that the foundation of an institution responsible for implementation of the plan is preferable. In case that there exist overlapping duties and competing interest among public institution, this will lead an essential field to be left over. Larsson (1997) also argues that it is better to establish special project organisation to cope large planning implementation projects.

Concerning the third characteristic of planning implementation, which is institutional power, Larsson (1997) argues that there are two prominent prerequisite. The first prerequisite is that the local authorities should be in charge within the planning implementation. Larsson (1997) argues that centralised implementation usually results a lengthy proceedings and bureaucracy. However, it is mostly true that in some countries the local authorities are lack of financial and personal resources on implementing the plan. Furthermore, a weak institution has also been considered as an important obstacle to efficient implementation and one of the main reasons for the gap between plan and implementation. The corrupt institution, intervention from powerful interest in which *vis-à-vis* the plan and large bureaucracy are identified as the causes of delicateness of authorities on implementing spatial plan. Therefore, Huque (1987), as cited in Larsson (1997), argues that less public intervention will lead to the better implementation of spatial plan. Larsson (1997) also argues that a gradual and systematic improvement of the quality of the institutions, an institutional strengthening, is one essential way of making planning implementation more efficient.

Decentralisation is also considered as of important characteristic of planning implementation (Larsson, 1997). Decentralisation is acknowledged as the transfer of

planning, decision making, or administrative authority from the central government to its field organisations, local administrative units, semi-autonomous and parastatal organisations, local governments or non-governmental organisations. However, it is important to address that decentralisation is more than just deconcentration, which is defined as the transfer of national government staff to local administrative offices without the transfer of authority (Larsson, 1997).

Financing is also of important feature of implementation of spatial plan. Larsson (1997) argues that 'wishful thinking' without considering time schedule, as well as the connection with the meagre economic resources, will lead to non-developed or partially developed plans. In order to comply with economically sound planning implementation, therefore Larsson (1997) suggests that the ways to finance the project in the short- and long-term, close cooperation among the planners, the technical offices and the budgeting office and public-private cooperation should be investigated.

Finally, personal resources is also argues as an important feature on measuring successfulness of planning implementation (Larsson, 1997). Competent staffs are required for the actual work on the ground, as well as for preparations of different kinds. As local authorities are often short of such staff, it impedes the planning implementation (Larsson, 1997).

3.2.2.2 Classification of Spatial Planning

There are only few literatures that provide classification of spatial planning. As spatial planning is a specific form of planning, this section therefore describes firstly the classification of planning in general and secondly the classification of spatial planning argued by Dale and McLaughlin (1999).

Planning has been categorised by many works in a different point of view, such as the vision, scope of planning fields, institutional aspect and so forth. Glasson (1974), as cited in Tarigan (2005), identifies at least there are four types of planning, which are (1) physical vs. economic planning, (2) allocative and innovative planning, (3) multi-vs. single-objective planning and (4) indicative vs. imperative planning. Additionally, Tarigan (2005) argues that in Indonesia there exist three more types of planning, which are top-down vs. bottom-up planning, vertical vs. horizontal planning and participative planning.

The first type of planning, physical vs. economic planning, is a classification that is based on the contents and/or material of the plan itself (Glasson, 1974). Physical planning is defined as a plan for changing and/or usage of regional physical structures, such as land use planning, transportation/communication routes planning, and so forth. On the other hand, economic planning comprises of plans to change regional economic structure and increase the welfare. In conclusion, economic planning is based on market mechanism, while physical planning is based on technical appropriateness. However, both type of planning could not be separated to each other since physical plan is considered as an important part of economic plan.

Secondly, Glasson (1974) argues that allocative vs. innovative planning is classified based on the difference of vision of both planning types. The vision of allocative

planning is to comply with the higher level plan. Thus, this kind of plan comprises of coordination and synchronisation of the working system managed under this level of plan in order to achieve the goals of the higher level plans and make sure that the system is working efficiently and effectively. Because of its nature, this type of planning is also named as regulatory planning. On the other hand, innovative planning allows the planners to formulate the objectives of the plan using the most suitable procedures and methods. This type of planning is likely to be more flexible than the allocative planning. As the first type of planning, there is a possibility that both allocative and innovative planning employed in a plan.

Furthermore, Glasson (1974) identifies that single and multi objective planning are differing in the scope of the plan. Multi objective planning usually has an objective that could only be achieved if the objectives of the lower level systems have firstly realised. Thus, multi objective planning has several intermediate objectives that lead to the achievement of the main objective of the plan. On the contrary, a single objective planning has only one target that is expected to be achieved. In relation to the first type of planning, Glasson (1974) argues that an economic planning is mostly categorised as having multi objective, while a physical planning could have both single and multi objective.

Finally, Glasson (1974) argues that the difference between indicative and imperative planning is based on the content of the plan and level of authorisation of the implementer institution. Basically, the objective of indicative planning is quite general and abstract. This kind of planning usually does not include procedures and methods for achieving planning objective. Conversely, in imperative planning, the objective, procedure, implementation, time allocation, material and tools of the planning are stated clearly. Additionally, Tarigan (2005) argues that there exists another form of this type of planning, which is induced planning. A plan is indicated as induced planning if the government on the higher level provides incentives to the lower level government for implementing the plan set by the higher level government.

As stated earlier in this section, Tarigan (2005) argues that there exist three more types of planning, particularly in Indonesia. The first argued type of planning by Tarigan (2005) is top-down vs. bottom-up planning. A top-down planning is defined as a planning in which the higher level institution is in charge on setting up and implementing the plan, while the lower level institutions have to comply with the plan set by higher level institution. On the other hand, a bottom-up planning allows the lower level institution to propose a plan, while the higher level institution should acknowledge the proposed plan and formulate the plan based on the proposed plan by the lower level institution. Practically, both kind of this type of planning could usually not be separately implemented as mostly a plan comprises of both kind of this type of planning. The difference rests in the dominancy of each kind of this type of planning.

On the contrary, the second additional type of planning argued by Tarigan (2005) is characterised by the difference on the coordination flow within different level of authorisation. Tarigan (2005) argues that vertical planning is a type of planning in which vertical coordination among different level of institutions, which are in charge within a development sector, is commenced. The intersectoral coordination is not considered to be important since this type of planning is only related to a development

sector. On the other hand, the intersectoral coordination in the same institutional level is taken into account as a means to perform the horizontal planning in order to achieve a synergy among the development sectors. Tarigan (2005) argues that these types of planning should be combined to achieve a synergy among the development sector and ensure the successfulness on reaching the objective of each development sector.

Finally, Tarigan (2005) identifies that there exist a type of planning in which the participation of citizens is considered as a main distinctive feature. The direct participative planning absorbs the citizens' articulation directly to the plan, while within the indirect participative planning the planners should only take into account the parliament's acknowledgment.

As the specific form of planning, the author argues that spatial planning could be classified as well using above mentioned classification of planning, except for the type of physical vs. economic planning. Glasson (1974) argues that spatial planning is already categorised as physical planning and has the objective to realise the objective of the higher level planning, which is economic planning.

However, instead of classifying spatial planning using above mentioned suitable basic type of planning, Dale and McLaughlin (1999) argue that there exist at least four forms of spatial planning, which are (1) zoning, (2) site plan control, (3) building regulations and (4) development control. The distinctive feature of these forms of spatial planning is the level of land use control exercised by in charge institution in a certain area.

The first argued form of spatial planning by Dale and McLaughlin (1999) is zoning that is resulting in the delineation of a community into districts or zones in which certain activities are permitted and others are prohibited. This form of spatial planning usually provides a set of standards with respect to the specific use or uses to which a parcel of land may be put, and the size, type and placement of improvements on that parcel (Dale and McLaughlin, 1999). Furthermore, Dale and McLaughlin (1999) argues that there are three basic land use categories usually identified within this form of spatial planning, which are residential, commercial and industrial.

Secondly, Dale and McLaughlin (1999) argues that site plan controls is characterised by the provided rules for determining the way that land is to be subdivided and how it is to be prepared. According to Dale and McLaughlin (1999), the site plan controls, or also named as subdivision regulations, comprise of both substantive and procedural component. Dale and McLaughlin (1999) argues that substantive component promotes the development of a quality physical environment according to recognised planning and engineering standards, while procedural component provides a monitoring process, with prescribed and regulated steps, for all those public agencies having an interest in how the land is to be developed. Moreover, Hodge (1986), as cited in Dale and McLaughlin (1999), identifies common procedures of most site or subdivision control as follows:

1. A specified approval process, which includes the details on how the land should be subdivided and the review of subdivision plan, as well as the maximum period of time to perform the process;

2. Plan circulation, in which the site plan draft is circulated among the in charged public agencies for review;
3. Condition of approval. Besides the obligation to meet the specified planning and engineering standards, the allocation for roads, parks, utilities and other public purposes should also be conformed by the developers;
4. Final plan approval, in which a plan is approved and ready to be registered for sanctioning the plan.

The third form of spatial planning is building controls, which govern the way in which buildings are constructed and maintained (Dale and McLaughlin, 1999). According to RSNS (1989), the building controls are designed to ensure a safe and healthy environment by regulating the design, construction, erection, placement, occupancy and change of occupancy classification of existing buildings and the work necessary to correct unsafe conditions in existing buildings. The land use control function, according to Dale and McLaughlin (1999), is administered through a building permit process, which includes the site inspection to ensure compliance with the regulations. Dale and McLaughlin (1999) argue that the effective enforcement of this form of spatial planning could become a complex and expensive process. However, Ministry of Municipal Affairs of British Columbia (1994), as cited in Dale and McLaughlin (1999), discovers that there have been efforts to simplify the process by redefining and limiting the enforcement function either through making on-site inspections to audit what is going on or by relying primarily on the certification and assurance of the private sector building industry.

The last form of spatial planning argued by Dale and McLaughlin (1999) is development control, which is also called as development permit. According to Hodge (1986), as cited in Dale and McLaughlin (1999), development control intends to present the responsibility for implementing the plan to the local administrator. Hodge (1986) argues that development control was considered particularly useful for the time period when a formal community plan was being prepared, particularly in fast-growing cities. Proposals on new development buildings or subdivisions are reviewed to ensure consistency with the aims of the emerging plan and a development permit issued. In practice, Dale and McLaughlin (1999) post that development control focuses primarily on the construction or alteration of buildings and regulates the placement of the building on the site, its appearance and its relation to surrounding buildings and streets.

4. LAND ADMINISTRATION IN UNCERTAINTY

The previous chapter has described the basic theoretical background of land administration. However, the implementation of previously described theory is argued to be difficult because of the numerous factors that have to be taken into account (Augustinus and Barry, 2004). As post-disaster areas have many more factors to be taken into account, including their vagueness, Augustinus and Barry (2004) further argues that the development of strategic action plan in uncertainty is much more difficult. Therefore, this chapter describes existing works on utilisations of land administration in post conflict areas (Section 4.1), as well as evaluating land administration system performance in uncertainty (Section 4.2).

4.1 Land Administration in Post Conflict Areas

Having experienced conflicts during 1980s and 1990s, many works have addressed land administration in post conflict areas. However, each conflict has its own uniqueness that requires definite resolutions to deal with the problems. In order to describe the land administration in post conflict areas as a whole, therefore this section is divided into another four sub-sections. The first sub-section, Section 4.1.1, describes the land administration background of the post conflict areas. Moreover, Section 4.1.2 depicts the land administration state after the conflict, while Section 4.1.3 portrays the solutions for addressing the land administration problem in post conflict areas.

4.1.1 Land Administration Background in Post Conflict Areas

Basically, every community has its own approach on managing and administering the land. The author argues that the approach employed within a community should be considered as the most suitable means to manage and administer related community, including management and administration of the land. This is due to long learning period of the community for acquiring such arrangements. The examples from the African and Asian countries, such as Rwanda and Afghanistan, should become the evidences of the above arguments. Rwanda, which economy is based on agriculture, used to have customary arrangement on land (Rurangwa, 2004). Before the era of German colonisation at the end of 19th century, Rwanda had recognised customary land tenure law that comprised of land rights as follows (Rurangwa, 2004):

- The *Ubukonde* or clan law. This law was formerly ratified by chief of the clan in which firstly penetrate the forest. Therefore, a chief usually owned vast tracts of land on which he would resettle several families, henceforth known as *Abagererwa*. Those families further enjoyed certain rights over the land they occupied under some customary conditions;
- The *Igikingi* or right to graze. This right was accorded by the king or a chief in charge of the land, known as *Umutware w'umukenke*, to any pafily that reared livestock. The *Igikingi* was the most common land tenure system in Rwanda, particularly in the central and southern parts of the country;
- The *Inkungu* was the right of local political authority to dispose of abandoned or escheated land in which was reserved to any who required the land;
- The *Gukeba* was the process of settling families onto grazing or fallow land. The responsibility comprised in *Gukeba* was solely weighted to the authority in place.

In the case of Afghanistan, there were existed six sources of accepted legal evidence of land ownership, which are (1) customary documents, (2) deeds, (3) *Ferman*, (4) the cadastre, (5) the Books of Integrated Land Size and Progressive Taxation and (6) tax receipts (Alden Wily, 2004). Customary documents, known as *Orfi*, were usually related to the event of alienation of the land. Customary documents usually included bills of sale and purchase, pawning agreements, wills, subdivision and so forth. The creation of these customary documents were usually witnessed by relatives, neighbours or local leaders and limited in description. Afghans had recognised different form of deeds, know as *Wasayeq Shari'a*, which was referred to legal documents with copies in Court Registries in 10 different forms (see further in Alden

Wily, 2004). Wily also identifies that Afghans recognised a term of *Ferman*, which was referred to legal grants by kings and presidents in the form of decrees, legal letters and so forth. The rest of the legal evidences of land ownership, which are the cadastre, the Books of Integrated Land Size and Progressive Taxation and tax receipts, shown the advance thinking of Afghanistan's land administration scholar. Even though Alden Wily (2004) argues that the limited coverage of cadastral data and maps was inadequate to ensure the successfulness of these interconnected legal evidences, Afghanistan case has proven that the customary land administration could become a basic foundation for establishing good land administration.

However, ambiguities could often still be detected from the existing land administration system since most of the available systems emphasise a relative detail while on the same time neglecting several other characteristics of a given system (Zevenbergen, 2002). This is also in accordance with argument of Augustinus and Barry (2004), which is stated earlier in this section, that implementing land administration theory is extremely difficult as there are numerous factors to be considered. In the case of Afghanistan, Alden Wily (2004) argues that administration of pasture land and its pastoral right had been forgotten by Afghan's customary land administration system. According to Alden Wily (2004), the ownership of pasture is always uncertain and it had initiated conflicts as the supply of arable land was in shortage. The outdated public registers in some countries also lead to vagueness of land ownership concept, such as happening in Guatemala (van Hemert, 2004). The introduction of "foreign" land administration even worsens the land administration problem, especially in developing countries. As identified by Rurangwa (2004), Rwanda was still supported by a dual legal system up to 2004. This was due to the introduction of German colonial law, and further Belgian colonial law, in 1916, which fashioned clear distinction between the customary and colonial land administration system. Van Hemert (2004) also identifies the problem of the robbery and the unfair distribution of the land in Guatemala since centuries ago, which was originated by the invasion and the conquest by Spain. Nevertheless, the "foreign" interventions could also reinforce the security to land right of indigenous people. In the case of Chile, the land ownership by indigenous people was recognised by the Spanish Crown by means of Treaty of Quilin (Gacitúa-Marió, 2000; as cited in Flores-Bórquez, 2004). Gacitúa-Marió (2000) describes that Chilean indigenous peoples possessed a territory of almost 10 million hectares at the end of the Spanish rule. Unfortunately, because of its vast and diverse wealth of natural resources, Chile had been chosen as destination for settlers of several European countries (Flores-Bórquez, 2004). Due to appropriation of the land by the immigrant settlers in the early 20th century, 76% of the arable land of Chile was owned by 2% of the people, who were all of European descent.

Different land administration background was experienced by some ex-socialist countries in Eastern Europe. Countries in Eastern Europe, such as Bosnia-Herzegovina, Croatia and Slovenia, practised the feudal registry system prior to 1912, which were inherited from the Ottoman Empire, and later Austrian-Hungarian Empire (see Horisberger, 2004; Bačić, 2004; Brajnik, 2004). As the purpose of feudal registry system in some countries in Eastern Europe was to value the property for taxation, the land registry system had been put into practice systematically and covered the whole territory of Austrian-Hungarian Empire (Brajnik 2004). Brajnik (2004) also identifies that prior to 1912 the land register in the territory of Austrian-

Hungarian Empire was properly maintained. The introduction of socialism in previously mentioned countries ended the systematic land registry system of Austrian-Hungarian Empire. Horisberger (2004) identifies that the rights to land in the beginning of socialism era were transformed into right of use, limited to the family house or apartment in urban area, or to the small land plot in rural area.

4.1.2 Land Administration after the Conflict

As previously mentioned in the beginning of this section, Augustinus and Barry (2004) argue that development of strategic action plans in post conflict environments are more difficult to produce than plans in stable environment. Furthermore, Augustinus and Barry (2004) identify characteristics of post conflict situation, which is summarised from UN-Habitat (2002, 2004a and 2004b) as follows:

- A lack of land policy at national level, written or unwritten and/or broadly agreed upon by policy makers;
- Limited prioritisation of land policy development that includes all stakeholders. The unacceptable nature of the some of the laws in existence, including the land laws, in terms of their discriminatory nature, requiring the passing of new land laws;
- A land management and land administration system that is largely dysfunctional, either because it has been wholly or partially destroyed and/or because it does not extend to the majority of the population. Land administration staff is likely to have been replaced and so the institutional knowledge and effectiveness is lost. Under these circumstances ordinary people undertake their land dealings outside the formal system;
- A breakdown in the land management/administration and justice system allows powerful individuals to grab public and private land with impunity (including elites, criminal elements and municipalities);
- A land planning system that has not been updated for decades because of conflict, added together with a great need for use of land by refugees, Internally Displaced Person (IDP) and returnees. This leads to large scale infringement of the land plan. Parallel land record systems, where different groups in the conflict have created their own form of land records, and dispute the legitimacy of the land records and land dealings of the other group;
- A break down in law and order and/or a weakness of the central state in extending its functions to the local level throughout the country;
- Invasion of land by the poor, homeless, IDPs, returnees and refugees;
- Overlapping rights and claims over the same parcel/house because of people returning after the conflict, government's having allocated the house/land to someone else, racial allocation of land and houses, the issue of women and especially widow's rights being infringed;
- Large scale destruction of buildings, which in turn leads to the need for rapid redevelopment of houses outside the formal processes;
- Large scale ambiguity and gaps in the regulatory framework.

In addition to above mentioned characteristics of land administration problem in post conflict areas, Lewis (2004) argues that in post conflict areas usually exist the needs

on allocation of temporary land use rights for drawing water, harvesting and so forth, as well as for peacekeeping or military interventions.

Meha (2004) also identifies several land administration technical related problem in post conflict Kosovo as follows:

- Land possession list and registries were partially destroyed by Serbian government forces;
- Land boundary markers, survey control points and associated documentation were also destroyed or removed to Serbia;
- Geodetic surveying equipment and computers had been destroyed or removed to Serbia;
- Discriminatory legislation applied over more than a decade and lack of effective control over property registration and taxation had deterred people from recording property transfers;
- Restrictions in the recruitment of personnel for public sector positions and the displacement of people after the conflict left many municipal cadastral offices without qualified staff.

Prior to the promulgation of Constitution of the Republic of Croatia in 1990, Croatia experienced dual ownership, which were private and public ownership (Bačić, 2004). As Croatian land registry system was not systematically updated up to 1990, particularly concerning the public ownership, a great number of real property was not registered, which increases the discrepancy between the cadastral data and the actual land register data (Bačić, 2004).

4.1.3 Empowering Land Administration in Post Conflict Areas

4.1.3.1 The Concept

Having characterised the land administration problem in post conflict areas, therefore there is a need to set up a good land administration system. Rurangwa (2004) even argues that an appropriate land administration system could become a means to resolve the conflict itself, which is mostly originated from the insecurity of tenure. In order to be able to identify the lineage on setting up a good land administration system, several works were analysed in order to acquire the concept, implementation and evaluation of strategic action plan of land administration in post conflict areas.

By not forgetting argument of Augustinus and Barry (2004) that conventional hierarchy of land administration could not be applied in post conflict areas, the concept of empowering land administration is basically originated from the concept of land administration itself. As described in Section 4.1.2, post conflict areas post several urgent land administrations problem that is need to be taken care of. Additionally, the principles on the reparation for victims of breaches of human rights in Chile (CODEPU, 2003; as cited in Flores-Bórquez, 2004) could also be taken into consideration on emergency response and reconstruction of land administration in post conflict areas. CODEPU (2003) argues that those basic principles are:

- Integrativity, the concept of reparation that includes all aspects of human being that were affected by the traumatic process, such as moral, judicial, political, social, psychosocial and clinical;
- Universality, which incorporate all persons who suffered traumatic experiences that affected one or all aspects of their bio-psychosocial unity, avoiding discrimination or omission;
- Simultaneity, a concept that put forward simultaneous and in harmony execution of reparatory measures in order to expect satisfactory impact of the measures;
- Efficacy, to ensure that reparatory measures must be capable of resolving needs that are intended to be resolved adequately;
- Legality, to ensure that all reparative measures must be the subject of law so as to be outside of the political sphere;
- Legitimacy, that the state must ensure that society is fully conscious that access to the benefits which are awarded through the reparative laws are none other than a right of those who were victims of the state.

In order to establish a fine land administration in such condition, some immediate actions are proposed by some works, such as Zevenbergen and van der Molen (2004), Lewis (2004), Rurangwa (2004) and van Hemert (2004). In the work of Zevenbergen and van der Molen (2004), it is identified that in order to provide the legal assurance of land registration system the administrative bodies of post conflict areas, either central or local, are urged to perform immediate steps as follows:

- Inserting adjudication into selected land market transfers administrative procedures as it is argued by Zevenbergen and van der Molen (2004) to be able to ensure the protection of people's land rights and promote the investment to the land;
- Performing sporadic, rather than systematic, adjudication because it is argued by Zevenbergen and van der Molen (2004) to be too costly and slow to be performed during an emergency phase, probably even in the reconstruction phase;
- Including public notice in a number of places and a site inspection where possible;
- Using registry/cadastral legal evidence as well as other evidences of land rights to ensure the flexibility of land administration system on accommodating limitations existed in post conflict areas. Zevenbergen and van der Molen (2004) further identify the types of legal evidence that should be include, which are possession lists, copies of cadastral plans, notarised contracts describing the transfer of real property, contracts on use of apartments, public housing records, building permits, permits of use, evidence of tax payments, payments of utility bills and (oral) witness reports. Besides recognition of previously mentioned legal evidences, rules of legal evidence should be developed which are as far as possible non-discriminatory between the different groups in the conflict and allow for the likelihood of previously unregistered transfer documents to ensure the liability of previously mentioned legal evidences;
- Keeping in place the existing registration system rather than converting to another registration system as many post conflict areas experience land registration system dualism due to immediate conversion of registry system after the conflicts end.

However, the argument of Zevenbergen and van der Molen (2004) to promote sporadic adjudication is not relevant anymore because of the emerging of

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participatory and community-based land registration in post conflict situation, as it is suggested to be applied in by Alden Wily (2004).

Besides immediate actions in land registration system, Rurangwa (2004) and Lewis (2004) also propose additional steps for covering land administration problem in post conflict areas. Rurangwa (2004), in which sees land administration as a means to create the resources needed to reduce poverty and to consolidate peace and social cohesion, argues that it is recommended to employ following land administration related actions:

- Establish an appropriate land allocation and land use;
- Establish mechanisms which facilitate and enhance an optimum exploitation of land, targeting the social-economic development of the country;
- Orient land management towards a more profitable and sustainable production, by making good choices among methods of land development;
- Develop appropriate methods of land protection and conservation and to avoid land degradation;
- Promote research as well as the education of the public on all aspects concerning land tenure, management and land markets;
- Strengthen discipline in land acquisition as well as in land markets in order to control the pressure on land, inappropriate development and any kind of land speculation;
- Involve and sensitise the population at all levels in order to ensure protection of the environment and good management of the land;
- Put in place institutional arrangements for a good land administration, management and dispute resolutions.

Lewis (2004) also adds urgent actions on resolving land administration problem in post-disaster areas, which are allocating land use for temporary purposes including housing and commercial enterprises, establishment of protection measures for marginalised population, as well as supplying remotely sensed imagery for de-mining servicing and management of the emergency. Furthermore, van Hemert (2004) argues that decentralisation of education and technical assistance and within the private sector, as well as compensation for all lands robbed from people who lost their roots during the time of conflict has to be executed. In addition to argument of Lewis (2004) on technical aspect of land administration that should be identified in post conflict areas, Meha (2004) describes in his work the necessary technical related actions as follows:

- Analysis of the existing cadastral situation, which includes cadastral and geodetic documents, geodetic instruments, other equipments for geodetic needs, professional qualifications of the local staff and professional experience of local staff and their numbers;
- Providing equipments, software and computers.

However, Augustinus and Barry (2004) identify several problems that hampered the establishment of sustainable strategic action plans in post conflict situation as follows:

- Lack of political will or focus;

- The intention on practising short-termed approaches because of the nature of emergency phase;
- No clear picture of the land situation and other land related events, such as invasion of public land, reconstruction of damaged houses, security problems and so forth;
- Resettlement of Internally Displaced Persons (IDPs), refugees and returnees is likely becoming the main focus of conflict relief process rather than rebuilding the system;
- Shortage of land administration professionals;
- Difficulty on moving from the emergency phase to the development phase;
- Existing link between conflict, post conflict and new economic opportunities as criminals and warlords are associated with land allocation, as well as public land and building invasion;
- Non-existence of firm structure of government, which leads to institutional gap and duplication, as well as overlapping land related functions between institutions;
- The fluidity of institutional environment, which leads to difficulty on identifying the position of land administration and its functions, as well as its linkages, in such a constantly changing environment;
- The complex problems associated with the development of new laws and the creation of an appropriate regulatory environment in a post conflict situation.

4.1.3.2 The Implementation, Result and Analysis

Having analysed the characteristic of land administration problem, concept and immediate actions on empowering land administration in post conflict areas, it is clear that each post conflict area has its uniqueness if it is compared to one and another. This could be seen from different description and proposition proposed by different works. Therefore, this section highlights as well the implementations of concepts of empowerment of land administration system in post conflict areas.

The Case of Rwanda

Due to the importance of land administration in resolving conflicts, Ministry of Lands, Environment, Forestry, Water and Natural Resources of Rwanda proposed a new Land Policy and Land Law to Cabinet in February 2004 (Rurangwa, 2004). The proposal, which objectives are to avoid conflicts and promote better land use and management, had been approved by the Cabinet. The proposed Land Policy and Land Law comprise of five key elements as follows (Rurangwa, 2004):

- Promotion of the registration of all land holding, which objective is to strengthen security of tenure for all Rwandans as a basis for ensuring greater social stability, encouraging greater investment in land and improving people's access to credit. In practice, this would be done by giving land titles to all land owners;
- Promotion of rational land use, improved land use planning and land management, which objective is to improve land management from the local to national level, considering that land is a vital and scarce national resource;
- Promotion of land consolidation. This element is closely linked to urbanisation and grouped settlement in rural areas. The objective of this key element is to

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enhance agriculture production by means of the promotion of off-farm economic activities and the provision of adequate infrastructure, facilities and services;

- Development of land dispute resolution mechanism;
- Decentralisation of land administration.

Furthermore in his work, Rurangwa (2004) identifies that land in Rwanda is categorised under urban and rural land, based on its function, allocation and destination of land. Therefore, each category of land in Rwanda is undertaken different approach in order to ensure proper land use and land management. The actions proposed to be undertaken in urban areas are (Rurangwa, 2004):

- Development programs will define appropriate sites to be opened for urbanisation while considering the infrastructure and the protection of sites with a high agricultural potential;
- The formulation and updating of master plans for territorial physical planning and urbanism to ensure a better organisation of territorial and urban development;
- Densification of urban housing in order to avoid wastage of space by promoting vertical use of the land, such as tall buildings and apartments;
- The establishment of banks for housing projects;
- Encouragement of real estate development, as well as land development, and promotion of companies on behalf of municipalities that in charged with the production and property markets.

Rurangwa (2004) also identifies actions to be undertaken in rural areas as follows:

- Re-organisation of habitat in rural areas and adoption of grouped settlement programme *imidugudu* as an appropriate way to settle in rural areas;
- Demarcation of agricultural areas;
- Establishment of the general master plan of land use and land development;
- Guidance on land consolidation;
- Maintenance of marshlands in the state's private domain and establishment of clear regulation concerning their sustainable use in order to avoid their anarchical exploitation with negative environment consequences;
- Complete inventory of marshlands and clarification of their location, as well as their allocation;
- Specialisation of marshland users and establishment of appropriate measures which can increase the yields of the chosen marshlands for agricultural purposes;
- Complete inventory and delimitation of protected spaces and other fragile ecosystems;
- Planning for the development and management of each protected area;
- Development of ecotourism infrastructures;
- Research and promotion of technologies adapted towards the proper use of biological resources;
- Development of a comprehensive political and legal framework geared towards sustainable conservation and use of resources in protected spaces;
- Creation and strengthening of structures carrying out a common management of protected areas.

The Case of Guatemala

After experiencing civil war for over than 30 years due to poor development of and unfair distribution of land in rural areas during the sixties, Government of Guatemala promulgated land policy as a means to resolve the conflict in 1996 (van Hemert, 2004). van Hemert (2004) identifies three main land related institution that are intending to support the policy of Government of Guatemala. The three institutions are *Fondo de Tierras*, *Contierra* and Cadastre. *Fondo de Tierras* most important function is to facilitate the access to land by credits for the voluntary buying and selling movements, as well as to support financing programs and technical assistance for the beneficiaries. *Contierra* is an instrument which intention is to solve the land related conflicts. However, *Contierra* limits its activities to legal assistance and mediation in conflicts without any formal legal repercussions in the final solution of the conflicts.

Up to seven years of the implementation of post conflict land policy, van Hemert (2004) argues that the results were still inadequate, especially concerning the establishment of *Fondo de Tierras* and *Contierra*. Besides a small number of executed case by both organisations, the possible explanations on the failure of empowerment of land administration system in Guatemala are (van Hemert, 2004):

- Lack of sufficient financial resources;
- Poor intellectual development of the target group;
- Bureaucracy within the Government;
- Corruption;
- Willingness of the Government of Guatemala to implement its target.

The Case of Kosovo

Having considered the land administration problem in Kosovo, Meha (2004) identifies following actions in which initiates the rebuilding of cadastral system:

- Inventory and secure existing cadastral information;
- Rebuild an integral geographical information base;
- Restore the geodetic network;
- Design the framework for a modern cadastre and land registration system;
- Attend immediate demands of the municipal cadastral offices;
- Establishment of a central coordinating facility to guide this task.

Within four years after the conflict ends, Land Registry Office of Kosovo was able to accomplish following actions (Meha, 2004):

- Rebuilding geodetic base network, which is realised as KOSOVAREF01, in which 1st and 2nd order of geodetic base network were acquired from GPS measurements. The previously mentioned orders of geodetic base network were linked to EUREF;
- Creating digital cadastre model of Kosovo;
- Creating logical connection to the Land Information;

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- Creating Law of Immoveable Property Right Register (IPRR). IPRR is a means to assure the security of land by providing authoritative documentation of the owner of the land and property;
- Creating Law of Cadastre,
- Establishing procedure on transferring the possession rights into ownership and registration of IPRR;
- Developing Land Administration Policy, in which comprised of creation of data and GIS databases for immoveable properties;
- Realising cadastre in the municipal cadastre zones;
- Completing the aerial photogrammetry for all Kosovo territory.

It is also important to highlight the content of IPRR of Kosovo. Meha (2004) describes the content of IPRR as follows:

- Real Property Rights, which comprises of records on ownership, mortgages and servitudes on land, buildings and apartments;
- Actors, comprises of records on private persons and legal entities, such as ID number, name, address, type of actor, which are linked to legal land, buildings or apartments in the Real Property Rights Register;
- Buildings and apartments, includes records on buildings (ID number, address, type of building, construction year, number of floors, area and so forth) and apartments (ID number location in building, number of rooms, area and so forth)
- Textual land cadastre, records on land parcels (ID number, type of land, area and so forth);
- Graphical land cadastre, records on vector data (cadastre plan with parcel borders, roads, rivers and so forth) and raster data (orthophoto, digital terrain models and so forth);
- Miscellaneous registers, which stores data delivered by different data providers.

Land Registry Office in Kosovo also established the Interministerial Coordination Committee, in which provides advices to public institutions on implementing land projects in Kosovo. This committee is weighted with tasks as follow (Meha, 2004):

- To coordinate activities and developments;
- To initiate cooperation and harmonisation of activities among actors of land administration;
- To promote cross ministerial activities;
- To build trust through cooperation projects;
- To gain consensus on priorities;
- To present priorities to public institutions at high level;
- To coordinate land policies;
- To involve public and private sectors.

Meha (2004) adds that the Kosovo Cadastral Agency acquired the funds from Kosovo Consolidate Budget Office and donations for Kosovo Cadastral Support Program from the Switzerland, Sweden and Norwegian Government.

However, Schoen (2004) analyses that there exist failures on reconstruction of land administration system in Kosovo, particularly concerning administration of socially-owned land and protection of minority rights. Schoen (2004) describes that there exist two distinct legislators, which are United Nations Interim Administration Mission in Kosovo (UNMIK) and Kosovo Provisional Institutions of Self-Government. UNMIK was responsible on protection of minority rights, security issues, all matters regarding international nature and administration of socially-owned land. In contrary, Kosovo Provisional Institution of Self-Government was responsible for the adoption of laws in the field of transferred power which include issues such as agriculture, forestry, rural development and spatial planning. The adopted laws by Assembly of Kosovo are subjects to final approval and promulgation by UNMIK. However, Schoen (2004) identifies that confusions and misunderstandings due to conflicting competence of UNMIK and Government of Kosovo, in which leads to lessen the quality of legislation. Schoen (2004) argues that the international experts and UNMIK were responsible on the deficiencies in the law making process in Kosovo as cooperation among international experts, UNMIK and Government of Kosovo was failed to introduce the adopted and promulgated laws. According to Schoen (2004) the sources of previously mentioned failure are as follows:

1. International experts' mistakes and failures:

- Lack of consideration of the factual and legal situation. International experts have tried to consider the fact that Kosovo was a post conflict area with a post socialist economy and administration. However, such arrangement could not be found within the context of protection of minority rights. For instance, the draft Law on Spatial Planning did not provide safeguards against the determination of sensitive areas, such as waste dump, in minority regions. Furthermore, the draft of Construction Law of Kosovo regulates that Ministry of Spatial Planning shall be competent to issue of construction permits for military premises;
- Lack of explanation and follow up. Schoen (2004) argues that the competent legal officers at UNMIK have not necessarily been in the same level of expertise in subject matters. Thus, international experts should provide detail explanation on their drafts. International experts should also inform UNMIK concerning the priority of each proposed action since mostly UNMIK put different priority as the experts who developed the proposal. There have been evidences on differences between international experts and UNMIK on setting up the priority of the proposed actions, such as on proposal of Law on Establishment of an Immoveable Property Rights Register;
- No ongoing presence. The example of formulation of Law on Mortgages comprehensively explains this failure. As the draft of Law on Mortgages was developed by short-term consultants, these consultants were not available to explain the proposed action to UNMIK by the time the draft law was submitted;

2. UNMIK's mistakes and failures:

- Lack of review procedure. Schoen (2004) argument was based on the examples on formulation of the Law on the Establishment of an Immoveable

Property Rights Register and the Law on Spatial Planning. In the first instance, the result of promulgation by UNMIK on the adopted law by Assembly was a completely new clause for the draft of law to become effective. The clause was raised 12 months after the adopted law was submitted. In the second instance, UNMIK also raised a number of restrictions after the Assembly adopted the law;

- Lack of expertise. Even though all of UNMIK's legal officers were in general highly qualified, they often did not have the legal expertise on the specific topic. The differences on concept applied in the country that UNMIK's legal officers originated from were also impeding the formulation of necessary law on reconstruction of land administration system in Kosovo;
- Lack of will to cooperate. As most of UNMIK's legal officers had no competence for formulating the specific law, therefore UNMIK was blamed because of its arrogant attitude by not contacting the drafters of a law to get necessary information for reviewing the draft.

The Case of Croatia

Due to the downfall of socialism, Croatia experienced land administration related transition processes as follows (Bačić, 2004):

- Change of political, judicial and economic system;
- Separation of monetary system;
- Abolition of social ownership and promotion of private ownership;
- Change of administrative division and organisation in Croatia;
- Restitution of property taken from owners during and before the Communist rule;
- Privatisation of economy, socially owned housing and state owned agricultural land.

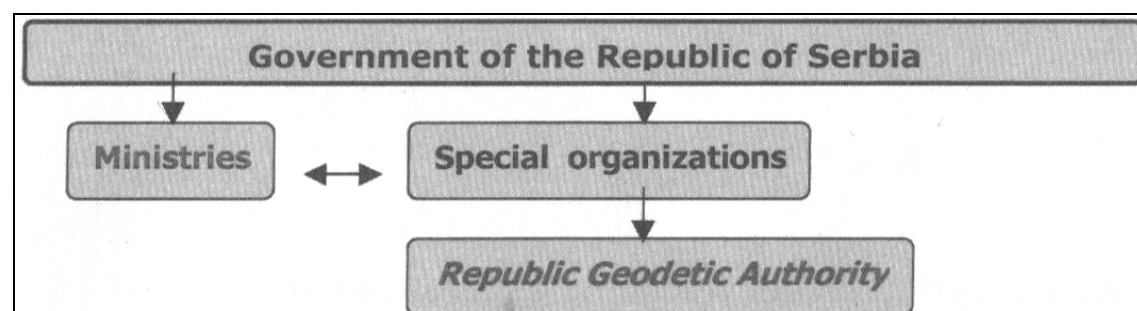
In order to facilitate the land administration system transition, Government of Croatia promulgated the Act of Ownership, the Law on Land Registers and the Law on State Survey and Real Estate Cadastre (Bačić, 2004). Bačić (2004) argues that these laws provided the legal framework for utilising the land registers and the cadastre, as well as stepping forward towards a modern and rational system of real property registration and ownership by creating a unique land database. One of the indications of successfulness of the empowerment of land administration system in Croatia is the recognition of only one form of ownership, which allows a land to be owned by private person only and offers possibility a land to be owned by different persons (Bačić, 2004). Before the promulgation of the 1990 Constitution of the Republic of Croatia, there existed dual form of ownership, which were private and public ownership. Another indication of good achievement on reconstruction of land administration system in Croatia is the cooperation among public land administration related institutions, as well as cooperation with international experts (Bačić, 2004). The cooperation among public institutions in Croatia allow the implementation of the organisation, modernisation and transition of the registers, while the cooperation with international experts leads to have a big picture on a most suitable land administration system that could be applied in Croatia, as well as train its staff in order to acquire new knowledge and management skills. However, the negative image of registers in

public had great impact on functionality of registers and impedes the land administration reform (Bačić, 2004).

The Case of Serbia

The work of Aleksic *et al* (2004) describes the post conflict land administration system in another ex-communist country, which is Serbia. Aleksic *et al* (2004) argues that one of the advance achievements of post conflict land administration system in Serbia is the establishment of the Real Estate Cadastre. According to Aleksic *et al* (2004), the Real Estate Cadastre is a modern, efficient and reliable property registration system, which is established in digital form. The Real Estate Cadastre includes data regarding cadastral parcels, building, apartments and business premises. This registration system also records separate parts of buildings and other building objects, location, shape, area, methods of use, definition of land quality, cadastral class, cadastral revenues, real rights on real estate and owners of property rights, as well as data regarding restrictions and limitations. However, as the Real Estate Cadastre was just introduced in 1988, there exist other means of real estate registration system as well, which are Land Cadastre and Land Books and Book of Deeds (Aleksic *et al*, 2004). According to Aleksic *et al* (2004), at the end of 2003, 44.2% of cadastral municipalities had adopted the Real Estate Cadastre system, while only 19% of cadastral municipalities were still adopting Land Books and Book of Deeds system and 36.8% of cadastral municipalities were still adopting Land Cadastre system.

Despite of the existence of three different registration systems, Serbia posts a good example on the firm land administration institutional structure and funding arrangements. The Republic Geodetic Authority (RGA), which is responsible for carrying out technical and administrative land administration related tasks, consists of six sectors and two departments (Aleksic *et al*, 2004). The structure of RGA was established based on the type of work performed by each sector and department. Furthermore, Aleksic *et al* (2004) also mentioned that each sector has internal units that formed the departments. See Figure 4.1 for the organisational structure of the RGA.

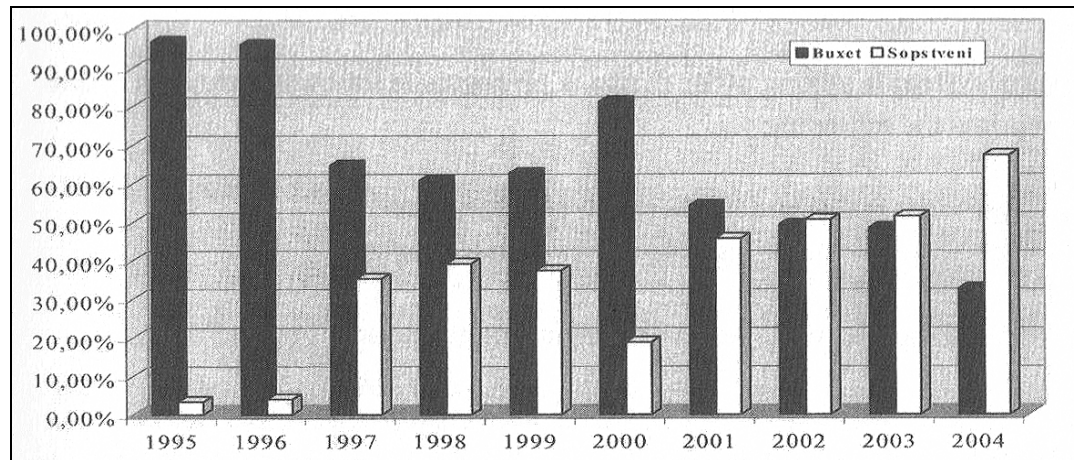


Source: Aleksic *et al* (2004)

Fig. 4.1 Organisational structure of RGA

The RGA has two sources of fund, which are budget funding from the Government of Serbia and from various service of the RGA (Aleksic *et al*, 2004). Also according to Aleksic *et al* (2004), the introduction of the Real Estate Cadastre had enhanced the development of the real estate market and increased the number of registered transaction. Consequently, the RGA own fee income has been significantly increased,

even after significant reduction in fee income in 2000. See Figure 4.2 for the ratio of budget funding and RGA's fee income and Figure 4.3 for the trends of RGA self financing.



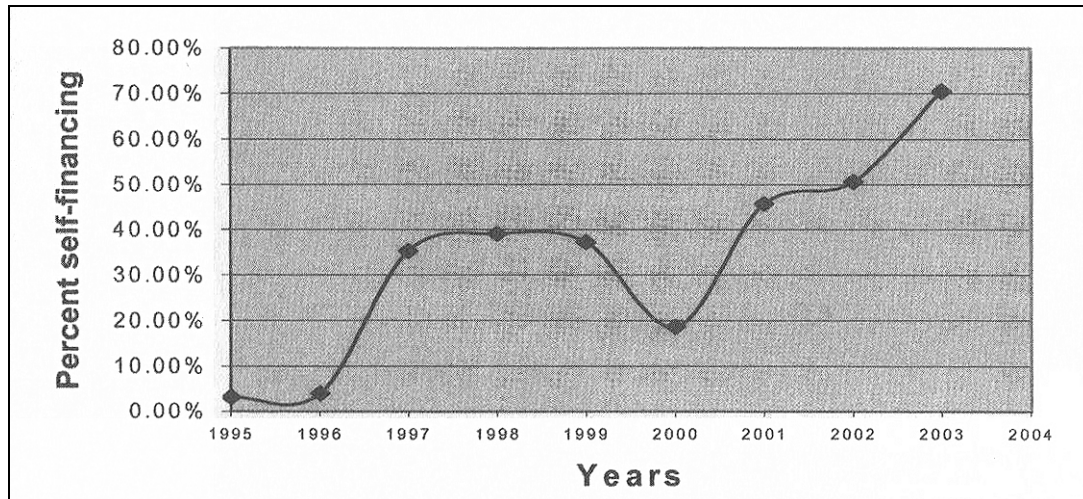
Source: Aleksic *et al* (2004)

Fig. 4.2 The ratio of the budget from Government of Serbia versus RGA's own fee income

For developing Real Estate Cadastre and digital cadastre database for 48 urban municipalities, the RGA was cooperating with World Bank in funding allocation (Aleksic *et al*, 2004). The fund from the World Bank was also spent to have technical assistance for improvement of the legislation system from international experts.

The Case of Albania

Albania has experienced more or less the same land administration lineage with Eastern European countries. Having affected by violent fall of the regime in Romania, Government of Albania consciously began the transition of ownership concept, from social to private ownership, in early 1990s, especially concerning ownership of the land and buildings. Stanfield (2004) identifies that the privatisation of immovable property was carried out through variety of programs, such as (1) the distribution of the ex-cooperative agriculture land to rural households, (2) the distribution of ex-state farm land to households, (3) the sale of business sites to individual owners, (4) the sale of housing units in state constructed apartment buildings to adult residents, (5) the restitution of mostly urban properties to their owners, or to their heirs, prior to state acquisition, (6) privatisation of enterprises and (7) transfer of artist studios to their artist occupants in ownership. Besides above programs, the first registration conducted by means of systematic and sporadic registration was also performed since there were only available housing entities that kept records of occupancy of apartments, but not of the house which were typical in villages (Stanfield, 2004). For rural areas, the local cadastre office kept only records regarding the agricultural use of cooperative and state farms. The above mentioned programs were performed under the new registration system so called the Immoveable Property Registration System (IPRS).



Source: Aleksic *et al* (2004)

Fig. 4.3 Trends of RGA self financing

The IPRS in Albania is a unified, comprehensive and parcel based title registration system (Stanfield, 2004). This system is supported by the Immovable Property Registration Act, in which provides the procedural and technical concept that leads to enhancement and better understanding on management of land and property (Stanfield, 2004). Stanfield (2004) identifies the information included within the IPRS as follows:

- *Kartela*, which is textual information regarding (a) geographical location, (b) general description of area and type of property, (c) holder of land and property rights, (d) tenants who have servitudes or hold restrictive agreement over the property and (e) mortgages, court decisions or other restrictions on ownerships;
- Registry Index Map, a comprehensive digital map of all parcels, which scale are 1:2.500 for most of agricultural parcels and 1:1.000 for most urban parcels;
- Registration Zone, a geographically defined area, usually a district, in which administered by an Immovable Property Registration Office;
- Cadastral Zone, a geographically define area, usually a village in rural area or a neighbourhood in a city, which is small enough to be able to locate parcels easily. There usually exist no more than 1.500 immovable properties in a cadastral zone and no more than 200 Cadastral Zone in a Registration Zone;
- Immovable Property Number, a unique number for each immovable property, which is composed of the unique number within a Cadastral Zone and the unique number of related Cadastral Zone.

In order to keep the *Kartela* and Registry Index Map from improper destruction and alteration, back up of the mentioned documents are also maintained (Stanfield, 2004).

Stanfield (2004) further explains the organisational structure of the IPRS as follows:

- Independent local registrars. The operational office of IPRS, the District Registration Office, has an authority to do the first registration and register all valid transactions on property. As the IPRS is a decentralised system, registrars have no obligation to report the transactions to Chief Registrar and are not a

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subject to local political pressure as the registrar are not part of the local government;

- Chief Registrar. The Chief Registrar has an authority to nominate Registrars and provide training to the Registrars and their staff. The Chief Registrar also has budgetary authority over the Registrar;
- Independent IPRS. The Chief Registrar makes a report to a representative of the Prime Minister and later to the Council of Ministers, which is not in the structure line of any Ministries;
- Notaries. As in the Registrars lie the only power to accept or reject applications to register properties and transactions, the independent notaries were founded to help the registers to prepare land market transaction documents legally and monitor and send complains to the Chief Registrar regarding the behaviour of the Registrars;

The emergent of IPRS concept basically creates dualism on registry system in Albania. IPRS is a parcel based registration system that provides titles for the registers, while on the other hand the *Ipoteka* is a deeds-based registration system (Stanfield, 2004). However, Government of Albania plans are to gradually decrease *Ipoteka* based transactions and shift to IPRS.

Nevertheless, the consciousness to shift to private ownership concept without pressures from internal conflicts still left many problems that impede the IPRS to function effectively and efficiently. Stanfield (2004) identifies several factors lead to infectivity and inefficiency of performance of IPRS as follows:

- Untrained and unprofessional Registrars. This is due to low salaries, political pressures and less training;
- Facilitation Fees to false document in the Registration Office. The power of monopoly held by Registration Offices allows the Registrars to reject or delay applications until facilitation fees are paid. However, the counterbalance power of the notaries was not adequately performed yet since there were fear that any future registrations by notaries will be delayed or rejected by the Registrars;
- Passiveness of notaries. Under the IPRS, notaries are required to go to the Registration Offices and do a title search to verify the liability of the transaction according to the Registrar based on valid transaction in the past. Therefore, the passiveness of the notaries under IPRS leads to the little improvement on the strength of the title shown on the *Kartelas*;
- Initial Registration Fees and degradation of records. Stanfield (2004) argues that to have the appropriate function of the land markets, there must be procedures for the sporadic initial registration of immovable properties. In Albania, these procedures typically produced fees for the Registrars, either facilitation or normal fees, as well as income for the IPRS and staff. While there existed subsidies only for systematic registration and new initial registration was needed to register the properties, the public distrust was emerged. Due to mentioned problem, there existed as well duplication of initial registration efforts since every transaction was treated as another initial registration. This also led the IPRS to gradually devolve into a deeds registry;
- Technical degradation. As the systematic initial registration projects resulted in digital information, the database of IPRS could not be updated gradually since the

Registrars mostly recorded the registry information in hardcopy. Besides leading to un-updated registry system, the subdivisions of the parcels could seldom be included within the available maps since the results were usually too small to be written on the maps. As the digital files were not updated, new paper maps could not be plotted in more appropriate scale as well;

- Informal transactions. Many informal transactions were occurred since the transaction cost were simply too high;
- Absence of compensation for damages due to errors in IPRS information;
- Degeneration of capacity to coordinate investments in a national action plan.

Having characterised the impedance factor for performing IPRS effectively and efficiently, Stanfield (2004) further proposes ideas to promote the effective and efficient IPRS as follows:

1. Provides financial support for the first registration;
2. Provides administrative integrity of IPRS and indemnity for the damages due to false information in the Registries by:
 - Strong efforts on introducing the lineage of title for all transaction to ensure the liability of the registers;
 - Publishes periodically all transactions that occur to discourage the hidden transaction;
3. Discourages informal and unregistered transactions by:
 - Introduces immovable property tax to be paid by the registered owner to provide incentives for sellers for ensuring that the transactions are registered;
 - Gradually eliminates transaction tax, which is one of the major cost factors which drives people away from the formal IPRS;
 - Devises a system for regulating and moderating the fees and procedures used by notaries, independent from the system used to license new notaries;
4. Encourages Registrars and their staff to serve the public:
 - Elects Registrars on every two years, without party affiliation, to make them accountable to the local population without being subject to local political party pressures;
 - Obliges the Registration Offices to become gradually self sufficient in terms of their operational and investment budgets by finding ways to attract people to bring their transactions for registration;
 - A supervisory body for overseeing each Registrar and chief Registrar in IPRS;
5. Modifies the legal and public expectations of the IPRS by:
 - Creates understanding that there is no guarantee or assumption that the information in the registry necessarily reflects the reality;
 - Creates understanding that in order to be liable for performing transactions, the investigations of the title should be performed;
 - Creates understanding that due to the administrative defects, there requires the investigation of title and there is no guarantee of the title;
6. Provides public education concerning the IPRS to be functioned properly.

4.2 Evaluation of Land Administration System Performance in Uncertainty

In the previous section, the common characteristics of land administration problem in post conflict areas have been described, as well as solutions and its effect to the land administration system. The author argues that every solutions described within the previous section were proposed after the land administration system performance being evaluated by conventional theories. This section further describes the available framework for evaluating land administration system performance in uncertain situations, particularly in post conflict areas. The cadastral system is argued as facilitating the operational of land administration (Enemark, 2005), while spatial planning is argued as the tool to achieve the sustainability in the scope of land use as a component of land administration. Therefore, the description of evaluation framework of land administration system in this section is limited to the introduction of evaluation framework of cadastral system and spatial planning. In Section 4.2.1, the conceptual framework on evaluating cadastral system in post conflict areas is described, while Section 4.2.2 explains the framework on evaluating spatial planning in uncertainty.

4.2.1 Soft System Theory

Concerning the development of strategic action plan for a post conflict land administration, Augustinus and Barry (2004) argue that conventional land administration approach could not be applied in period of uncertainty. The first argument concerning previously mentioned hypothesis is that in post conflict areas it is necessary to look at the properties of higher system (Augustinus and Barry, 2004). As the influence of social and political stability, as well as economic opportunity, to the land management system is relatively high in post conflict areas, the main objective of land administration system should be set to contribute to higher systems objectives and resolve the conflict. Therefore, Augustinus and Barry (2004) argue that it is better to take into account how the macro environmental factors influence the decision making in reconstruction of land administration system, rather than trying to fix the system.

The second argument of Augustinus and Barry (2004) regarding the inappropriateness of employment of conventional approaches to the post conflict situation is related to the nature of conventional approaches, which is shifting to title registration system. The title system basically promotes efficient land and property markets. However, Augustinus and Barry (2004) argue that the deeds registration system is likely implemented more effectively in post conflict situation during short to medium term. Several objections posited by Augustinus and Barry (2004) regarding the employment of title system are as follows:

- The curtain principle adopted by most of title system on underlying claims and legal evidence could only use evidence on the land record. Thus, the trails of evidence that would show off-record claims would not be considered. As the overlapping rights and claims are common in post conflict area and becoming the source of new conflicts, the trails of evidence associated with deeds registration system would need to be retained in the short to medium term. Besides ensuring a

- credible land administration conflict and avoid new conflicts to emerge, this will facilitate adjudication during technical processes and the restitution of property;
- As most of state officials in post conflict situation are not considered to be credible for maintaining land administration system, thus the land record held by state will provide biased evidence to the court. In title system the land record becomes the first evidence admitted by court, *vis-à-vis* with the nature of deeds system that the evidence of the rights is held by private sector as they serve as witnesses to the dealing. Additionally, due to the negative image of registry in some post conflict areas, peoples prefer the private section to facilitate the transfers;
 - The weak, such as women and widow's land right, would be generally prejudiced.

Thirdly, Augustinus and Barry (2004) argue that human behaviour is expected to adapt to the technical design of the conventional system. As such adaptation has not been the case in the past, the image of bad management and/or administrative processes, as well as impartial cadastral staff, impedes the intention of the people to rely on land administration system concerning their rights to the land (Augustinus and Barry, 2004). Therefore, human behaviour should be placed at the centre of analysis.

Fourthly, Augustinus and Barry (2004) argue that the land industry in a stable situation is characterised by silos, in which each silo is attempting to obtain optimal solutions for its own problems. However, the fluidity of post conflict situation presumes that it is necessary to understand the inter-relationship between system (Augustinus and Barry, 2004). Augustinus and Barry (2004) argue that this is due to establishment of new institutions, lack of clarity on where land functions are placed in government, gaps and ambiguities around the law and policy, as well as large scale opportunism. Thus, this imposes the strategic action plan to include activities and budgets associated with process as well besides surveying.

Fifthly, Augustinus and Barry (2004) argue that in stable situation, cadastral systems are mature and tied to land policy over years and decades. Augustinus and Barry (2004) further argue that this has not been the case since the link between cadastral systems and land policy is usually unavailable anymore in post conflict situation. This results to isolation of land administration system from land policy. While the modernisation of land administration is done within such isolation, thus unsustainability would become the result of such process (Augustinus and Barry, 2004). Such isolation is also led to land laws that could not be implemented.

Finally, Augustinus and Barry (2004) argue that the competing interests in silos are usually being the case while employing conventional approach in post conflict situation. Therefore, there is a need to move away from the silo thinking and analyse different points of view within the same conceptual framework.

The concept for evaluating land administration system performance in post conflict areas was developed by Barry (1999), and followed by Barry and Fourie (2002). This concept, so called Soft Systems Theory, was basically adopted from the work of Checkland (1981 and 1999) concerning the system thinking. Having supported by literatures concerning the evaluation of management information system, as well as the land management and land administration, Barry and Fourie (2002) argue that this theory provides a useful framework for understanding and analysing land

management and cadastral system during a period of rapid change. First of all, Barry and Fourie (2002) argue that this theory could accommodate complex situations and secondly, because the structure of the interaction between sub-systems is likely to change over time, conceptual models of a particular system need to be constructed and analysed continually.

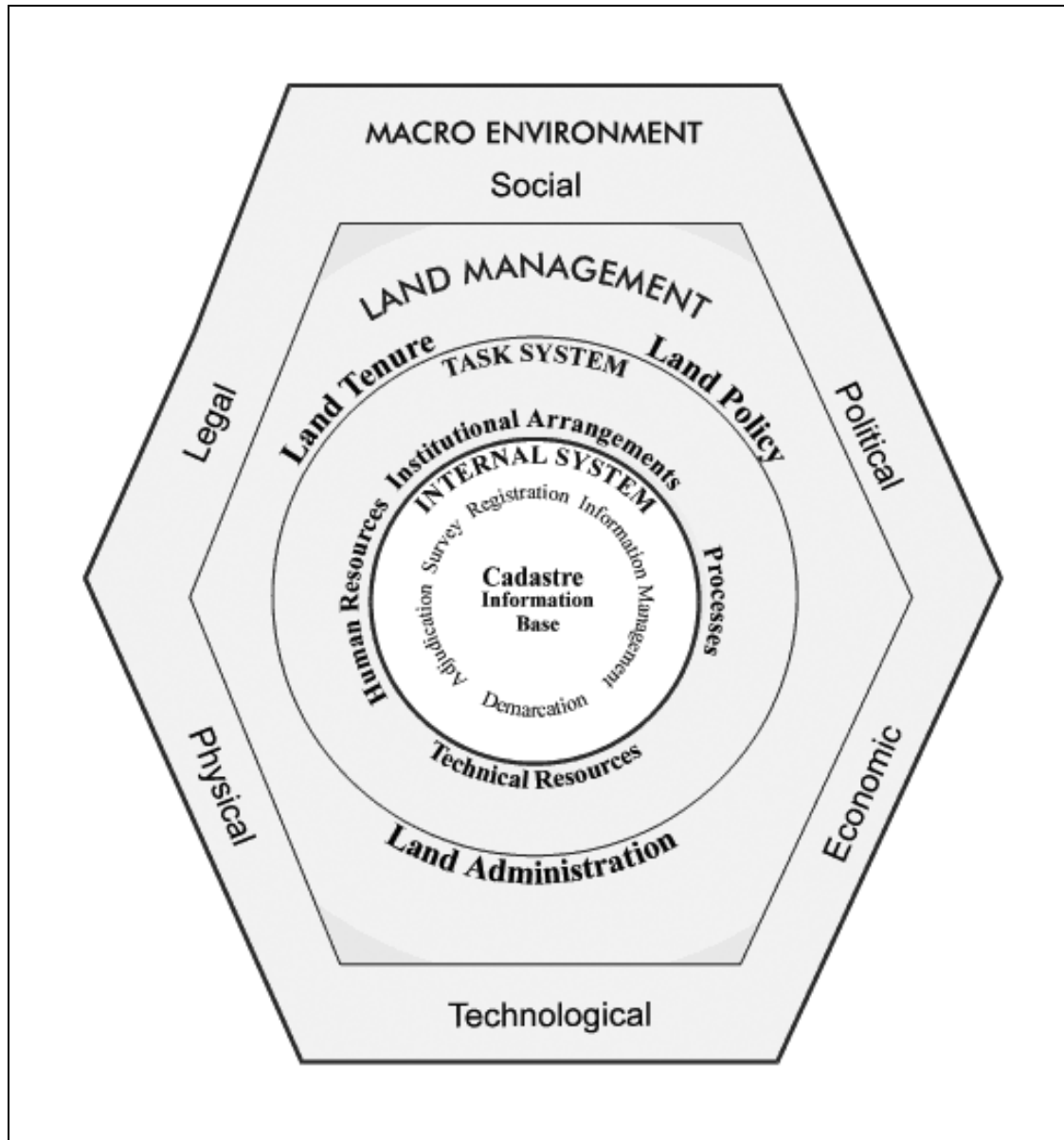
4.2.1.1 Land Management Hierarchy in Soft System Theory

The formulation of the Soft System Theory was started by creating the land management hierarchy (Barry, 1999). See Figure 4.4 for details. Barry (1999) argues that from the cadastral analyst's perspective, a cadastral system in a land management hierarchy is conceptualised as comprising an internal system consisting of the cadastral system itself and its various sub-systems. Having summarised from the works of Dale and McLaughlin (1988), Barnes (1990) and Dale (1979), Barry argues that the cadastral sub-system comprises of following processes (1999):

1. Adjudication, the determination of rights in land;
2. Boundary definition, demarcation, survey and record of the spatial component of the bundle of rights in the land unit, the area (or volume) of physical space to which the run of property rights pertain;
3. Registration, the legal execution and record of the transfer of rights and interest in the ownership bundle;
4. Dispute resolution, legal and legitimate processes to resolve disputes;
5. Information management, including data capture, information processing and analysis, information storage, information retrieval and information dissemination.

At the next major level in the hierarchy is the cadastral system's immediate task system and above this is the macro environment (Barry, 1999). The task system is defined by Barry (1999) as the set of system which determines the tasks, the processes and outputs of these processes, to be performed by the cadastral system. Barry (1999) further argues that the task system comprises all the sub-system of land management that are above the cadastral system in the land management system hierarchy that set requirements for the cadastral system. The cadastral system performs tasks for the set of land management systems in the task system, which includes the system of land tenure, land administration and land policy development. As the sub-system of land management might occupy different positions in the land management hierarchy for different analytical situations, consequently they are represented as being on the same level as the task system in the system hierarchy to be arranged by the analyst in a given situation (Barry, 1999).

Additionally, Barry (1999) argues that the macro environment is a set of elements external to system of land management that cadastral system analyst assumes he or she could not engineer, but perhaps might influence. According to Barry (1999), the macro environment is defined as comprising a blend of elements commonly listed in descriptions of organisational environment analysis. Barry (1999) further argues that the mentioned elements are the social, political, legal, physical, technological and economic milieu.



Source: Barry (1999)

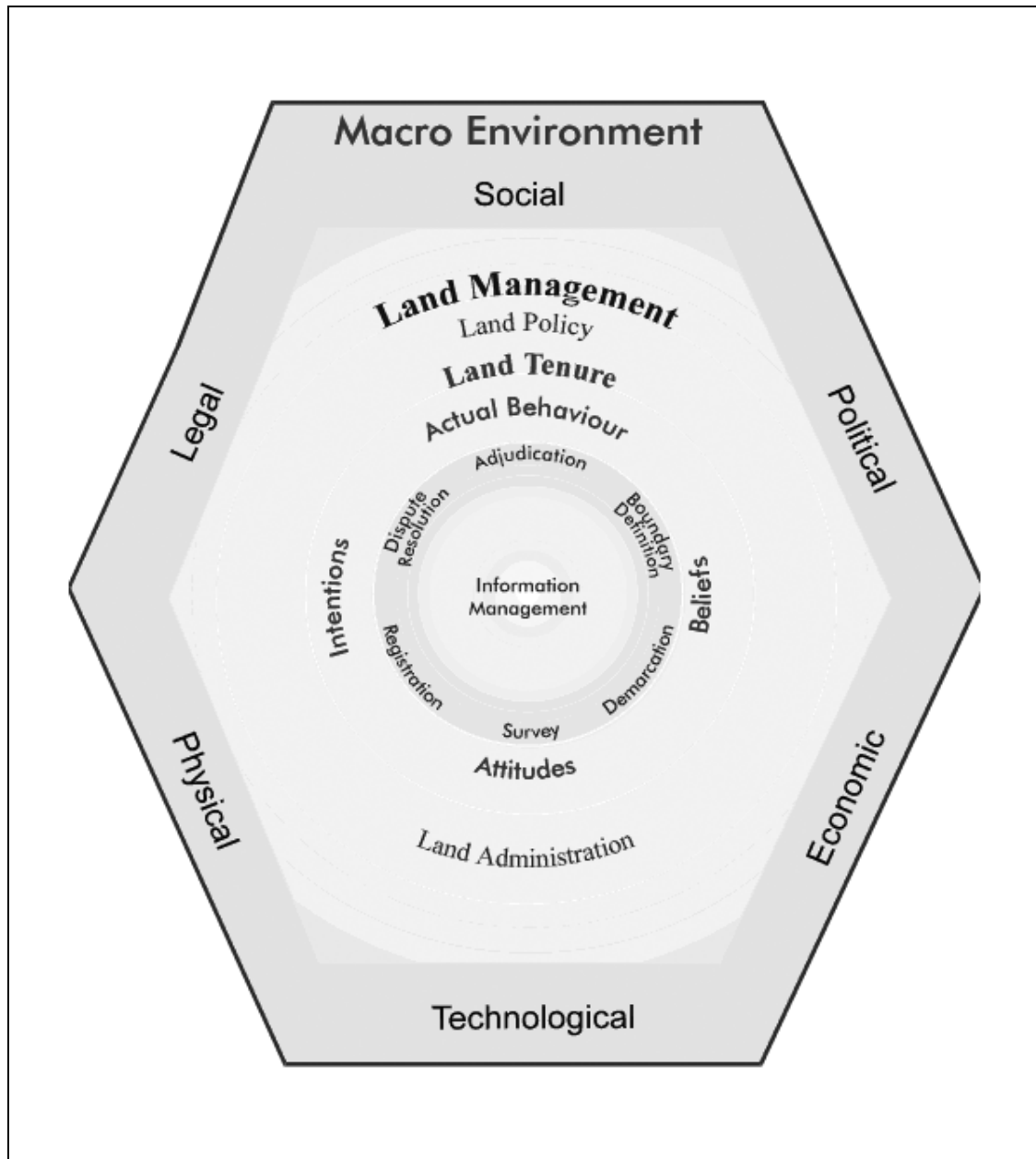
Fig. 4.4 Land management hierarchy of Soft System Theory

4.2.1.2 Cadastral System Evaluation Framework in Soft System Theory

Based on land management hierarchy described in Figure 4.4, Barry (1999) develops the cadastral system evaluation framework. See Figure 4.5 for details. Barry (1999) argues that the inner rings in Figure 4.5 represent the interrelationship between the cadastral system and the land tenure system. The innermost ring represents the cadastral system processes and the ring outside of that represents the land tenure system. The determination of an appropriate tenure system and the effectiveness of the cadastral system in supporting this tenure could be recorded and analysed in terms of beliefs, attitudes, intentions, actual behaviour and the behavioural norms, subjective and actual, that are general to a particular community (Barry, 1999).

Barry (1999) further argues that the outer rings and the macro environment represent controls. These are systems further up the land management systems hierarchy and in the macro environment that place constraints of the type of tenure system that could

be legally supported by the cadastral system. Barry (1999) further explains that these higher systems determine constraints on the nature of the cadastral system processes that can be designed and implemented and the structure underlying these processes.



Source: Barry (1999)

Fig. 4.5 Cadastral system evaluation framework of Soft System Theory

4.2.1.3 Cadastral System Evaluation Framework in Practice

The work of Barry (1999) was intending to evaluate the cadastral system in periods of uncertainty, with Cape Town's Xhosa-speaking communities as the case study. During the performance of the mentioned research, Barry (1999) structured the analysis of materials in case study based on following issues:

1. Analysis of the current *de facto* tenure system and the processes, instruments and structures that uphold the existing tenure system, and whether they are wanted by

- communities. The focus of analysis of this issue was the conflicting group and individual biases in the *de facto* tenure system and the trends toward individualisation or group tenure that occurred over time;
2. Analysis of the effectiveness of cadastral instruments and processes in upholding the current *de facto* tenure system, and whether the systems wanted in the future. The focus of this analysis are the system of registration and boundaries;
 3. Analysis of the effectiveness of the *de facto* tenure system support other objectives of land administration and land policy such as sustaining the collateral value of land and, if it exists, the operation of a land market. The primary focus of this analysis is the land tenure and ownership system espoused in land policy, as well as those espoused and practised by residents in the areas studied.

4.2.2 Spatial Planning Evaluation Framework for Post Conflict Areas

Basically, the evaluation of spatial planning is already included within the spatial planning process itself. This is in accordance with the argument of Larsson (1997) that the process (spatial planning) must be monitored to ensure that it follows the expected development. Unfortunately, there is almost none of available work that proposes the spatial planning evaluation framework for post conflict areas. This section therefore describes the conventional spatial planning evaluation framework that is relevance to this study.

A means to evaluate the effectiveness of spatial planning has been described earlier in Section 3.2.2.1. Larsson (1997) argues that the effectiveness of spatial planning could be assessed using the characteristics of spatial planning and its implementation. The meant spatial planning characteristics are realism, up-dating, binding power and participation/consultation, while the implementation characteristics are institutional connection to planning-implementation, unambiguous division of responsibility, power of relevant institutions, decentralisation, financial base and personal resources (Larsson, 1997).

Additionally, Larsson (1997) proposes a matrix that can be used as an instrument of analysis to study the likely possibilities of implementing planned measures. See Table 4.1 for details. In the proposed matrix by Larsson (1997), each characteristic of spatial planning and its implementation is assessed by means of available legal and institutional framework in the country in question. Larsson (1997) identifies the legal and institutional framework for analysing the strength of each efficiency factor as follows:

- Legal and institutional system. The legal rules could become the driving force for the attainment of certain goals and objectives. Additionally, Hydén (1984), as cited in Larsson (1997), argues that there are three kinds of motivation system, in which force organisations, enterprises and persons to act in a specific ways. The meant motivation systems are planned systems, intervention systems and self-regulating systems. In planned system, every process regarding the spatial planning is handled by public authorities. In the intervention system, the regulation is made by intentions to avoid the creation of unacceptable external effects by a self-regulating system and to solve or diminish conflict between different owners and interests. In the self-regulation system, the legal regulation is mainly created to provide the rules for enabling the system to function

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efficiently, while the initiative and acting are the matters for individual actors only;

- Initiatives. The initiative is a means to get things done, as well as to formulate how they will be done;
- Public contributions, a principal method that describes whether the authorities are wholly or partly responsible for implementation operations;
- Agreements. An agreement between authorities and the landowners/developers, as well as among the landowners/developers, is argued as a well established form to regulate responsibilities, benefits/costs, other obligations, the time schedule, procedures regarding the development, other major land use changes and conservation measures;
- Incentive means, which are usually existed in the form of economic incentives, are usually proposed to stimulate implementation of regional development programmes;
- Informative means. The well used propagandistic-informative means can gradually create a sympathetic and informed attitude and foster voluntary activity;
- Participation, which is not only a means of implementation but also a model to get those concerned involved in the formation of the new land use structure and to support planning with information, viewpoints and creative thinking.

Tab. 4.1 Means of implementation and efficiency factors

Efficiency Factors	Legal and Inst. System	Initiatives	Public Contributions	Agreements	Incentive Means	Informative Means	Participation
Plan							
Realism							
Updating							
Binding Power							
Participation							
Implementation							
Institutional Connection							
Responsibility							
Inst. Power							
Decentralisation							
Financing							
Personnel							

Source: Larsson (1997)

Larsson (1997) further argues that this analysis could give overview of which implementation methods are at hand and which are likely to be successful, as well as indicate the weak points in different methods that may lead to improvements but otherwise to a realistic view of the situation.

PART III LAND ADMINISTRATION SYSTEM IN BANDA ACEH

In this part of study report, policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh is described in Chapter 5, while the progress of rehabilitation and reconstruction of land administration in Banda Aceh up to one year after the December 26 earthquake and tsunami is described in Chapter 6.

5. POLICY OF GOVERNMENT OF INDONESIA ON REHABILITATION AND RECONSTRUCTION OF LAND ADMINISTRATION IN BANDA ACEH

This chapter highlights the policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh. This chapter further is divided into two sections, which are land administration policy in general in Indonesia (Section 5.1) and land administration policy for earthquake- and tsunami-affected areas in Banda Aceh (Section 5.2). It should however be underlined that Section 5.1, Land Administration in Indonesia, does not include the recent discussions on changing land administration policy due to the promulgation of Act of Republic of Indonesia No. 22 year 1999 concerning Regional Governance that assists to decentralisation of regional governmental tasks. Whilst there have been no changes promulgated yet on the land administration-related acts and regulations, the Regional Governance Act itself has been considered as in a need to be reviewed and refined.

5.1 Land Administration in Indonesia

Land management and administration policy in Indonesia is basically constituted by Article 33.3 of Constitution of Republic of Indonesia. In previously mentioned article of Constitution of Republic of Indonesia, it is stated that land, water and natural riches contained therein shall be controlled by the State and exploited to the greatest benefit of the people. The more details of land management and administration policy are also regulated by Resolution of Parliament of Republic of Indonesia No. IX year 2001 concerning Agrarian Reform and Natural Resources Management.

To conduct the mandate given by People of Republic of Indonesia (PoI), the author argues that the GoI structures the land administration system into three main components, which are land and property valuation, land tenure and land use components. The author also argues that the structure above is formulated based on the existing regulations, institutions and tools of land administration system in Indonesia.

This section further depicts the legal and institutional aspect of land tenure (in Section 5.1.2) and land use (in Section 5.1.3) in Indonesia. The principles, features and characteristics of land tenure and land use system in Indonesia are explained by the depiction of legal and institutional aspect within the next sections.

5.1.1 Land Tenure

5.1.1.1 Regulation

This section describes the land tenure regime act in Indonesia, as well as the land registration regulations for maintaining the implementation of land tenure regime in Indonesia.

Land Tenure Regime Act

The land tenure regime in Indonesia is mainly regulated by Act of Republic of Indonesia No. 5 year 1960 so called Agrarian Principles Act (Undang-Undang Pokok Agraria/UUPA). Basically, the UUPA mirrors the socialism of land administration related article in Constitution of Republic of Indonesia, which is the Article 33.3. Article 33.3 of Constitution of Republic of Indonesia is clearly represented in Article 1 of UUPA, which defines land as a treasure from God to Indonesia as a nation, which includes earth, water and space. To ensure that land and water will be used of for the people, Article 6 of UUPA states that each acknowledged tenure by UUPA has social functionality attached on it. Another representation of Article 33.3 of Constitution of Republic of Indonesia could be found in Article 2.1 of UUPA. According to Article 2.1 of UUPA, State, as the representation of people of Indonesia, has the highest authority on land in Indonesia. Therefore, land and individual and/or group of individuals are related to each other through the state (Article 2.2 of UUPA).

Basically, the UUPA was formulated based on Indonesian customary land law, so called *hak ulayat* (*ulayat* right). Article 5 of UUPA mentioned that the valid land tenure regime in Indonesia is *hak ulayat* as long as it conforms the national and state's

interests based on the unity of the Nation and Indonesian socialism, as well as the regulation stipulated by UUPA and other regulations, with respect to elements based on religious statute. However, there is no other evidence on the adoption of *hak ulayat* in UUPA, including the conversion and titling of *hak ulayat*, but the tenures that are adjusted several recognised and common *hak ulayat*. Those tenures are acknowledged by Article 16 of UUPA. Article 16 of UUPA classifies the tenures under two different groups of tenures, which are:

1. Land tenures, consist of:

- Right of ownership (*hak milik*);
- Right of cultivation (*hak guna-usaha*);
- Right to use buildings (*hak guna-bangunan*);
- Right to use (*hak pakai*);
- Right to lease (*hak sewa*);
- Right to clear the land (*hak membuka tanah*);
- Right to collect forest product (*hak memungut hasil hutan*);

2. Waters and airspace tenure, including (Article 16.2 of UUPA):

- Right to use waters (*hak guna air*);
- Right to cultivate and catch fish (*hak pemeliharaan dan penangkapan ikan*);
- Right to use space (*hak guna ruang angkasa*).

Additionally, Article 49 of UUPA mentioned that the right of land for religious and social purposes is acknowledged and protected by UUPA (Article 49.1 of UUPA). Article 49 of UUPA further explains that the right of land for religious purposes could directly granted by the state under the arrangement of right of use.

Besides above tenures, Article 16.1.h of UUPA refers arrangement of several temporary tenures, which are not mentioned by Article 16.1 of UUPA, to Article 53 of UUPA. According to Article 53 of UUPA, those temporary tenures are:

- Right of security (*hak tanggungan*);
- Right to cultivate and sharing the profit (*hak usaha-bagi hasil*);
- Right of lodging (*hak menumpang*);
- Right to lease agrarian land (*hak sewa tanah pertanian*).

Article 53 of UUPA further mentions that the temporary tenures should be organised in such manner that avoid contradictions to UUPA and should be abolished as soon as possible and converted into one of the recognised tenures by UUPA.

Unfortunately, the author argues that the *hak ulayat* itself has not been clearly accommodated by UUPA. The author argues that the *hak ulayat* itself is still existed in Indonesia and there is no available procedure for converting *hak ulayat* into available tenures recognised by UUPA. Even though it is existed a Guideline for Settlement of *Hak Ulayat* Problem within Customary Law, which is regulated by Regulation of State Ministry of Agrarian of Republic of Indonesia No. 5 year 1999,

the *hak ulayat* is still being separated from UUPA. This guideline only regulates the recognition of the existence of *hak ulayat*, but not for converting the tenures under *hak ulayat* to tenures recognised by UUPA. The conversion of tenures under *hak ulayat* to a title could only be done if the land owner voluntarily registers his/her land to the Land Registry Office. The problem of conversion of tenures under *hak ulayat* to UUPA is worsened since there are existed different types of *hak ulayat* system in most of the provinces in Indonesia.

In fact, there is existed another land regime in Indonesia, which is a series of Dutch Colonial Land Laws, namely *Agrarische Wet* (Agrarian Law) in State Gazette 1870 No. 55 (S. 1870-55), *Domein Verklaring* (Declaration of Land as Belonging of the State) mentioned in Article 1 of *Agrarische Besluit* (Agrarian Decree) mentioned in S. 1870-118, *Algemene Domein Verklaring* (General Declaration of Land as Belonging of the State) in S. 1875-119a, *Algemene Domein Verklaring voor Sumatera* (General Declaration of Land as Belonging of the State for Sumatera Island) in Article 1 of S. 1874-94f, *Domein Verklaring voor de Residentie Menado* (Declaration of Land as Belonging to the State for Residence of Menado) in Article 1 of S. 1877-55, *Domein Verklaring voor Residentie Zuider en Ooster Afdeling van Borneo* (Declaration of Land as Belonging to the State for Residence of Southern and Eastern Borneo) in Article 1 of S. 1888-58 and *Koninklijk Besluit* (Royal Dutch Declaration) of April 16, 1872, No. 29 (S. 1871-117) and the regulation for its implementation. The second part of UUPA regulates the detail of conversion of the rights regulated by above colonial laws, which is usually called *eigendom* right. However, in practice the conversion of *eigendom* right is not automatically done without the voluntary action from the land owner to convert his/her right to land into recognised tenure by UUPA as regulated by the second part of UUPA. Martini (pers. com. 2006)¹ identifies that due to inautomatic conversion of *eigendom* right, an ownership of a parcel in Bandung, Indonesia, had been manipulated by a local governmental office in Bandung, which lead the land owner lost his land and property. The land owner inherited his land from his grandfather, who was being granted the parcel in question by a Dutch.

However, UUPA still provides flexibility for accommodating the adoption of other existing tenure besides those recognised by UUPA. According to Article 16.1.h of UUPA, it is possible to adopt unrecognised tenure by stipulating an act. Wright (1999) identifies three other tenures that have not been mentioned by Article 16.1 of UUPA, which are:

- Apartment ownership right (*hak milik atas rumah susun*);
- Security right (*hak tanggungan*);
- Right of management (*hak pengelolaan*).

Besides describing the tenures recognised in Indonesia, UUPA also describes the terms on abolition of tenures as follows:

1. The land falls back to the State because of:

¹ Interview with Sely Martini, Indonesian planner and employee of Indonesia Corruption Watch, on March 29, 2006

- Revocation of the right under the circumstances that the land is needed for the public interests, including the interest of the Nation and State, as well as common interest of the people;
 - Voluntary abolition of the right to land by its owner;
 - The land is being abandoned;
 - The land belongs to foreign citizen, except for foreign citizen resides in Indonesia. An exception is existed concerning the Right of Use as the corporation, which is established under Indonesian Law and seated in Indonesia, and foreign corporations that have its representation in Indonesia could acquire the Right of Use;
 - Expiration period has passed concerning the Right of Cultivation, the Right to Use Building;
2. The land is banished or destroyed. However, there is no further explanation regarding the term of banished land.

Land Registration Regulation

In order to provide legal certainties and protection for the holders of recognised tenures by UUPA, provide information for the in-charged parties and maintain effective and efficient land administration, GoI promulgates Regulation of Government of Republic of Indonesia No. 24 year 1997 concerning Land Registration. The GoI's regulation on land registration basically explains the principles and characteristics of land registration in Indonesia, as well as the activities and institutional aspect of land registration in Indonesia. Additionally, a number of regulations of the State Ministry of Agrarian of Republic of Indonesia were promulgated for regulating the more details on land registration implementation in Indonesia.

The features of land registration in Indonesia are basically described by Article 2 of Land Registration Regulation. Those features are simplicity, security, affordability, currency and openness.

The author argues that the Indonesian land registration system adopts the German/Swiss title registration. According to Article 37 of Land Registration Regulation, *Pejabat Pembuat Akta Tanah* (PPAT/land deed registry official) is in charge for registering the deeds on alienation of the land. Article 6 of Land Registration Regulation also mentioned that it is compulsory for the Head of Land Registry Office to be supported by either PPAT or other appointed officials. Furthermore, Article 40 of Land Registration Regulation mentions that PPAT should submit the deeds in question at most seven days after the signing of the deeds.

Concerning the dispute resolution of interests on land, Indonesia adopts the negative registration system as Article 55.3 of Land Registration Regulation mentions that the court has an authority to nullify the right to land, as well as the Apartment Ownership Right. Therefore, there is no guarantee on the security of the title in Indonesia once it is registered. The only control to certify the legitimacy of a title is lied in the

procedure of deeds registration by PPAT (see further Article 39 of Land Registration Regulation). The deeds would be one of the evidences for refusing applications for the registering the rights to land due to the alienation of the land as mentioned by Article 45 of Land Registration Regulation. However, there is no evidence on Land Registration Regulation, as well as which are mirrored by court's decisions, on race and/or notice statute on land dispute resolutions.

Land Registration Regulation further describes activities included within the implementation of land registration in Indonesia. As mentioned in Article 12 of Land Registration Regulation, the activities previously mentioned are:

1. The first-time land registration, which comprises of:
 - Collecting and processing the physical data;
 - Verifying the rights and recording them;
 - Issuing certificate;
 - Presenting physical and juridical data;
 - Storing public register and its related document;
2. Maintenance of land registration data, which comprises of:
 - Registering transfers and encumbrances;
 - Registering changes on other land registration data.

Besides regulating the technical procedures on registering the right to land, the Land Registration Regulation gives evidence on possibility to register joint ownership. The Article 31.3 of Land Registration Regulation explains that an apartment ownership right is jointly owned by a number of individuals or corporate bodies. The division and merging of rights to land are also regulated by Article 43 of Land Registration Regulation in which mirror the possibility to register joint ownership.

5.1.1.2 Institutional Aspect

Based on Article 64, 65 and 66 of Presidential Decree of Republic of Indonesia No. 103 year 2001 concerning Status, Tasks, Functions, Authority, Organisational Structure and Order of Operation of Non-Departmental Government Institution, BPN is in charge for performing governmental tasks on cadastre. As non-departmental government institution, BPN justifies its performance directly to the President of Republic of Indonesia based on Article 2 of Presidential Decree of Republic of Indonesia No. 103 year 2001. Presidential Decree of Republic of Indonesia No. 34 year 2003 concerning the National Policy on Cadastre also describes the tasks of BPN for accelerating the formulation of bill of UUPA and founding cadastral management information system. Besides tasks previously mentioned, BPN is also in charge on organising land registration.

While performing its tasks concerning the formulation of national cadastral policy in municipality/regency level, BPN is supported by the government of municipality/regency in question as it is regulated by Article 2 of Presidential Decree

of Republic of Indonesia No. 34 year 2003. Therefore, the authority on performing cadastral tasks in municipality/regency level is lied in hand of Land Registry Office within the municipality/regency in question. This is also mirrored by Article 6 of Land Registration Regulation. As the provincial governments are authorised to perform the governmental tasks on cadastre, the performance of tasks of BPN in provincial level is relegated to BPN Regional Office.

As identified by Section 5.1.1.1, Indonesia adopts the German/Swiss title registration. Therefore, PPAT and other officials, such as the Head of a District of a municipality/regency in question, perform the governmental tasks on cadastre, such as systematic and sporadic registration, as well as alienation of the land.

5.1.2 Land Use

5.1.2.1 Regulation

The land use in Indonesia is basically regulated by Act of Republic of Indonesia No. 24 year 1992 concerning Spatial Planning in Indonesia. The Spatial Planning Act emphasises the principles, objectives, characteristic of spatial planning and spatial planning phases in Indonesia.

Article 2 of Spatial Planning Act mentions that the principles of spatial planning in Indonesia are as follows:

1. Utilisation of space for all interest in an integrated, effective and efficient, harmonious, balanced and sustainable way;
2. Openness, juridical, equality and legal protection.

Article 3 of Spatial Planning Act further describes the objectives of spatial planning as follows:

1. The realisation of an environmentally sound spatial utilisation based on the *Wasawan Nusantara* (doctrine on the unity of Indonesian) and national resilience;
2. The realisation of the orderly use of space in conservation and cultivation areas;
3. The achievement on desirable quality of space utilisation for:
 - Realising intelligent, noble and prosperous way of life of the nation;
 - Realising the synergy between the utilisation of natural and man-made resources by considering human resources factor;
 - Increasing the utilisation of natural and man-made resources in an efficient, effective and appropriate way to improve the quality of human resources;
 - Embodying the protection of function of the space, as well as preventing the negative environmental impacts;
 - Embodying the balance between prosperity and national resilience.

Based on Article 4 and 5 of Spatial Planning Act, the community participation is a starting point of spatial planning in Indonesia. The detail on the implementation of

community participation on spatial planning is regulated by Regulation of Government of Republic of Indonesia No. 69 year 1996.

Basically, the spatial planning form in Indonesia is categorised as zoning spatial planning. This is mirrored in Article 7 of Spatial Planning Act that categorised spatial planning within units as follows:

1. Spatial planning based on primary functions of the zones, which includes the spatial planning on conservation and cultivation zones;
2. Spatial planning based on administrative aspect, which covers the national, provincial and municipal/regency spatial planning level;
3. Spatial planning based on the activities and functions of the zones, which encompasses spatial planning on rural, urban and special areas.

Spatial Planning Act further explains that the first and third units spatial planning should be integrated within national, provincial or municipal/regency spatial planning. The spatial planning of sea and air space is however managed by the central government by means of an act.

However, since the national, provincial and municipal/regency spatial planning is considered as directives only, the provincial and municipal/regency government have an authority to promulgate permits regarding the development in the province and/or municipality/regency in question, especially for the development of special zones based on Article 10 of Spatial Planning Act. Besides using the development control method within the implementation of spatial planning, the building regulation is also used as a means to control the land use in provincial and/or municipal/regency level. Spatial Planning Act further describes the steps of spatial planning as comprises of planning, utilisation and control phase.

5.1.2.2 Institution

There are basically two institutions that are in charge on the spatial planning in Indonesia, which are Bappenas and Ministry of Public Works of Republic of Indonesia. According to Article 16 of Presidential Decree of Republic of Indonesia No. 103 year 2001 concerning Status, Tasks, Functions, Authority, Organisational Structure and Order of Operation of Non-Departmental Government Institution, Bappenas is in charge for performing the governmental tasks on national development planning. The Article 17 and 18 of the previously mentioned presidential decree further explain that Bappenas has an authority to formulate national development planning policy, as well as to facilitate the coordination, particularly horizontal coordination, among public institutions that are in charge in the formulation of national development planning policy. In the scope of spatial planning, Bappenas is in charge on the formulation of national spatial plan.

As non-departmental institution, Bappenas justifies directly its responsibility to the President of Republic of Indonesia as mentioned in Article 2 of Presidential Decree of Republic of Indonesia No. 103 year 2001. Whilst the Spatial Planning Act regulates the autonomy of provincial and municipal/regency government on formulating their own spatial planning, the tasks of Bappenas in provincial and municipal/regency level

are performed by Regional Development Planning Agency (Badan Perencanaan Pembangunan Daerah/Bappeda) of province and/or municipality/regency in question. Bappeda justifies its performance directly to Mayor or Regent as regulated in Spatial Planning Act that local government has an authority to formulate its own spatial planning, Bappeda also justifies its performance to Bappenas and Bappeda on the higher level in the case of Bappeda of municipality/regency.

On the other hand, Ministry of Public Works of Republic of Indonesia is responsible for the operational of spatial plan in every governmental level, particularly regarding utilities network (Directorate General of Spatial Planning of Ministry of Public Works of Republic of Indonesia, 2005). Due to autonomy of provincial and municipal/regency government, the Ministry of Public Work is represented by Regional Office of Public Works. The Regional Office of Public Works justifies its performance to the higher level of public works institutions, as well as the local government in question.

Additionally, Spatial Planning Offices are established in every regency/municipality for issuing the development permits and building regulation in the regency/municipality in question. The Spatial Planning Office justifies its performance to the regency/municipality where it belongs to.

5.2 Land Administration Policy for Banda Aceh

This section describes the land administration policy for NAD and Nias in Section 5.2.1 and for post-earthquake and –tsunami areas in Banda Aceh in Section 5.2.2. This section also briefly describes the institutions that are in charge within the rehabilitation and reconstruction of Banda Aceh in Section 5.2.3.

5.2.1 Land Administration Policy of GoI for NAD and Nias

Land tenure and land use are considered as a crucial sector on rehabilitation and reconstruction of NAD and Nias. Spatial planning and land policy is compiled in a detail plan book, which is the first detail plan book among other 10 detail plan books.

According to Bappenas (2005a), rehabilitation and reconstruction of land administration for earthquake- and tsunami-affected areas must be in accordance with directives as follows:

1. Creating areas that are safe from disaster and better livelihood;
2. Providing settlement choices for the residents;
3. Engaging public participation and utilise the social institution to address disaster and development activities;
4. Highlighting cultural and religious characteristics;
5. Initiating participatory spatial planning;
6. Creating disaster mitigation and anticipation for disaster;
7. Combining top-down and bottom-up spatial planning approach;
8. Restoring local governments' role;
9. Protecting citizens' civil rights;
10. Accelerating the land registration process;

11. Providing fair and affordable land compensation;
12. Revitalising economic activities based on local natural resources;
13. Restoring carrying capacity and anticipation of natural disaster;
14. Restoring public institution on environmental and natural resources;
15. Restoring and rehabilitating spatial structure of NAD and Nias;
16. Reconstructing disaster-affected cities into their initial state of order.

Each directive comprises detailed activities to lead its implementation within rehabilitation and reconstruction of NAD and Nias.

Having worked on 16 directives above as the framework, spatial pattern guidance of NAD is formulated as follows (Bappenas, 2005a):

1. The centres of settlement/cities in the west coast of NAD will be maintained to keep the balance of growth between the west and east region of NAD, as well as the central region, and supported by smaller-scale growth centres such as Sigli, Bireuen, Singkil, Tapak Tuan, Blangpidie, Calang in coastal areas, and Blangkejeren and Jantho in remote areas;
2. Waterside cities will be developed by taking into account local contents, particularly local contents' relation with earthquake- and tsunami-proneness, as well as conservation and buffer zones;
3. Road networks will be rehabilitated to maintain the interconnection between cities in the west coast and east coast, or between both regions, and encourage the development and equalization of the regions: Meulaboh-Calang-Lamno-Banda Aceh Jantho-Sigli-Bireun to Lhokseumawe. A new road is to be constructed (related to the construction of a side road) connecting the isolated areas of West Aceh/Meulaboh and Aceh Jaya, among others Lhok Kruet-Calang-Teunom-Woyla-Meulaboh by using the oil palm plantation road and improving the rural road, reopening the Jantho-Lamno road section; Beureunun-Geumpang-Tutut-Meulaboh, Ladia Galaska Simpang Peut-Jeuram-Beutong Ateuh-Takengon road, west crossing road of Meulaboh-Tapaktuan-Bakongan; Jantho-Lamno; Calang-Tangse-Beureunun; Teunom-Sarah Raya-Geumpang; Teunom-Sarah Raya-Woyla; and Calang-Geumpang;
4. Facilities for crossing to small islands (among others to the islands of Weh, Sabang and Simeuleu) will be re-operated for population mobilization and regional economic development;
5. Airports are to be operated and improved: Sultan Iskandar Muda, Cut Nyak Dien, Lasikin, Maimun Saleh, Malikussaleh, and Teuku Cut Ali Airports. Hercules aircraft can land at the airports of the west-south coasts for the purpose of evacuation and logistics supply distribution;
6. Seaports are to be operated and improved: Sabang, Malahayati, Calang, Meulaboh, Kuala Langsa, Singkil, and Lhokseumawe. A decision is to be made about the location of the Uleu-lhee replacement ferry terminal upon the completion of a technical feasibility study;
7. Interconnected electrical network systems of Banda Aceh-Sigli-Bireun-Lhokseumawe and Meulaboh-Calang-Takengon are to be rehabilitated;
8. Industrial areas in Lhoknga, Lhokseumawe, and Malahayati; trade, food crops and plantation and coasts are to be repaired;

9. Water resource supply networks (among others irrigation channels, river basins, and coasts) are to be rehabilitated in order to support the availability of sewage and clean water;
10. Conservation areas (central part of NAD), such as Leuser ecosystem areas, protection forest and conservation (buffer zone and city forests) along with the coast, are to be rehabilitated and reconstructed by preparing a coastal buffer zone in the form of vegetation or structures;
11. Efforts will be made to avoid locating settlements in conservation areas such as sparsely populated elephant areas in Pucok, Alue Raya, Blang Dalam & Lhok Kuala, Lamje, Kr. Batee Mirah, Kr. Alue Ceulolup, Kr. Buerieng, Can. Kaking Ungoh Batee, Tutut boundary, Uteun Cut Area, Panga, Panga-Teunom, and Lageun.

Besides providing spatial pattern guidance for provincial level, Master Plan also proposes spatial pattern guidance in municipal and/or regency level. According to Main Book, every spatial planning in municipal and/or regency level should be in accordance with directives as follows:

1. Organization of the city:
 - a. Minimise changes in the existing structure, hierarchy, density and land use;
 - b. Expand the existing road network with additional escape routes;
 - c. Rehabilitate and reconstruct earthquake- and tsunami-affected areas;
 - d. Enhance accessibility of cities by sea and air for the purpose of evacuation, logistics distribution and rehabilitation of the city/area;
2. Spatial structure of the city:
 - a. Maintain the existing city structure;
 - b. Rehabilitate the existing city structure;
 - c. Develop disaster-resistance cities and areas;
 - d. Utilise river basins to become the structure of the cities;
3. Non-cultivation areas:
 - a. Conservation areas:
 - Rehabilitate and reforest conservation areas that were damaged by earthquake and tsunami;
 - Protect conservation areas, city forests and mangroves as the defence against tsunami;
 - Develop the green belt areas as natural conservation and defence against tsunami;
 - Utilise the green belt areas and escape hills as green open spaces;
 - b. Coastal areas: Restore the function and land use of coastal areas by applying the disaster mitigation principle;
 - c. River areas: Plan the river areas by considering the disaster mitigation principle;
4. Cultivation areas:
 - a. Settlement areas:
 - Reconstruct damaged urban settlements and its facilities;
 - Equip the existing settlements with disaster mitigation facilities;
 - Develop escape building/vertical housing in densely populated settlements;
 - Create new settlement areas;

- b. Historic areas: Conserve and revitalise the remaining historic sites.

Having considered all directives above, as well as social and cultural uniqueness of NAD and Nias, the more detail concepts of spatial pattern guidance for earthquake- and tsunami-affected areas in NAD and Nias are mentioned Bappenas (2005b). Subsections below will describe the detail concepts of spatial pattern guidance for earthquake- and tsunami-affected areas in NAD and Nias.

5.2.2 Land Administration Policy for Earthquake- and Tsunami-Affected Areas in Banda Aceh

The December 26 earthquake and tsunami affected 668.470 Ha of municipalities/regencies that are located at the coastline of NAD and North Sumatra (Bappenas, 2005b). As 800 km of coastal strip of Aceh (BRR and the International Partner, 2006), it is urgently needed to formulate the spatial pattern guidance for rehabilitation and reconstruction of earthquake- and tsunami-affected areas in Banda Aceh. This section describes the spatial pattern guidance for each earthquake- and tsunami-affected area in Banda Aceh.

The December 26 earthquake and tsunami had created different level of damages in Municipality of Banda Aceh. According to Bappenas (2005b), there are five categories of damage, which are:

- I. Totally damaged and permanently inundated. Areas that are classified in this category have altitude less than five meters and directly facing the ocean where the tsunami wave came. The soil structure is gentle. The quality of groundwater is varied from brackish for 0-10 m and >30 m deep groundwater to potable for 10-30 m deep groundwater. The drainage of this area is difficult;
- II. Heavily damaged. This plain zone is located within 2-5 km from the coastline and inundation-prone area. The altitude is less than 5 m. The soil in some part of area is gentle. Most of groundwater in this zone is brackish;
- III. Damaged. Generally is a plain zone, with the altitude among 5-10 m. Some part of the site is inundation-prone, adequate drainage, relatively solid soil and tsunami-prone;
- IV. Relatively save. The landscape characteristic of this zone is hilly, with the altitude among 10-50 m. Relatively tsunami-free area, good drainage, relatively solid soil, relatively potable groundwater;
- V. Relatively save but the earthquake- and landslide-proneness of the area is high since it covers mountain ranges, relatively steep and the unstable soil structure.

See Figure 4.1 for details.

Based on the level of damage and state of the landscape after the December 26 catastrophe, the development of Banda Aceh will be directed in accordance to physical zones as follows (Bappenas, 2005b):

1. Restricted development zones, which consist of:

- Zone I: Aquatic zone for coastal ponds, mangroves, recreational beach and coastal conservation zones; very low density of building supported by earthquake- and tsunami-resistant construction;
 - Zone II: Low density development zone, supported by earthquake- and tsunami-resistant construction and reliable drainage system. Not advisable for commercial or social activities. Housing is possible but must be subjected to strict building and environmental codes;
 - Zone III: Moderate density development zone, supported by earthquake- and tsunami-resistant construction and reliable drainage system. Restricted development of commercial zone is allowed and it is advisable to preserve the heritages within this area;
2. High density development zone (Zone IV): Supported with earthquake- and tsunami-resistant construction. It is encouraged to develop this area according to its original function by giving tax incentive, controlling land price, as well as complete and reliable infrastructure;
 3. Conservation zone (Zone V): Not advisable for development and it is preserved as a conservation zone. This area will also be prepared for evacuation while the tsunami strikes.

Before the December 26 catastrophe happened, Banda Aceh has already had spatial planning for 2000-2010. See Figure 4.2 for the detail of spatial pattern guidance of Banda Aceh for 2000-2010. Since the December 26 catastrophe altered the landscape of Banda Aceh drastically, there is a need to revise the spatial pattern guidance of Banda Aceh for 2000-2010. In order to revise the spatial pattern guidance of Banda Aceh for 2000-2010, there had been intensive discussions that were involving stakeholders of rehabilitation and reconstruction of Banda Aceh. The discussions had resulted spatial planning scenario as follows (Bappenas, 2005b):

1. Provide two options for Acehnese on rehabilitation and reconstruction of land administration, which are relocation to the safer areas and resettlement to the initial place of living with the improvement on safety and protection infrastructures;
2. Relocate the important buildings, such as government office buildings and hospitals, to the safer areas;
3. Build protection and escape facilities;
4. Use advance technology to build earthquake and tsunami resistant constructions;
5. Restructure the spatial pattern based on physical zoning of Banda Aceh;
6. Restructure the settlements in coastal areas of Banda Aceh and providing alternatives for those who want to be relocated to the safer areas.



Source: Bappenas (2005b)

Fig. 5.1 Category of damages in Banda Aceh

Besides above spatial planning scenario, the discussions among stakeholders of rehabilitation and reconstruction of Banda Aceh had also resulted the spatial planning strategy of Banda Aceh as follows (Bappenas, 2005b):

1. Enhance the spatial pattern guidance continuously by taking into account the sustainable development of Banda Aceh;
2. Pursue the simple and urgently needed activities as soon as possible;
3. Conscientiously plan the complex and long-term activities, as well as activities that have implication on social, cultural, economic and environmental aspects of Banda Aceh;
4. Begin the rehabilitation and reconstruction of Banda Aceh by participatory planning;
5. Identify the needs on social facilities at the settlement and sub-centre areas by considering the estimation of long term population density after the December 26 catastrophe;
6. Determine the number and type of protection and escape facilities for regional level;
7. Develop infrastructure of the earthquake- and tsunami-affected areas in accordance to the existing structures;
8. Refrain to the significant changes on the structure of the city, except for the surrounding area of ferry port of Sabang. The changes on the structure of the surrounding area of ferry port of Sabang will be studied further.

Based on spatial planning scenario and strategy above, it is essential that the new spatial pattern guidance of Banda Aceh should adapt the existed urban spatial structure for Banda Aceh's urban and its surroundings (Bappenas, 2005b). According to Bappenas (2005b), Banda Aceh will be developed using a city sub-centre system and a regional infrastructure system scenarios. The city sub-centre system is directing the development of two new urban centres, which are located at the original city centre and in the southern part of Banda Aceh near Lambaro. Those new urban centres will be supported by nearby city sub-centres, such as the city sub-centres of Neusu Jaya, Keutapang, Lambaro, Pineung, Darul Imarah, Lhoknga, Lampineureut and Pekan Attoek. The road network system will be developed by connecting the city's sub-centres and creating north-to-south and west-to-east ring road network. The development of other infrastructure in the city, such as clean water facilities, electricity and telecommunications, will follows the proposed road network system, while the drainage will be developed along the natural drainage of Banda Aceh. By considering the provincial and municipality/regency spatial pattern guidance, as well as spatial pattern guidance for Banda Aceh, the spatial pattern guidance of Banda Aceh for 2000-2010 has been revised by Bappenas (2005b).

5.2.3 Institutional Aspect of Rehabilitation and Reconstruction of Land Administration in Banda Aceh

In order to ensure transparency, accountability and speed in rehabilitation and reconstruction of NAD and Nias, GoI established Badan Rehabilitasi dan Rekonstruksi NAD dan Nias (BRR/Rehabilitation and Reconstruction Agency for NAD and Nias) based on Regulation in Lieu of Law No. 2 year 2005 regarding Rehabilitation and Reconstruction Agency for NAD and Nias. Regulation of Government of Republic of Indonesia in Lieu of Law No. 2 year 2005 emphasises that:

1. Rehabilitation and reconstruction activities will be implemented based on the principles of transparency, accountability, participation, and responsibility by prioritizing public interest and remaining free of corruption, collusion, and nepotism;
2. All the activities of BRR must:
 - Work within the framework of the master plan;
 - Work within the existing legal framework on regional autonomy;
 - Take into account the interests of the affected communities;
3. The Agency has the authority to coordinate, collaborate, and monitor rehabilitation and reconstruction activities, including those funded directly by foreign donors;
4. The Agency's coordination functions are made retroactive from the end of the emergency phase on March 26, 2005;
5. The flow of any Government budget funds for rehabilitation and reconstruction activities will be facilitated by a special Treasury Office, which is formed by the Ministry of Finance;
6. Financial reporting by the Agency will be in accordance with the Government's existing accounting and reporting standards. The Agency will be audited by the Supreme Audit Agency or independent auditors if necessary;

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7. The public will have access to the financial reports, performance reports and audit reports of the Agency;
8. The Agency will act upon the input of the communities and will abide by special regional autonomy laws;
9. The Agency can request information and technical support necessary to execute its duties from the central government, regional governments, and related parties.

Concerning the rehabilitation and reconstruction of land administration in NAD and Nias, BRR is responsible to (BRR, 2005d):

1. Formulate directives regarding rehabilitation and reconstruction of land administration at tsunami-affected areas;
2. Become a facilitator between local government and society;
3. Coordinate every process on cadastral reconstruction at tsunami-affected areas;
4. Support BPN on reconstruction of property right of 600,000 parcels;
5. Facilitate intersectoral activities on rehabilitation and reconstruction of land administration at tsunami-affected areas.

Particularly in cadastral sector, Badan Pertanahan Nasional (BPN/National Cadastral Agency) is responsible on rehabilitation and reconstruction of land tenure system in post-disaster areas in Banda Aceh. BRR task is only providing supports and assistances on the performance of rehabilitation and reconstruction of land tenure system in post-disaster areas in Banda Aceh.

On the other hand, concerning the land use sector, BRR is responsible to coordinate the formulation of spatial plan of NAD, as well as at municipalities/regencies in NAD. As mentioned in Section 5.1.2.2, Bappeda of Municipality of Banda Aceh is responsible to coordinate the formulation of spatial plan of Banda Aceh, which is performed by local Public Works Office and Spatial Planning Office. As the local Public Works Office and Spatial Planning Office have not been operated properly and the formulation of spatial plan of post-disaster areas in Banda Aceh needs to be performed quickly and in details, therefore Japan International Cooperation Agency (JICA) was asked by GoI to formulate the spatial plan of Banda Aceh. However, the spatial plan of Banda Aceh is still needed to be reviewed and promulgated by Bappeda in order to obey the valid regulation on the formulation of spatial plan.

6. PROGRESS ON REHABILITATION AND RECONSTRUCTION OF LAND ADMINISTRATION IN BANDA ACEH

It has been more than one years after the December 26 catastrophe happened in Banda Aceh. Even though the picture of destruction of earthquake and tsunami still could be found, generally Banda Aceh has almost recovered from the devastating power of December 26 earthquake and tsunami. However, Banda Aceh would never be the same city as it used to be as many changes have happened in the city since the December 26 catastrophe.

This chapter describes the changes and progress on rehabilitation and reconstruction of land administration in Banda Aceh, particularly on land tenure and land use policy and implementation. This description is mostly acquired during the period of survey in Banda Aceh.

The description on rehabilitation and reconstruction of land administration in Banda Aceh is structured as comprises of three main sub-sections, which are Cadastral Reconstruction (Section 6.1), Spatial Planning (Section 6.2) and Land Administration Intersectoral Progress (Section 6.3) of Banda Aceh. Section 6.1, Cadastral Reconstruction of Banda Aceh, explains the conceptual design and regulation, as well as their implementation, within the rehabilitation and reconstruction of land tenure in Banda Aceh. Section 6.2, Spatial Planning of Banda Aceh, investigates the changes on the spatial planning policy of Banda Aceh after the December 26 catastrophe. Section 6.3 further accommodates the description of land administration-related changes that are not included within the Section 6.1 and Section 6.2.

6.1 Cadastral Reconstruction

Basically, every activity within the scope of rehabilitation and reconstruction of NAD and Nias should be in accordance with the Master Plan of Rehabilitation and Reconstruction of NAD and Nias. One of the vital aspects of rehabilitation and reconstruction of NAD and Nias is land tenure since the nature of land tenure is to legally guarantee the property ownership. Unfortunately, Master Plan is rarely mentioned the policy and guidance on reconstruction of land tenure in NAD and Nias.

Cadastral reconstruction is urgently needed to be performed on rehabilitation and reconstruction of post-earthquake and –tsunami areas. This circumstance is based on the fact that the December 26 tsunami affected at least 300,000 parcels within tsunami-affected areas (Harun *et al.*, 2005). According to Harun *et al* (2005), among those affected parcels by tsunami, there are only 60,000 parcels that are titled. Unfortunately, most of official documents of titled parcels were flooded, even some of them are lost, as the Regional BPN office in Banda Aceh was swapped by tsunami wave. The cadastral maps in tsunami-affected areas are destroyed. There is no back up at all for all of the official documents of titled parcels within tsunami-affected areas. Even BPN office in Banda Aceh has lost 42 of its employees (BPN, 2005).

This section is structured as comprises of three sub-sections, which are Conceptual Design of Cadastral Reconstruction (Section 6.1.1), Regulation on Cadastral Reconstruction (Section 6.1.2) and Implementation of Cadastral Reconstruction (Section 6.1.3).

6.1.1 Conceptual Design of Cadastral Reconstruction

In order to begin the process of cadastral reconstruction, it is definitely needed to characterise the problems that will be faced during the reconstruction process itself. Bappenas (2005b) suggest that the identification of the problem characteristics of cadastral reconstruction should be based on four key items of land registration, which are land owner, land certificate, official document and land itself. Furthermore, the combination of the possible state of each key item of land registration will result the estimation of problem characteristics of cadastral reconstruction. See Table 6.1 for detail.

Tab. 6.1 Identification of problem characteristics on cadastral reconstruction at tsunami-affected areas

NO.	LAND	LAND OWNER	LAND CERTIFICATE	OFFICIAL DOCUMENT
1	Exist	Exist	Exist	Exist
2	Exist	Exist	Exist	No
3	Exist	Exist	No	Exist
4	Exist	Exist	No	No
5	Exist	No	Exist	Exist
6	Exist	No	Exist	No

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NO.	LAND	LAND OWNER	LAND CERTIFICATE	OFFICIAL DOCUMENT
7	Exist	No	No	Exist
8	Exist	No	No	No
9	No	Exist	Exist	Exist
10	No	Exist	Exist	No
11	No	Exist	No	Exist
12	No	Exist	No	No
13	No	No	Exist	Exist
14	No	No	Exist	No
15	No	No	No	Exist
16	No	No	No	No

Source: Bappenas (2005b)

As it is described in the first column of Table 6.1, the problem characteristic on land at tsunami-affected areas is regarding existence of the land. Indeed, it is hard to believe that land could be banished, especially while the land is defined using definition of land from Section 1.2. However, in the case of tsunami-affected areas, there are lands that are physically banished since tsunami has flooded most of area within 2 km from coastline.

Besides its existence, the land border is urgently needed to be identified. The most effective approach is by employing IKONOS images for identification of the land, its border and its owner.

The second column of Table 6.1 represents the problem characteristic of subject of land registration, which is land owner. Regarding the land owner, problem will arise when the land owner has passed away because of earthquake and tsunami. According to Article 20 Section 1 of UUPA, land ownership has an inheritance attached on it. Therefore, while the land owner has passed away, the heir of the land owner will automatically hold the ownership of the land. As the heir of land owner has also passed away, special regulation is applied for latter case. Since NAD is an autonomy province that implements Islamic Law, there are two alternatives for solving the latter case. In the case of land owner and his/her heirs who have passed away are Moslem, a socio-religious institution so called *Baitul Maal* will be in charge of the land for a certain time. *Baitul Maal* has also an authorisation to manage the land. As in the future there is a person that could prove his/her blood relationship to the land owner, the person will automatically hold the ownership of the land. The same person will also get compensation if there is modification during period of authorising of the land by *Baitul Maal*. For the land owner and his/her heirs who are not Moslem, the land will be assisted to spatial planning and land registration program of Government of Indonesia (GoI).

Other problem characteristics of post-earthquake and –tsunami areas are represented in the third and fourth columns of Table 6.1, which are regarding the existence of land certificate and official document of the land. Basically, land certificate is only representing the official document of land that is held by the land owner. Therefore,

the loss of the land certificate will cause no harm to the land ownership as long as the official document of the land still existed. It will become the problem indeed while the official document of the land is lost. As the official document of land is lost as well, the only solution for this case is re-registering the land, based on the information from first and second column of Table 6.1.

6.1.2 Regulation of Cadastral Reconstruction

Cadastral reconstruction at earthquake- and tsunami-affected areas is considered as a special case of cadastre in Indonesia, especially in NAD case. In the case of cadastral reconstruction in NAD, the implementation of Islamic Law has given different nuance on rehabilitation and reconstruction of land administration in NAD. Thus, BRR and BPN consider it is necessary to formulate special regulation to address the problem solving of cadastral reconstruction that have been described by Table 6.1. The special regulation on cadastral reconstruction is still being discussed by GoI, BRR and BPN. This special regulation will be published as Regulation of Law of Government of Republic of Indonesia in Lieu (Peraturan Pemerintah Pengganti Undang-Undang/Perpu) concerning Management of Cadastre after Earthquake and Tsunami in NAD and North Sumatra, which is further called Perpu on Cadastral Reconstruction in NAD and Nias.

Having examined the draft of the Perpu on cadastral reconstruction in NAD and Nias, this Perpu will hopefully bring new era on Indonesian cadastre. The crucial turning point in this Perpu is the definition of banished land. According to draft of Perpu on Cadastre at Tsunami-affected Areas, banished land is defined as land that could not be functioned and used because of natural disaster. Even though UUPA has mentioned that every banished land will be taken care by state, banished land has never been defined within every cadastre regulation in Indonesia.

Besides carrying out the new definition of banished land, this Perpu will become the first regulation in Indonesian cadastre history that is intending to cover cadastral problem within specific area only. The employment of Baitul Maal is an example of adaptation of this Perpu to the *hak ulayat* in NAD.

In order to fulfil its first responsibility (see Section 5.2.3 for details), BRR has published Participatory Land Mapping Guidelines for addressing rehabilitation and reconstruction of land tenure system in NAD and Nias (BRR, 2005d). Participatory land mapping was issued to fulfil the directives of GoI on rehabilitation and reconstruction of NAD and Nias, particularly on engaging public participation and utilisation of the social institution to address disaster and development activities, as well as highlighting cultural and religious characteristics, combining top-down and bottom-up spatial planning approach, accelerating the land registration process, revitalising economic activities based on local natural resources and reconstructing disaster-affected cities into their initial state of order (see Section 5.2.1 on GoI's land administration policy in post-disaster areas in NAD and Nias). Furthermore, the participatory mapping was issued to overcome the lack of professionals for registering rights to land in NAD and Nias.

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According to Guidelines on Participatory Land Mapping, the objectives of participatory mapping programme are to provide:

- Data concerning land ownership and its status after the December 26 catastrophe;
- Base maps for village planning process;
- Base maps for land titling by BPN.

The principles of participatory land mapping are as follows (BRR, 2005e):

- Participatory land mapping is performed in order to reinstate the land ownership before the December 26 catastrophe happened;
- Participatory land mapping is performed by community. It is suggested to cooperate with the institutions that are capable and liable on mapping;
- Each land parcel should be identified by its owner. In the case of the absence of land owner, the identification of land parcel should be done by witnesses;
- Each parcel's boundaries should be conformed by land owner, or its descendant(s), of adjacent parcels, as well as the witnesses and head of village or head of district in question;
- BPN performs the land titling based on the valid regulations.

On the absence of land owner while the participatory land mapping process is on going, the descendant(s) of the land owner should represent his/her ancestor. The authority of identification of the descendant of the land owner is granted to local religious leader and/or head of village. While the descendant is still underage, the descendant then should be represented by *Mahkamah Syariah* (Islamic Court of Law). In the case of non-Moslem descendant, Perpu on Cadastral Reconstruction in NAD proposes that the descendant should be represented by local court.

The participatory land mapping programme comprises of following phases (BRR, 2005e):

- Preparation phase, comprised of the explanation of the programme and formation of village survey team;
- Training phase, comprised of the training on survey procedures and drawing the survey results on map;
- Survey phase, comprised of land parcel staking, survey and sketching;
- Cartographic phase, creating the scaled map from the survey sketches and list of land owners based on land parcels identification;
- Notification phase, conforming and notifying the mapping result.

6.1.3 Implementation

As an agency that is in charge of land registration in Indonesia, BPN is becoming the key actor of rehabilitation and reconstruction of land administration at tsunami-affected areas. In order to fulfil its task at tsunami-affected areas, BPN has been working on a project called Recovery of Property Rights and Reconstruction of Aceh Land Administration System (RALAS) since August 2005. This project aims to improve land tenure security in NAD by recovering and protecting the land rights of

the people in the tsunami affected and surrounding areas and by rebuilding the land administration system in NAD (BPN, 2005). The expected outcomes of this project are:

1. Protection of property rights of affected communities;
2. Reconstitution of land records and reconstruction/renovation of damaged land offices;
3. Establishment of a transparent and effective process of dispute settlement of land conflicts;
4. Completion of the issuance of land titles of urban and agriculture land in NAD.

According to BPN (2005), RALAS will consist of three phases, which are:

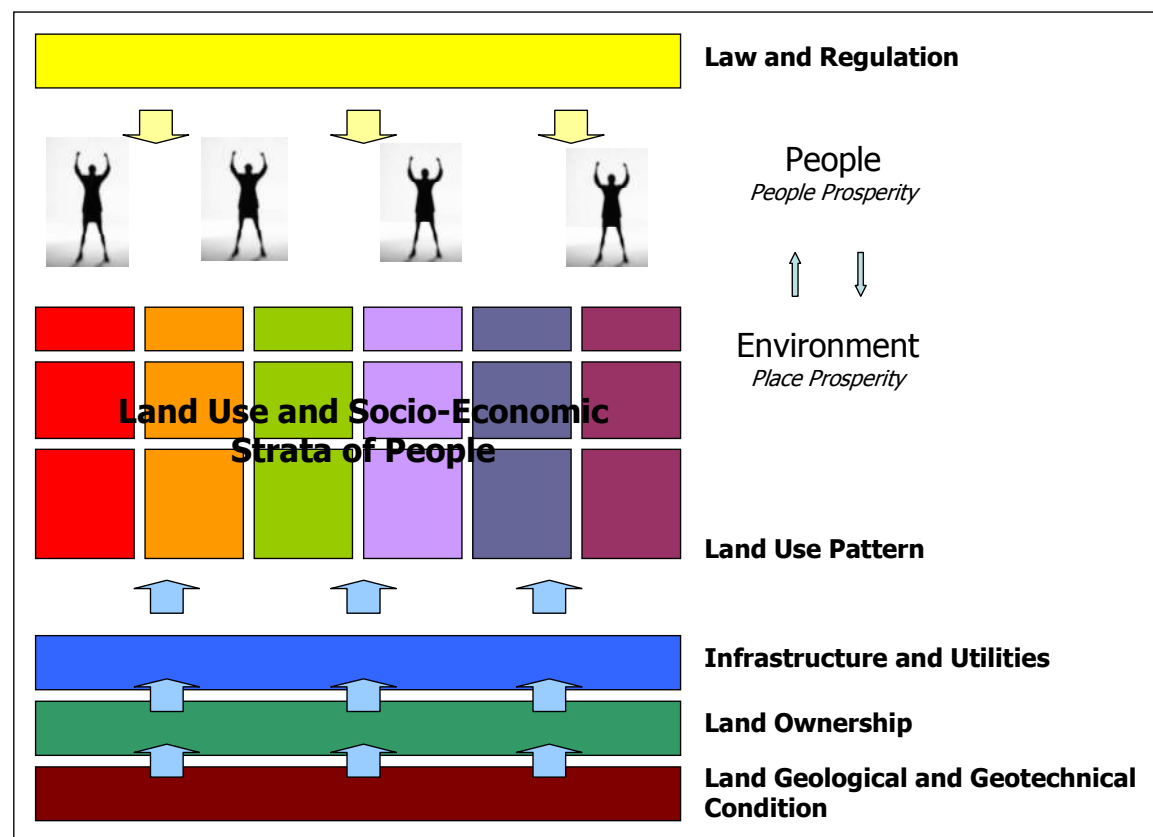
1. Urgent recovery of land records. This phase will focus on the immediate actions that are needed to recover the damaged land records and cadastral maps, undertake public relations to address the immediate concerns of the affected communities, and initiate the process to recover the occupation database. This phase is expected to be completed by the end of June 2005;
2. Establishing land occupancy records database and initiating design and reconstruction of land offices. This phase is expected to be completed by the end of September 2005;
3. Rebuilding the land administration system. This phase is expected to be completed within three years.

6.2 Spatial Planning for Banda Aceh

Principally, spatial planning for NAD and Nias with regard to rehabilitation and reconstruction of earthquake- and tsunami-affected areas is based on provincial and regency/municipality spatial structure guidance from Book I of Master Plan of Rehabilitation and Reconstruction of NAD dan Nias. Bappenas (2005b) also provides spatial pattern guidance for rehabilitation and reconstruction of Banda Aceh.

As mentioned in Section 5.2.1, it is emphasised that the spatial planning regarding the rehabilitation and reconstruction of NAD and Nias should combine top-down and bottom-up approach. The objective of combining top-down and bottom-up spatial planning approach is to accommodate both macro and micro consideration proportionally (Bappenas, 2005a).

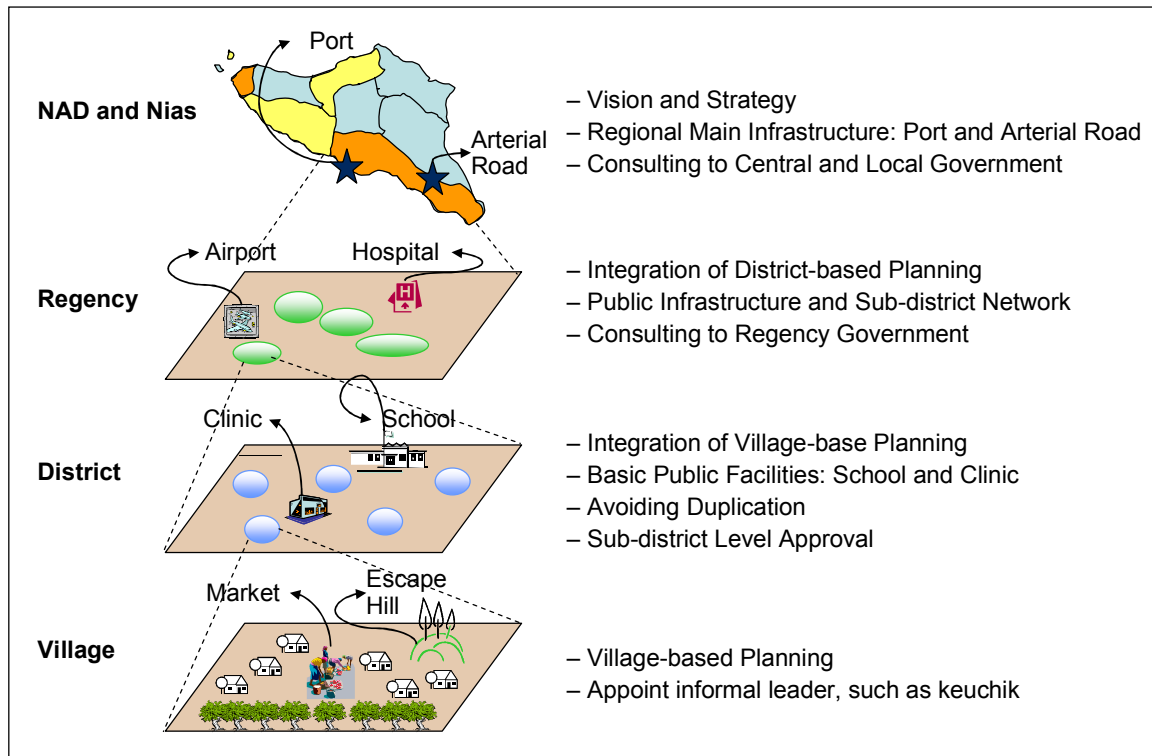
Unfortunately, the macro scale of Master Plan has created distances for implementing GoI directives on rehabilitation and reconstruction of NAD and Nias. Therefore, GoI mandated BRR to establish the more detail concept for spatial planning regarding rehabilitation and reconstruction of NAD and Nias. According to BRR (2005), the top-down approach of spatial planning is represented by law and regulation. On the other hand, the bottom-up approach should be started from the identification of sub-structure of the land, followed by identification of land ownership (see Section 6.1 for details) and establishment the rehabilitation and reconstruction of infrastructures and utilities. See Figure 6.1 for detail.



Source: BRR (2005b)

Fig. 6.1 Spatial Planning Concept on Rehabilitation and Reconstruction of NAD and Nias

In the implementation level, BRR and local government of NAD and Nias have been working parallel on setting up the spatial pattern guidance. Local governments of NAD and Nias are responsible for establishing provincial and regencies/municipals spatial pattern guidance, while BRR and its partners are in charge on facilitating participatory spatial planning (BRR, 2005a). See Figure 6.2 for details. The exceptions have been made on establishment of spatial pattern guidance for some municipalities that have important administrative function in NAD and Nias, such as Banda Aceh and Gunungsitoli. In the case of Gunungsitoli, BRR is directly in charge on setting up the plan for revitalisation of Gunungsitoli, the capital of Regency of Nias (BRR, 2005b). Subsections below will describe the progress on top-down and bottom-up spatial planning approach in Banda Aceh.



Source: BRR (2005a)

Fig. 6.2 Implementation Concept of Combined Top-down and Bottom-up Spatial Planning Approach

6.2.1 Top-down Spatial Planning Approach

GoI took into account the importance of Banda Aceh on rehabilitation and reconstruction of NAD and Nias. Therefore, GoI asked JICA, as the representation of Government of Japan (GoJ), to formulate the urgent rehabilitation and reconstruction plan, especially for Banda Aceh (JICA, 2005). According to JICA (2005), it is presumed that GoJ had experienced various issues/difficulties on planning and implementation of reconstruction works in Kobe, Japan, after earthquake in 1995.

In order to ensure the strong foundation of analysis of urgent rehabilitation and reconstruction plan of Banda Aceh, JICA provides some important facts on its report regarding the condition of Banda Aceh before and after the December 26 catastrophe (2005). Those important facts are:

1. Under pre-disaster condition:

- Economic activity:

In fact the economic development of Banda Aceh could not balance its population growth, which is resulting a low per capita real income. The numbers of poverty percentage and unemployment was very high. The Gross Regional Domestic Product (GRDP) of Banda Aceh in 2002 (excluding oil and natural gas product) was estimated at USD 350, which equals to less than a half of national average of USD 710. Key problems of impediment of

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Banda Aceh growth were insufficient private sector development, weak basic infrastructure, lack of export commodity diversification and high incidence of poverty;

- Infrastructure:

Banda Aceh was equipped with ground, sea and air transport system. The transport system of Banda Aceh has played an important role to the development of NAD, as well as connecting the eastern part of NAD along Malacca Strait to the western part along the Indian Ocean. The sea transport system provided connection to northern offshore islands of Sumatra Island, which is mostly the only means to reach those islands. Unfortunately, the heavy dependency on arterial road transverses and wounds the densely populated had created traverse capacity bottleneck. Efforts to extend Banda Aceh to the northern part of arterial road were unsuccessfully done due to the natural force of the sea and malfunctioned drainage system. Due to the unsuccessful extension of Banda Aceh, local government of Banda Aceh had had a long-term plan to establish new southward city centre and new city sub-centres as satellite business districts scattered around the new city centre. The sewerage and drainage system were still incomplete, which caused shallow flooding at the city centre when heavy rain occurred;

- Disaster preparedness:

Neither local government units nor citizens had enough knowledge of disaster preparedness. The incomplete ring-road and north-south road transverses city centre has blocked accesses to the disaster-affected areas.

2. Under post-disaster condition:

- Loss of economic basis:

The basis of economic development of Banda Aceh, such as commercial activities, basic infrastructure and human resources, was seriously damaged. Therefore, it is suggested that government implements policies and reforms to accelerate economic growth on a sustainable basis, as well as generate productive employment to absorb existing and increasing labour force. There is also a need to solicit external source of financial assistance to finance the rehabilitation and reconstruction of Banda Aceh. Expansion of rehabilitation activities is hampered, especially on providing housing for dislocated families.

- Land subsidence:

Many of dislocated families wish to return to their homeland. Therefore, the land subsidence has become an important issue for formulating resettlement plan. The geographic conditions and tidal effects during high tide should become considerations on planning road network alignment and housing development.

- Local government unit capacity:

The loss of numbers of competent government staffs has degraded the administrative capability of local government units, which leads to insufficient maintenance towards rehabilitation and upgrading of damaged basic infrastructure, land titles and so forth. The need for economic development and income generation impeded efforts to resume pre-disaster social and economic activities. The loss of documents on land ownership and family registration, as well as non-existence of nation disaster or relief act are exaggerated the delay on rehabilitation and reconstruction activities.

Basically, the JICA's proposal on urgent rehabilitation and reconstruction plan of Banda Aceh is an elaboration of visions and goals of Master Plan, geographic characteristics, disaster preparedness and actual implementation of city development at village level (JICA, 2005). Therefore, Banda Aceh development plan covers following aspects and plans:

- Population forecast and distribution in the city;
- Formulation of city development plan;
- Zoning and land use plan;
- Road framework plan;
- Housing development plan;
- Disaster preparedness;
- General approach to village planning;
- General approach to micro plan
- Case study for micro plan.

Subsections below will describe the JICA's proposal on urgent rehabilitation and reconstruction plan for Banda Aceh based on above mentioned aspects and plans, except for general approach to village planning, general approach to micro plan and case study for micro plan. The three latter mentioned aspects will be explained later in Chapter 4.2.2.

6.2.1.1 Population Forecast and Distribution in Banda Aceh

According JICA (2005), the population of Banda Aceh in 2004 has reached 263.668. Due to civil conflict, the population of Banda Aceh has steeply increased since 2003. See Figure 6.3 for the trend of population of Banda Aceh.

Having stroked by the December 26 catastrophe, there is a need to forecast the population of Banda Aceh regarding the rehabilitation and reconstruction of Banda Aceh. Thus, JICA attempts to forecast the population of Banda Aceh based on three methods as follows (2005):

1. Method 1: Extrapolation of average growth rate

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Since the 2003 and 2004 population growth was affected by the inflow from the surrounding areas, the future population of Banda Aceh is estimated by using the average growth rate of 2.1% between 1998 and 2003.

2. Method 2: Regression method

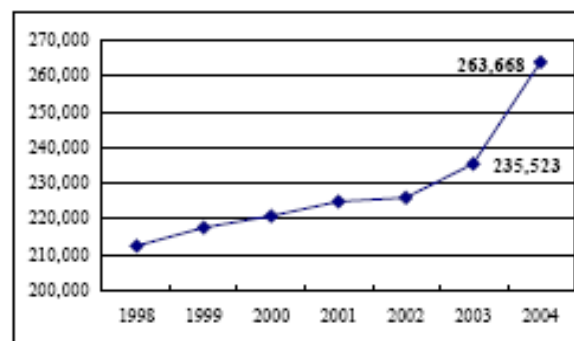
The linear regression formula is developed from population of Banda Aceh between 1995 and 2004. The formulated linear regression formula for future population of Banda Aceh is as follows:

$$Y = -14.211.050 + 7.216,14X \quad \dots \text{Eq (1)}$$

See Table x for population forecasting of Banda Aceh up to 2009 based on regression method.

3. Method 3: Annual growth rate with a special growth

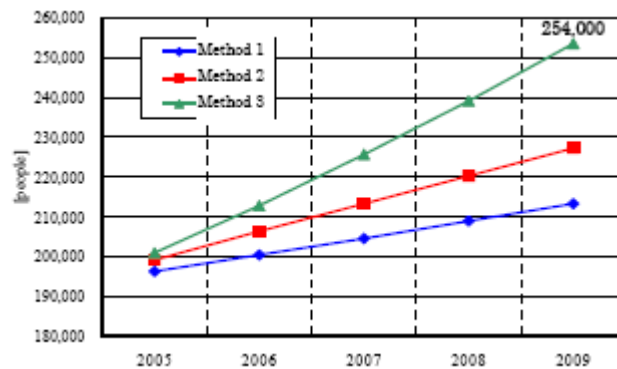
This method is usually employed in area that experienced calamity. The special growth is employed in that particular area due to social increase of reconstruction work and sharp natural growth. For Indonesia, the World Bank adopted the annual growth of 6% for projecting population at tsunami-affected areas in Indonesia.



Source: JICA (2005)

Fig. 6.3 Trends of population of Banda Aceh

Method 3 is decided as the most applicable method in the case of Banda Aceh. Using Model 3, the population of Banda Aceh in 2009 is estimated at 254.000. See Figure 6.4 for the population projection using above mentioned methods.



Source: JICA Study Team

Fig. 6.4 Population projection of Banda Aceh in 2009

Besides population projection, JICA is also taking into account the population distribution of Banda Aceh for creating strong basic analysis of planning of housing requirement and infrastructure development (2005). It is estimated that there are three methods influenced the population of Banda Aceh up to 2009. The three methods are (JICA, 2005):

1. Natural growth

Based on statistical analysis for over 10 years including birth rate and surviving rate of each age group, the average natural growth rate is estimated at 0.3% per year.

2. Social growth

Social growth is attributable to migrants and becoming a difference of the gross population increase deducted by the projected population of natural growth rate. It is estimated that the social growth of Banda Aceh will approximately reach 0.9%.

3. Special growth:

Special growth is due to expansion of housing area.

6.2.1.2 Formulation of Banda Aceh Development Plan

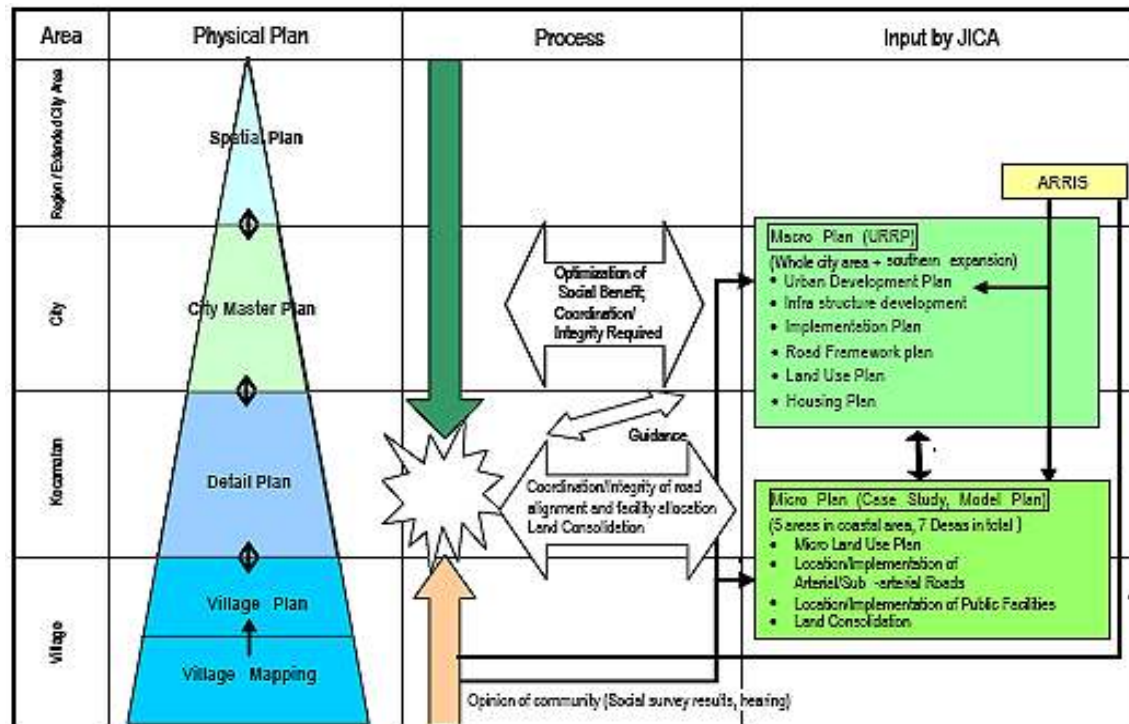
According to JICA (2005), Banda Aceh administration established its City Master Plan for 2001-2010 in March 2001. The City Master Plan adopted multi-core type with linear growth along the major roads. The city plan focused on:

1. Harmonising and optimising land use;
2. Providing infrastructure and facilities properly;
3. Providing efficient transport system;
4. Improving environmental quality as well as preservation.

The projected population is 307,695 and projected density is 52 people per ha in 2010. The number of household is projected at 61,539 based on average family size of 5.

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As the City Master Plan of 2001-2010 abandoned because of the December 26 catastrophe, JICA proposes the physical plan of Banda Aceh that comprises several associating plans, which includes the harmonisation of top-down and bottom-up spatial planning approach (2005). See Figure 6.5 for the hierarchy of proposed physical plan of Banda Aceh.



Source: JICA Study Team

Fig. 6.5 Hierarchy of development plan of Banda Aceh

Unfortunately, the plans of villages in Banda Aceh could not be included yet within the proposal of Banda Aceh development plan. According to JICA (2005), it will take a long way to get the village plans ready since public meetings has just began at some villages at the time of preparation of urgent rehabilitation and reconstruction of Banda Aceh. Even it will take longer due to damaged land documents of some villages. Therefore, urgent rehabilitation and reconstruction of Banda Aceh prepared by JICA is only focusing on formulation of Banda Aceh development plan. Regarding the village-based planning, JICA only provides the guidelines of village-based planning, harmonising top-down and bottom-up spatial planning approach and case study of village-based planning. Information regarding the village-based planning will be explained later in Chapter 6.2.2.

In order to formulate the development plan of Banda Aceh, JICA has studied various types of city development model. Normally, the city development model is characterised by number of population, geographic condition, land use, transportation array, natural environment, administrative services, economic development activities, prevailing culture and tradition and so forth (JICA, 2005). Since the preparedness against disaster is being considered as the important aspect to re-develop Banda Aceh, JICA only examined five conceivable models for the case of Banda Aceh. The

characteristics of each conceivable city development models for Banda Aceh are as follows (JICA, 2005):

1. Model A: Centre growth with dual residential areas
 - Residential area tends to expand to southern area since coastal areas was devastated;
 - Administration and commercial activities remain mostly at the present location.
2. Model B: Centre growth with coastal area development
 - Coastal area will be re-developed to state of pre-condition. The southern part of Banda Aceh will be developed as well;
 - Administration and commercial activities remain mostly at the present location.
3. Model C: Dual centre with dual residential area
 - New urban centre will be established to decentralise administrative and commercial activities from the present urban centre;
 - Residential area will be extended to the area between two urban centres.
4. Model D: Linear growth with dual residential area
 - Commercial and business centre growth is directed along arterial road in the future;
 - Residential area will be developed southward.
5. Model E: Linked multi centre with multi residential area
 - Sub-centres will be developed in form of cluster. The existing urban centre and sub-centres will be linked by arterial road;
 - Administrative centres will be relocated to disperse risk of disaster. Commercial activities would subsequently grow around new administrative centres.

See Figure 6.6 for development pattern and schema of five most conceivable city development models for Banda Aceh.

According to JICA (2005), the rating system is employed to evaluate each city development in order to acquire the most feasible and adaptable for rebuilding Banda Aceh. See Table 6.2 for details.

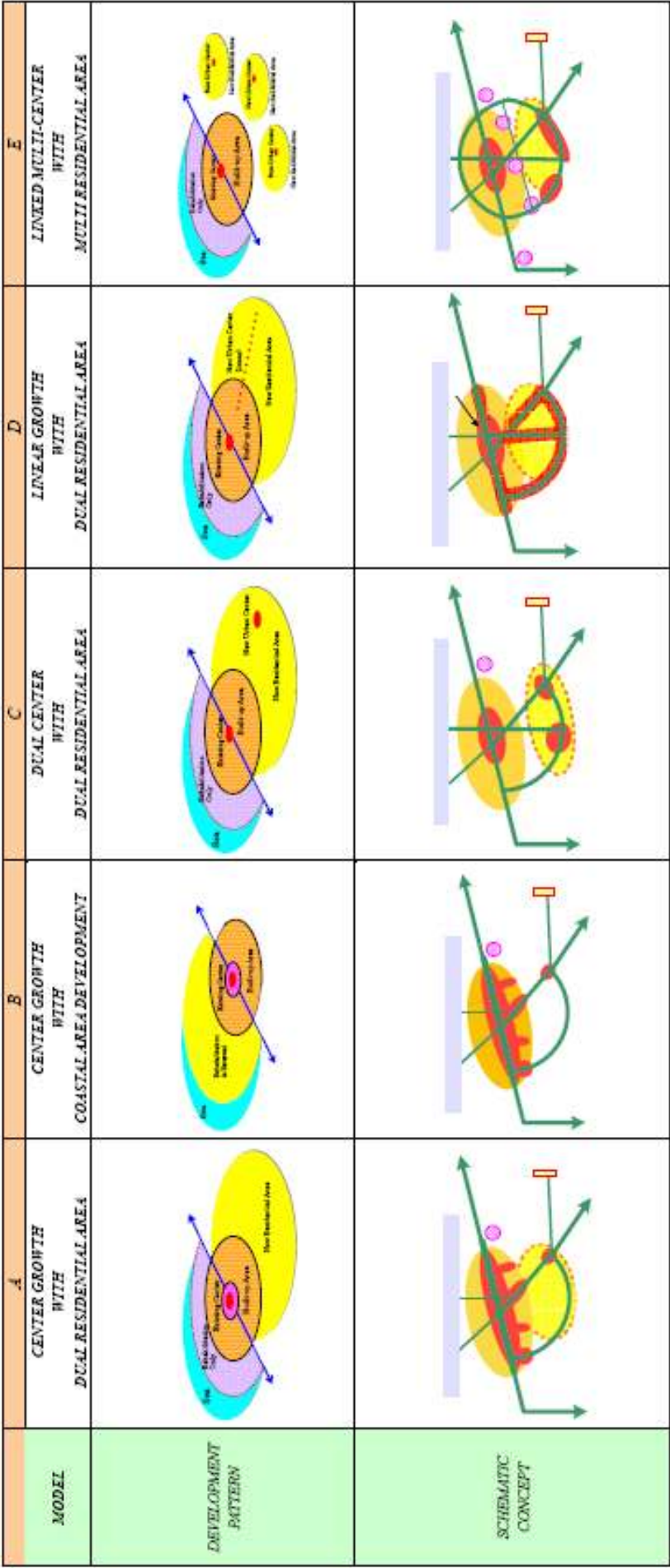
Based on above evaluation, Model E is being considered as the most feasible and adaptable model for rehabilitation and reconstruction of Banda Aceh (JICA, 2005). According to JICA (2005), Model E is the most recommendable model from geographic point of view since there are marginal limitation of urban expansion and

over-concentration in the existing city centre. There is a tendency of deterioration of urban environment due to concentration of commercial activities and traffic in a narrow and lack-of-infrastructure area, even before the disaster happen. By putting into practice Model E, new administration centre is proposed to be relocated southward to contend the expansion and renewal of administration function. The relocation of administration centre will attract related private business and/or commercial development. The growth of new administration centre will also be supported by allocating the mutual linkage and network of urban functions. See Figure 6.7 for concept of Banda Aceh development proposed by JICA.

6.2.1.3 Zoning and Land Use Plan

According to JICA (2005), it seems that zoning of Banda Aceh proposed in Master Plan paid less attention to population increase and disaster preparedness. Therefore, the above mentioned zoning has been reviewed by JICA with regards to proposed development concept of Banda Aceh described in Chapter 6.2.1.2, population growth, available land resources and disaster preparedness. Therefore, JICA proposes to divide Banda Aceh into four zones with paying attention to disaster preparedness (JICA, 2005). See Table 6.3 for the comparison of Banda Aceh zoning proposed in Master Plan and by JICA. See also Figure 6.8 for the proposed Banda Aceh zoning by JICA.

Based on JICA proposal on Banda Aceh zoning, JICA proposes the spatial pattern guidance as well. See Table 6.4 and Figure 6.9 for the JICA proposal on Banda Aceh spatial pattern guidance. See also Table 6.5 for more details of proposed Banda Aceh spatial pattern guidance by JICA for the respective land use category given in Table 6.4.



Source: JICA Study Team

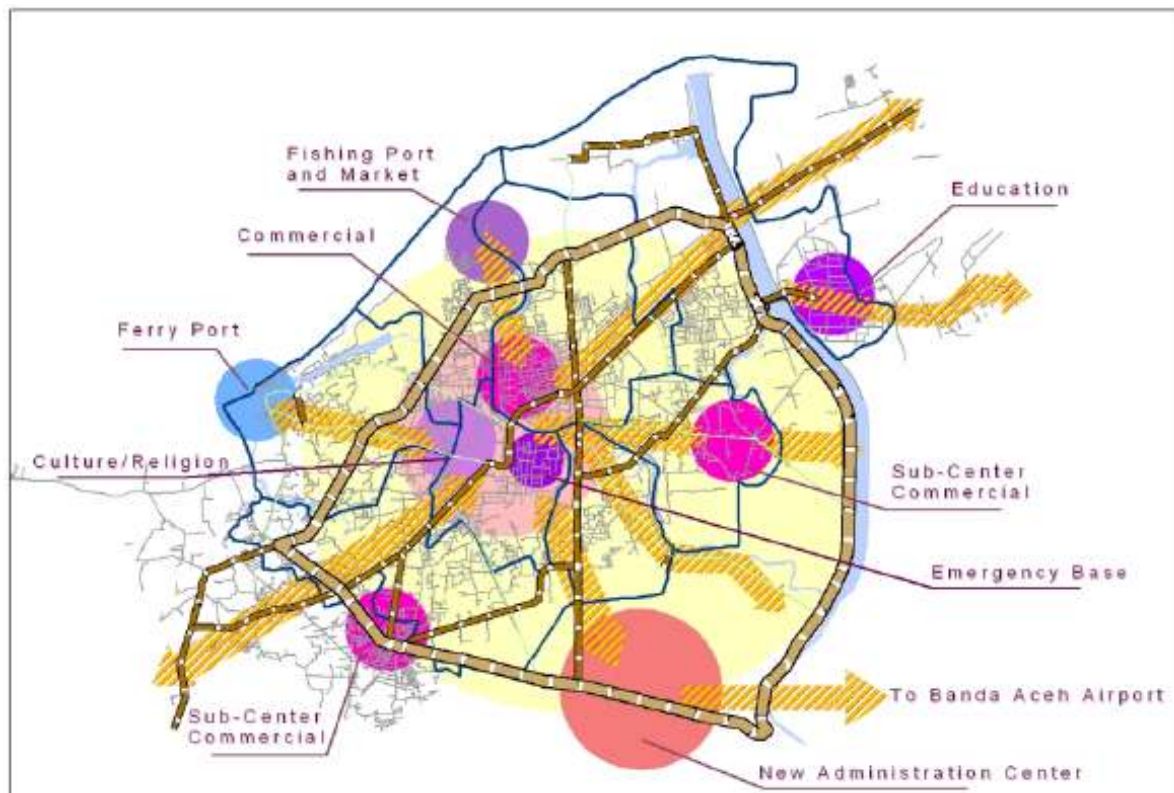
Fig. 6.6 Alternative of city development model

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Tab. 6.2 Evaluation of five development model

Source: JICA Study Team

Evaluation Items	Model A	Model B	Model C	Model D	Model E
Flexibility for future development	3	3	3	3	3
Amenity in urban life	3	3	3	5	5
Prospect for commercial and industrial development	1	1	3	3	5
Efficiency in road traffic	1	1	3	3	5
Urban environment (in order of good to inferior)	1	1	3	5	5
Preparedness against disaster	1	1	3	3	5
Total	10	10	18	22	28

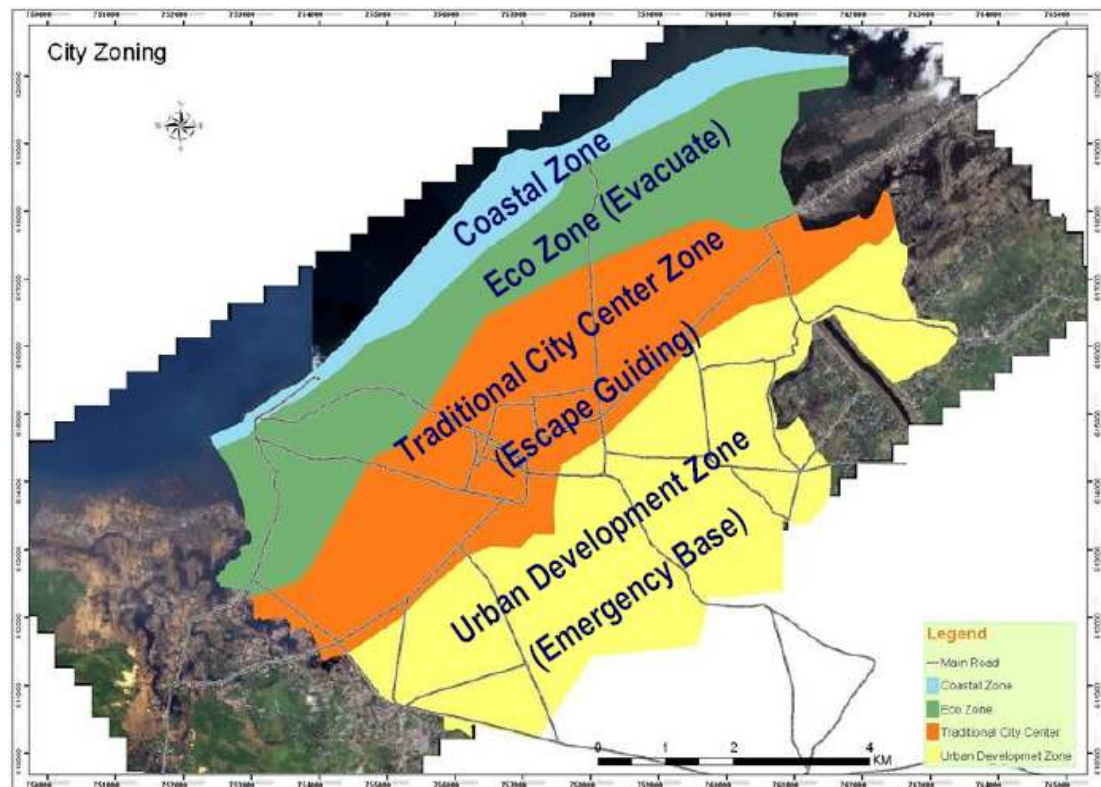


Source: JICA Study Team

Fig. 6.7

Concept of Banda Aceh development proposed by JICA

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Source: JICA Study Team

Fig. 6.8 Banda Aceh zoning proposed by JICA

Tab. 6.3 Comparison of Banda Aceh zoning proposed in Master Plan and by JICA

No.	Zoning in Master Plan	Zoning Proposed by JICA
Zone I		
1	Coastal	Coastal Zone
Zone II		
2	Fishery (non-residential area)	Eco Zone: Evacuation Area
3	City Park	
Zone III		
4	Residential	Traditional City Centre Zone: Escape Guiding Area
5	Old City Centre	
Zone IV		
6	New Residential	Urban Development Zone: Emergency Base - Disaster Mitigation Centre
7	New Central Business District (CBD)	
8	Higher Education	
9	Agriculture	

Source: JICA Study Team

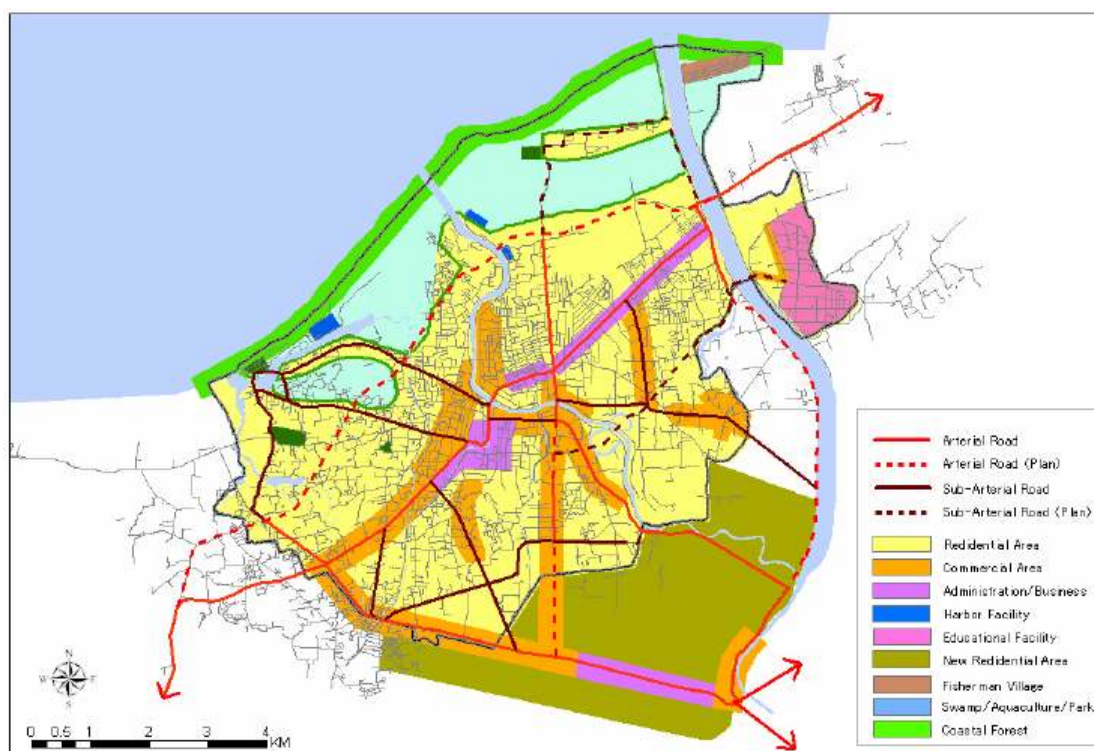
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Tab. 6.4 JICA proposal on Banda Aceh spatial pattern guidance

Source: JICA Study Team

No.	Zone	Disaster Zone Classification	Location/Function	Land Use/Disaster Preparedness
1	Coastal	Tsunami Mitigation Measures	Port Palm tree/Mangrove	<ul style="list-style-type: none"> - Restoration of aqua ecosystem - Coastal forest - Ferry terminal - Seawall facilities along shoreline
2	Eco-Zone	Evacuation Area	Disaster Memorial facilities Fish cultivation and port Fish market	<ul style="list-style-type: none"> - Reconstruction of residential area for returnees - Escape buildings and towers - Escape roads and relief roads - Ring road (northward) - Revival and conservation of aqua ecosystem - Rebuilding of fish culture industry - Use of nature such as aquaculture and parks (education, recreation and tourism) - Dumping site for garbage and solid waste - Sewage treatment plant
3	Traditional City Centre Zone	Escape Guiding Area	Grand Mosque Museum Existing commercial centre	<ul style="list-style-type: none"> - Commercial activities area - Cultural facilities area - Escape buildings - Road transport facilities - Escape and relief roads - Administrative service areas - Emergency relief centre - Educational facilities
4	Urban Development Zone	Emergency Base	New CBD New residential area	<ul style="list-style-type: none"> - New Central Business District - New residential areas - Ring road - New north-south and east-west road - Universities, religious centres and cultural centres - Agricultural lands - Emergency base

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Source: JICA Study Team

Fig. 6.9

Banda Aceh spatial pattern guidance proposal by JICA

Tab. 6.5 Proposed Banda Aceh spatial pattern guidance by JICA for the broad land use category

Source: JICA Study Team

No.	Broad Land Use Category	Detail of Land Use	Location
1	Residential	Original settlement (coastal area) Existing residential area as of Dec. 2005, except in submerged land New residential zone	Ulee Lhue, Alue Naga, Daya Raya (Area that will not be flooded at high tide) Same as left (density will increase) In southern area (new development of housing lots in mostly present agricultural land)
2	Commercial	The commercial zone will consist of linear zone along streets and surrounding centres	Linear commercial zone: <ul style="list-style-type: none"> Along Teuku Umar and Cut Nyak Dhien roads (existing east-west main road) Along Tengku Imom Lueng Bata (main road to southeast) Ulee Kareng and along the streets crossing at Ulee Kareng (east sub-centre) Along Soekarno-Hatta road (southwest ring road) Along south extension of Syiah Kuala road Other commercial zone:

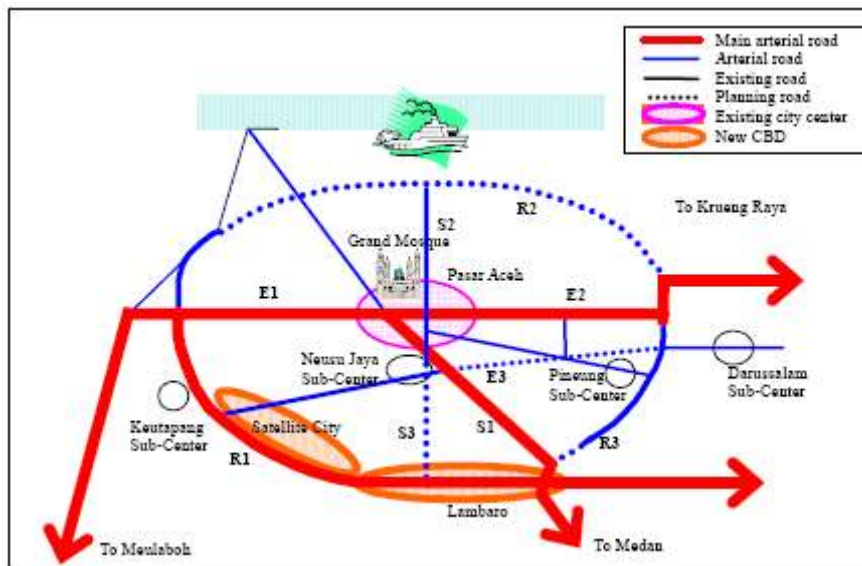
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No.	Broad Land Use Category	Detail of Land Use	Location
			<ul style="list-style-type: none"> - Existing vegetable and fish market and its surrounding - Pasar Aceh and its surrounding
3	Culture/Education, Business and Administration	Culture/education (Grand Mosque, Hall and University) Old business and administration services New business and administration	Grand Mosque and its surrounding Darussalam (Syiah Kuala) and Lueng Bata (universities) Along Mohammad Daud Beureuh and Tengku Nyak Arief road (east-west main road) Along Soekarno-Hatta road (southwest ring road)
4	Coastal	Natural coast, vegetation, aquaculture Original settlement Port Fish market Disposal site and treatment plant	Coast Ulee Lheu, Alue Naga, Deah Raya Ulee Lheu, new Lampulo Lampulo North Kuta Raja
5	Park and Open Space	Recreation and sport for citizens Emergency bases for relief and refugee Memorial, educational facilities	Escape play set (sout of existing east-west main road) Park for emergency bases (north of existing east-west main road) Big tree park (Ulee Lheu) Big ship park (east of Jaya Baru) Syiah Kuala park (Deah Raya)

Source: JICA Study Team

6.2.1.4 Road Framework Plan

Based on present traffic situation in Banda Aceh, JICA considers that there is a need to improve road framework plan (JICA, 2005). The proposed improvement of Banda Aceh road framework is based on the chosen model of Banda Aceh development. See Figure 6.10 for details.



Source: JICA Study Team

Fig. 6.10 JICA proposal on improvement of Banda Aceh road framework

According to JICA (2005), it is proposed to complete the ring road by constructing road <R2> and completing <R3>. It is also proposed to complete <S2-S3> arterial road to connect the northern part of Banda Aceh to southward, establish arterial road <E1-E2> and <E3> road to provide more alternatives for east-west road connection. The proposed Banda Aceh road framework plan by JICA will connect city sub-centres, as well as provide escape routes in emergency.

6.2.1.5 Housing Development Plan

The housing development plan of JICA will follow the housing scheme of GoI (JICA, 2005). See Table 6.6 for details.

6.2.1.5 Disaster Preparedness

JICA (2005) also proposes following arrangement regarding the disaster preparedness for post-disaster areas in Banda Aceh:

- Disaster control and mitigation plan;
- Hazard potential;
- Disaster mitigation;
- Emergency facility plan;
- Warning and dissemination system;
- Public education of disaster awareness.

6.2.2 Bottom-up Spatial Planning Approach

Many publications regarding rehabilitation and reconstruction of land administration in NAD and Nias emphasise the implementation of bottom-up spatial planning approach (see Bappenas, 2005a; Bappenas, 2005b and JICA, 2005). The bottom-up spatial planning has been implemented in earthquake and tsunami relief process as village-based planning programme. See Figure 6.11 and Figure 6.12 for the village-

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based planning concept within general and implementation concept of spatial planning for rehabilitation and reconstruction of NAD and Nias.

Tab. 6.6 GoI's housing development plan

Source: JICA Study Team

	Low Income People	Medium to High Income People	
		Rental	Owned
Return to original village	Public low-cost rental flats as escape buildings will be constructed in coastal area for people without assets	Structural Measures	
		Public facilities including escape road, escape building (school mosque, health centre, market, rental flat, etc), infrastructure (water supply, drainage and sanitation) and parks on disaster preparedness will be planned and implemented; Participatory village plan will be supported to be made by the residents; The structure of buildings shall be strong enough for earthquake-proof and shall be high-floored for tsunami.	
	Support for formation of fishermen, agricultural and retail labour union will be made. Aids for funds, facilities and housing will be given through the labour union.	Rental houses will be constructed mainly by aid of NGOs and donors.	Land consolidation system will be promoted; Reduced land area for public facilities will be paid that will be part of fund for reconstruction of houses; Low interest housing loan will be provided; Tax reduction will be considered.
		Non-structural Measures	
Resettled to inland area	Public low-cost rental flats will be constructed in inland area for people without assets.	Public mediation between the house owners (lenders) and the tenants will be facilitated; Preferential taxation system will be applied;	Consultation system will be made in the city; Housing loan on low interest rate will be provided; Preferential taxation system will be applied.
		Structural Measures	
		Promotion and incentive will be given to landowners in the inland area to prepare decent rental houses.	The structure of buildings shall be strong enough for earthquake-proof
	Subsidy to rent or tax reduction will be given.	Development of residential neighbourhood will be promoted with public incentive measures;	
		Public low price housing will be prepared; Infrastructure (road, water supply, drainage, sanitation, electricity) will be developed.	
		Non-structural Measures	
		Subsidy to rent or tax reduction will be given	Tax reduction will be considered for acquisition of housing.

As mentioned earlier in Chapter 6.2, BRR and its partner are responsible for facilitating village-based planning at earthquake- and tsunami-affected area in NAD and Nias. Therefore, BRR published Village-based Planning Guidelines to direct the performance of village-based planning.

As the partner of BRR, JICA is also responsible to take into account the village-based planning for setting up the Banda Aceh spatial pattern guidance. Since the village-based planning has just started at the time of the preparation of study of urgent rehabilitation and reconstruction of Banda Aceh by JICA, therefore Banda Aceh development plan proposal of JICA only provides general approach to village planning and micro plan, as well as case study of micro planning in Banda Aceh (JICA, 2005).

Subsections below will explain village-based planning guideline and its implementation in Banda Aceh, as well as general approaches proposed by JICA.

6.2.2.1 Village-based Planning Guideline and Its Implementation in Banda Aceh

In the village-based planning guideline, it is emphasised that each village-based planning includes plan on land use, establishment of basic infrastructures and utilities, establishment of housing and environmental facilities, establishment of rescue facilities and environmental rehabilitation (BRR, 2005c). It is also highlighted the importance of enhancement of basic infrastructures, such as widening roads and drains, on disaster preparedness. The cooperation from the residents of the village is expected to enhance their village environmental condition by granting small part of their land.

Having learned from the December 26 earthquake and tsunami, it is suggested to provide rescue facilities as follows (BRR, 2005c):

1. For earthquake preparedness:

Open spaces that provide access to the higher places, such as sport fields, house yards, school yards and mosque yards;

2. For tsunami preparedness:

- Escape hills;
- Strong and stories buildings;
- Plant belts;
- Sturdy houses and building.

It is mentioned further in the village-based planning guideline that GoI provides alternative for the citizens of NAD and Nias on planning their places of living (BRR, 2005c). According to BRR (2005c), alternatives provided by GoI are as follows:

1. Rebuild the village as it was before the December 26 catastrophe. This option is not recommended at all since most of villages in NAD and Nias were built without careful planning;
2. Rebuild the village as it was before the December 26 catastrophe with several enhancements, such as providing additional escape routes and facilities;
3. Re-plan the development of part/whole village;
4. Combination of three above mentioned options;
5. Relocation to other location in the case of land submersion and decision of village residents for not coming back to their original place of living.

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In the case of submerged land, GoI provides three options as follows (BRR, 2005c):

1. Restoring the land as long as it is technically and financially possible;
2. Expecting the grant of land from neighbours;
3. Being relocated to other locations that have been prepared by local government in separate program.

Village-based planning program is a continuation of participatory mapping and community driven adjudication. Therefore, data acquired from participatory mapping and community driven adjudication is needed to perform village-based planning program. The data needed to perform village-based planning is as follows (BRR, 2005c):

1. Land, its owners and resident of the village before and after the December 26 catastrophe, including:
 - Land owners who are going to settle back to the village;
 - Land owners who are not going to settle back to the village;
 - Land owners who have passed away with no heirs;
 - Unidentified land owners;
 - Submerged land;
 - Residents who have moved to other villages;
 - Residents who rent house/building;
2. Property tax;
3. Border of flooded area;
4. Map of the village after the December 26 catastrophe. If the village map is not available yet, the village should perform participatory mapping and community driven adjudication program;
5. Identification of related spatial plan to integrate district and other village spatial plan, particularly on drainage, road, electricity, water pipe, placement of school and other public infrastructure. It should be also identified the land use, residents' density arrangement, building outlines and green belts policy;

Having had above mentioned data in hand, the further steps of village-based planning program are as follows:

1. Determine the option of resettlement chosen for planning the village;
2. Plan the village facilitated by trained person for facilitating village-based planning;
3. Adjust the village plan with other adjacent villages and district plan;
4. Create agreement on village plan among the residents;
5. Promulgate the village plan by local government
6. Construct houses, infrastructures and utilities.

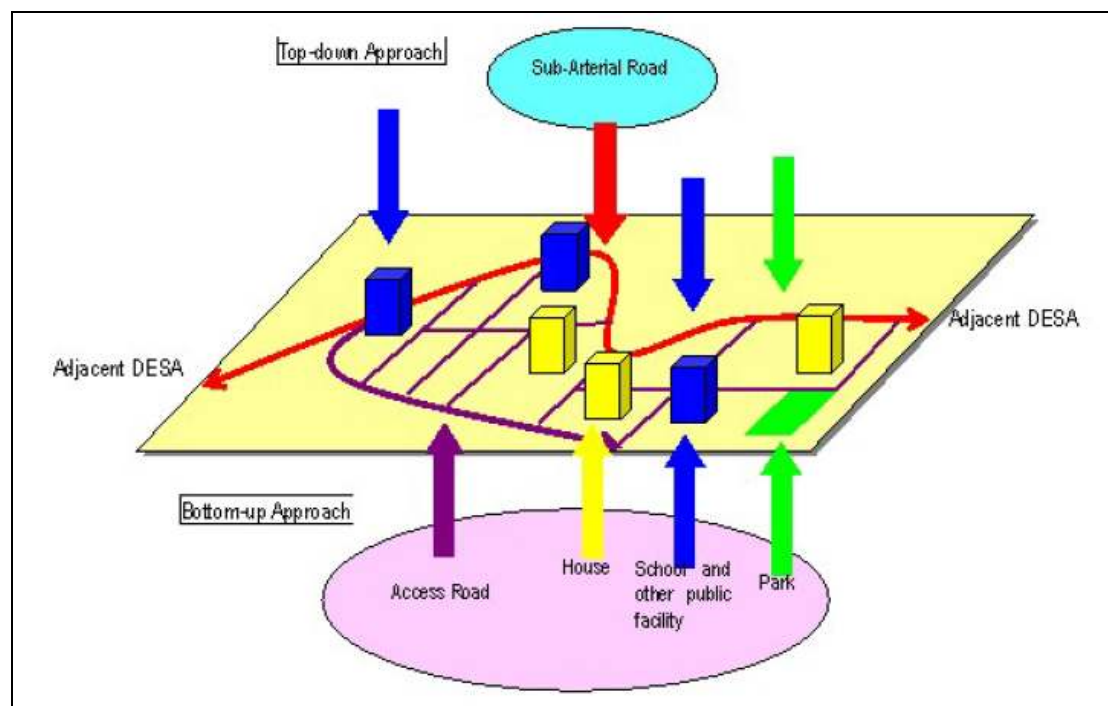
See Figure 6.17 for examples of participatory village plans.

According to BRR (2005d), there are more than 1.000 villages and urban parishes involved community driven development, which includes the village-based plan in it. There is no report yet up to one year after tsunami on how many villages have completed the village-based planning. There are only reports on number of villages where participatory village mapping has commenced and has been completed, which are 215 and 80 (BRR, 2005d).

6.2.2.2 General Approaches to Micro Planning of JICA

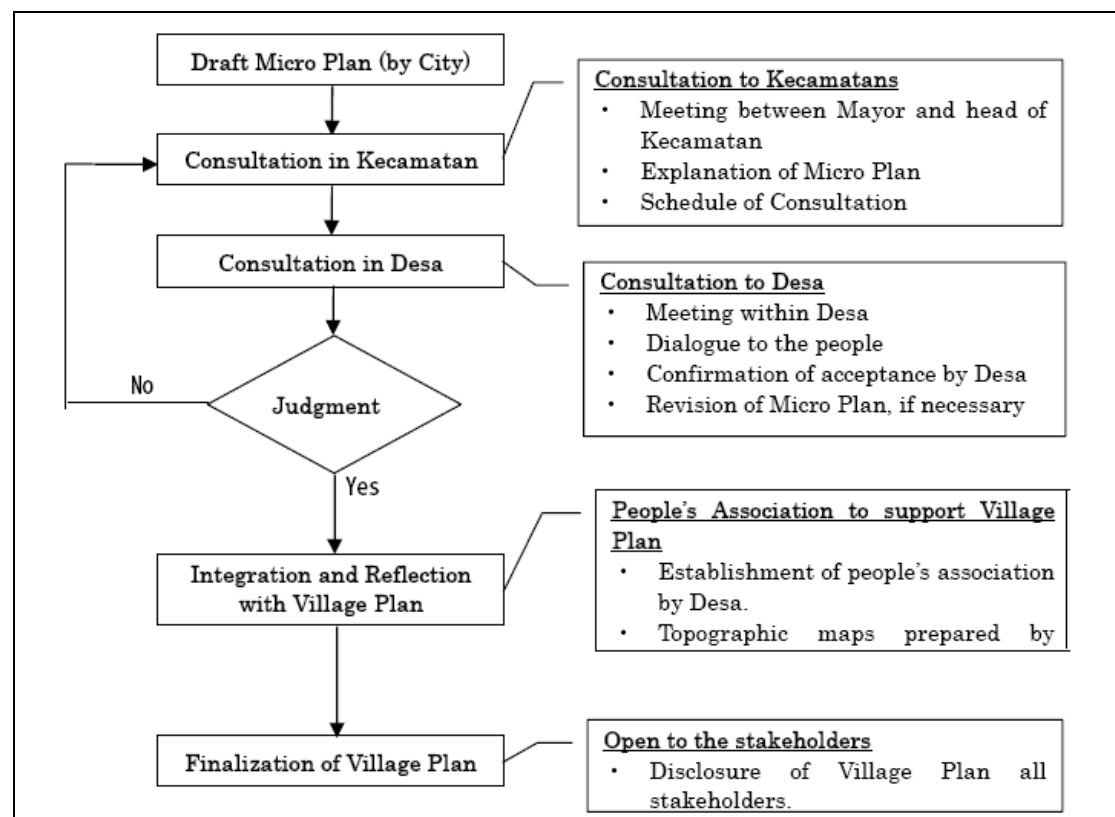
As it is mentioned earlier in Chapter 4.2.1.2, GoI has decided to adopt both top-down and bottom-up spatial planning approaches on rehabilitation and reconstruction of land administration in NAD and Nias. Unfortunately, there is no guidance yet at all on balancing the implementation of both spatial planning approaches. Therefore, JICA is proposing general approach to micro plan for Banda Aceh to guide the integration of both spatial planning approaches (JICA, 2005).

According to JICA (2005), two different spatial planning approaches for NAD and Nias will be assimilated and integrated in district level. See Figure 6.18 for assimilation of top-down and bottom-up spatial planning approaches, while Figure 6.19 describes the flow of micro planning.



Source: JICA Study Team

Fig. 6.11 Assimilation of top-down and Bottom-up Spatial Planning Approaches in rehabilitation and reconstruction of NAD and Nias



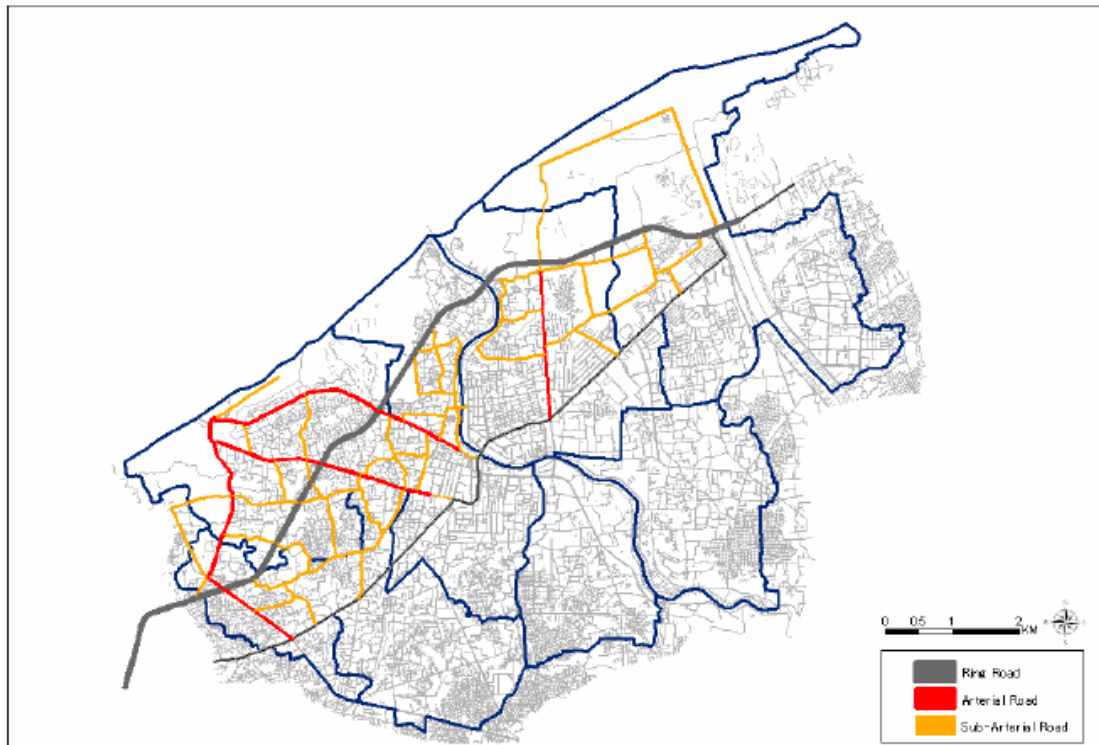
Source: JICA Study Team

Fig. 6.12 Micro planning flow on rehabilitation and reconstruction of NAD and Nias (JICA, 2005)

In order to promote good guidance to village-based planning, it is essential to establish basic framework for micro plan by the local government units (JICA, 2005). According to JICA (2005), there are four basic frameworks that are necessary, which are road network plan, population allocation plan, land use plan and new residential area plan. JICA explains the importance of above mentioned basic frameworks as follows (2005):

1. Framework 1: Arterial and sub-arterial road network plan

According to JICA (2005), insufficient information on alignment of arterial and sub-arterial road, as well as other roads, which transverse the village has become an impediment on creating village plan. Having learned from the December 26 catastrophe, the density of road will be increased as the road network will be aligned at an interval of 1.000 m for arterial road and 500 m for sub-arterial road (JICA, 2005). See Figure 6.13 for details.



Source: JICA Study Team

Fig. 6.13 Preliminary road network for establishing village-based plan

2. Framework 2: Population distribution plan

In the explanation of the importance of this framework, JICA took three districts, which are Jaya Baru, Kuta Raja and Meuraxa, as examples (2005). These districts experienced the most severely damage among other districts in Banda Aceh.

3. Framework 3: Land use plan

Whilst Jaya Baru, Kuta Raja and Meuraxa are the most affected districts in Banda Aceh, JICA also took above mentioned districts as examples on land use plan (2005). Since housing and commercial activities frames are considered as the most important frames within land use plan framework, therefore JICA divided the explanation based on housing and commercial activities frames.

a. Housing frame:

In the case of Banda Aceh and particularly districts taken as examples, there has been a crucial change in the number of population. Therefore, land use plan should consider factors as follows:

- Maintain the land registry data even if the landowner has died;
- On-going village-based mapping;
- Ensure the accomplishment of village-based plan. On the other hand, the village-based plan should ensure that the village could absorb the projected population in the future.

b. Commercial activities frame:

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According to JICA (2005), it is presumed that the number of shop before disaster is proportional to pre-disaster population. See Figure 6.14 for locations of commercial building, while Table 6.7 describes the population and shop proportion in 2002 and expected number of population and shop in 2009.



Source: JICA (2005)

Fig. 6.14 Number of shops in 2002

Tab. 6.7 Estimation of number of shop in 2009

District	Population in 2002	Number of shop in 2002	Expected population in 2009	Expected number of shop in 2009
Meuraxa	30,158	622	5,682	117
Jaya Baru	21,133	479	11,416	259
Kuta Raja	18,503	294	6,790	108
Total	69,794	1,395	23,888	484

Source: JICA Study Team

4. Framework 4: New residential area plan

As it is mentioned earlier in Chapter 6.2.1, Banda Aceh urban area will be expanded southward. Therefore, there is a need to identify the capacity of southern part of Banda Aceh. See Table 6.8 for estimation on capacity of urban areas, which are developed based on area-wise residential area development (Plans A to C) and along arterial road (Plan D). See Figure 6.15 as well for the samples locations of residential areas development. The estimation of capacity of urban area in samples locations is based on an assumption that the smallest unit of

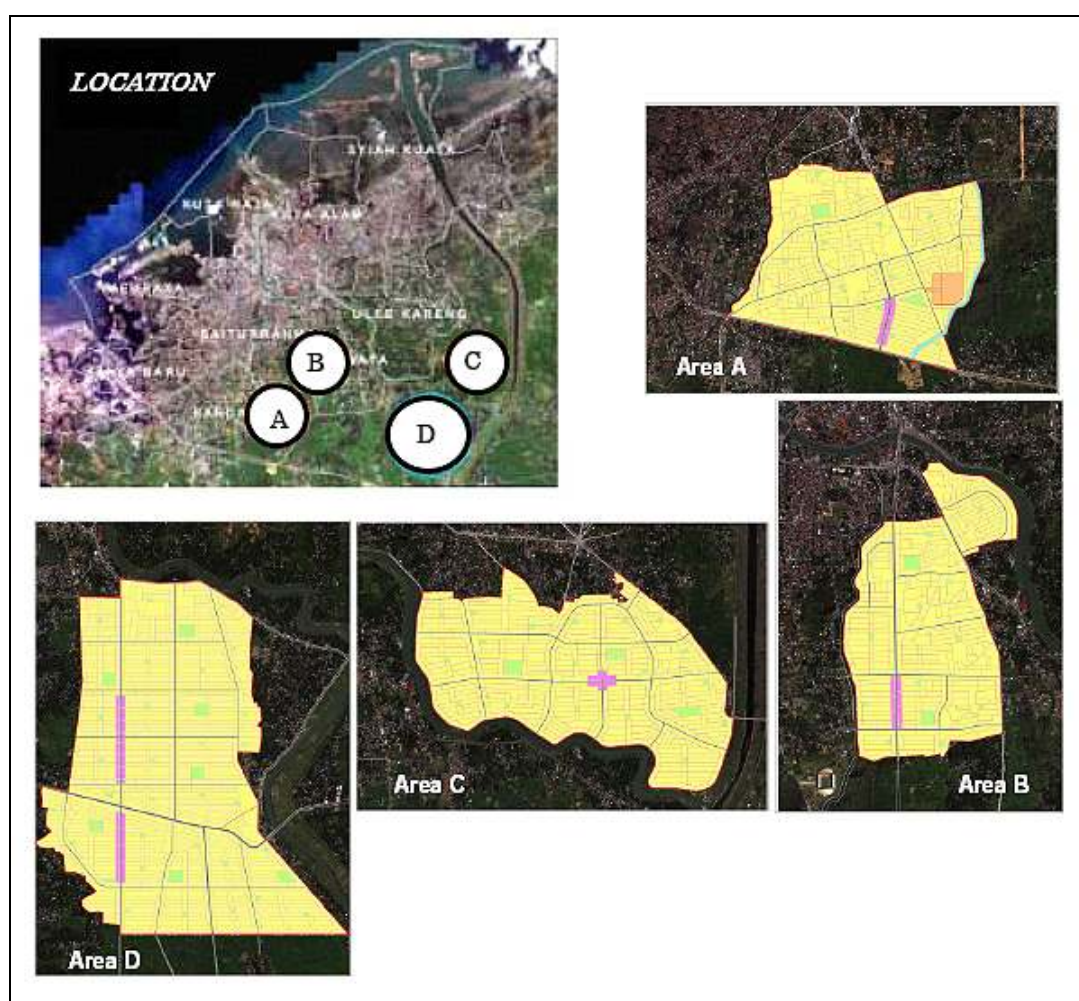
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residential area is 250 m² per household, while public area is assumed to be 2.5 times of the net residential area (Bappenas, 2005a).

Tab. 6.8 Samples of new residential areas capacity in southern part of Banda Aceh

Area	Required Area (ha)	Existing Residential Area (ha)
A	343	110
B	343	110
C	419	140
Sub-total (A+B+C)	1,105	360
D	821	90
Total	1,926	450

Source: JICA Study Team



Source: JICA Study Team

Fig. 6.15 Samples locations of residential areas development

In order to implement the micro plan, there are three identified issues concerning the assimilation of micro plan and top-down spatial planning approach, which are alignment of the arterial road, location of public facilities and land consolidation (JICA, 2005). Therefore, JICA performs researches on assimilation of top-down and bottom-up spatial planning approaches in samples locations in order to find the best

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solutions for above mentioned issues. According to JICA (2005), issues and their solutions to proceed with village-based planning are as follows:

1. Alignment of arterial road: How to negotiate the village development with arterial road alignment

- a. Sample Area

Two villages, namely Lambaro Skep and Tibang in District of Syiah Kuala of Banda Aceh, have been taken as examples on how to negotiate the village development with arterial road alignment. In the case that the preliminary aligned coastal road is constructed, the road would transverse through the centre of the area. The samples areas are situated in the administrative boundary between District of Syiah Kuala and Kuta Alam. None of resident lives in Tibang by June 2005. However, the mosque of the village has been reconstructed. On June 2005, none of resident lives in Lambaro Skep as well. See Table 6.9 for the enumerated population of Lambaro Skep and Tibang.

Tab. 6.9 Population projection of Lambaro Skep and Tibang

Village	Pre-disaster (A)	Post-disaster	2009 Projection (B) (A/B)
Lambaro Skep	4,234	2,334	2,700 (63.8%)
Tibang	1,397	850	1,256 (89.9%)

Source: JICA Study Team

- b. Land use before and after disaster

See Figure 6.16 for land use of Lambaro Skep before and after disaster, while Figure 6.17 displays the land use of Tibang before and after disaster.



(a) Pre-disaster

(b) Post-disaster

Fig. 6.16 Land use of Lambaro Skep (JICA, 2005)



(a) Pre-disaster

(b) Post-disaster

Fig. 6.17 Land use of Tibang (JICA, 2005)

c. On-going activities

Even though, at the time that survey by JICA performed, none of the inhabitant of Tibang lives there, village mapping and planning are progressing (JICA, 2005). According to JICA (2005), the village plan of Tibang so far has included arterial road on the coastal side. However, the accuracy of village map is doubted. See Figure 6.18 for details. Construction of 10 new houses is progressing in Tibang. Residents are gradually returning to their original land and tend to increase day by day. In the case of Lambaro Skep, JICA could not collect data at all since there was no trace of the residents at all.



Source: JICA Study Team

Fig. 6.18 Village map of Tibang

d. Public opinion

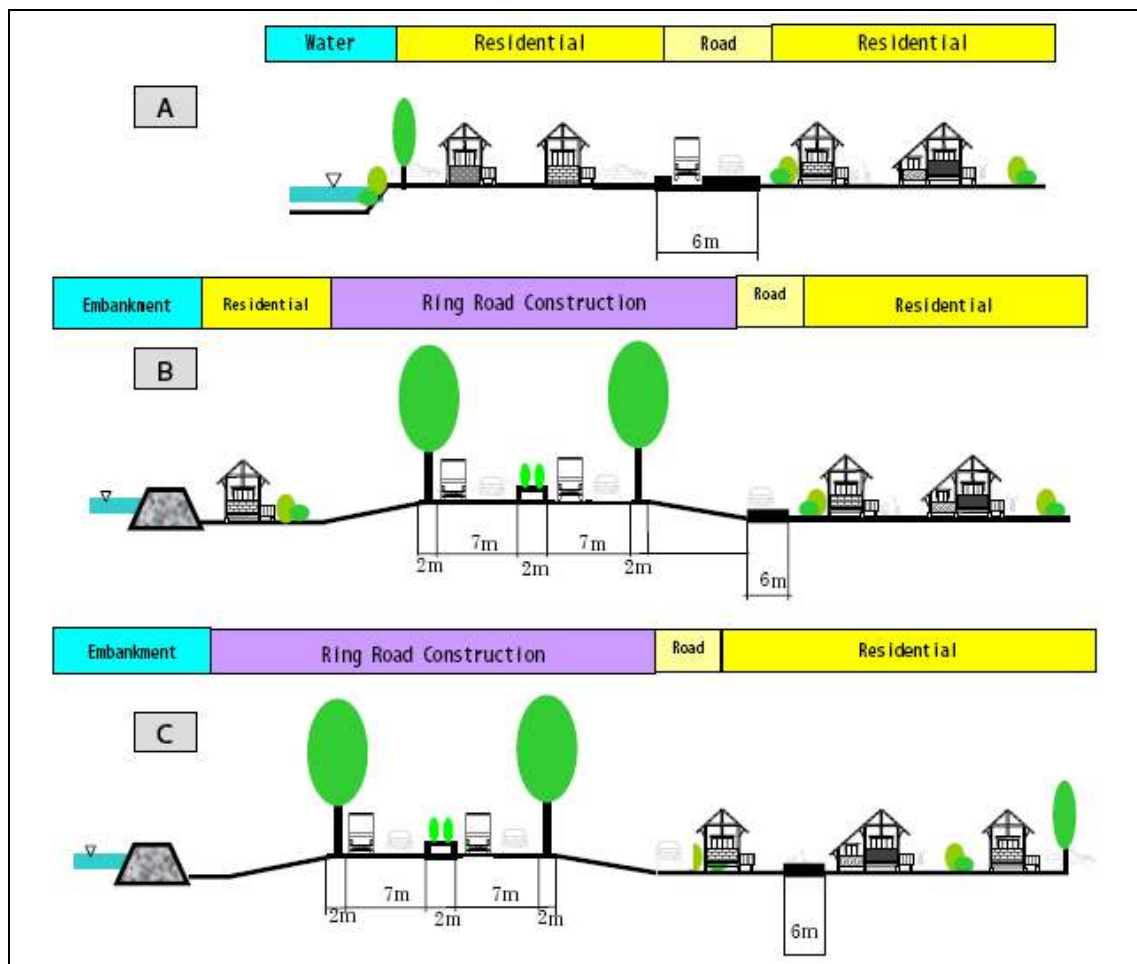
According to JICA (2005), the residents are aware of plan of ring road transverse their village and shows no objection for such plan. The residents expect that such plan would contribute to their livelihoods and village's economic encouragement.

e. Village plan case study

Having taken Tibang as the case study of issue on alignment of arterial road, JICA has prepared three most possible alternatives to be applied in Tibang. Above mentioned alternatives are as follows (JICA, 2005):

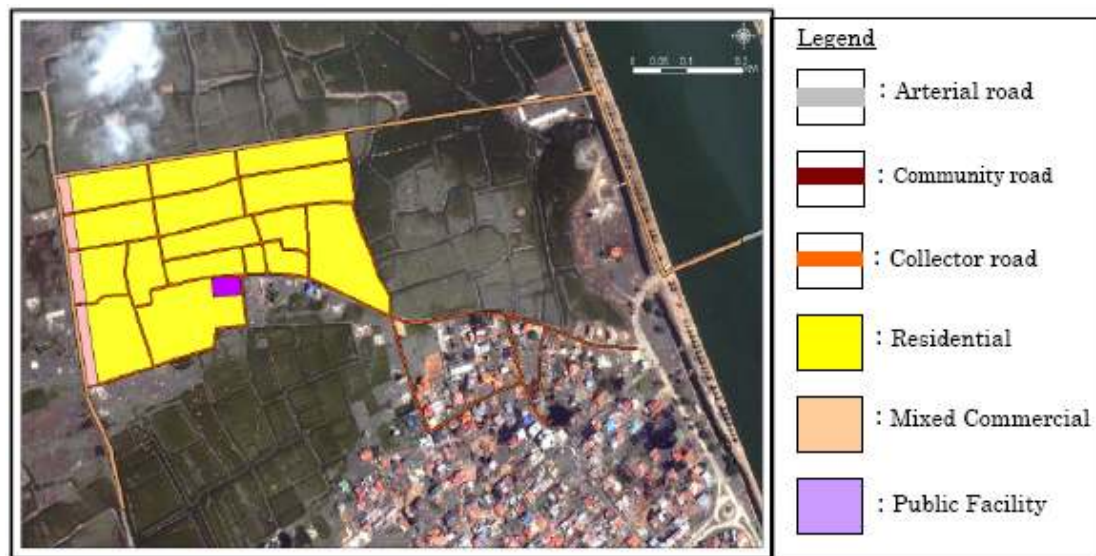
- Plan A: Original state and same pattern as before disaster
- Plan B: Align the proposed ring road in the centre of the village
- Plan C: Align the proposed ring road along the shoreline

See Figure 6.19 for schemas on each alternative of alignment of arterial road in Tibang. See also Figure 6.20 and Figure 6.21 for village plan of Tibang with and without arterial road transverse the village.



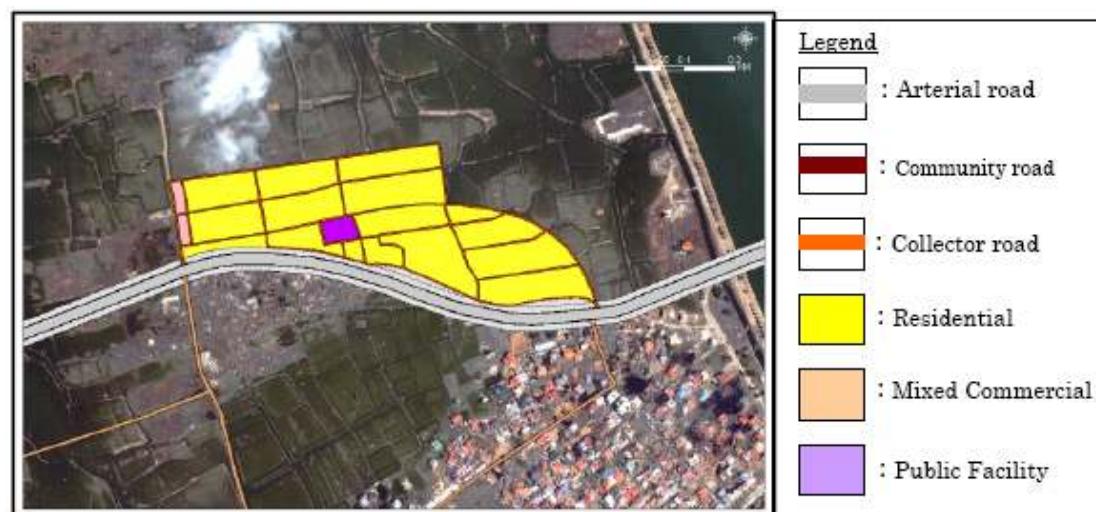
Source: JICA Study Team

Fig. 6.19 Schemas of alternatives of alignment of arterial road in Tibang



Source: JICA Study Team

Fig. 6.20 Village plan of Tibang without aligned arterial road transverses the village (JICA, 2005)



Source: JICA Study Team

Fig. 6.21 Village plan of Tibang with alignment of arterial road in the village (JICA, 2005)

It is important to have the Tibang resident opinion. However, JICA considers the Plan C is the most suitable plan for Tibang since Plan A and Plan B is not in conformity to the disaster preparedness-based plan to provide more evacuation road and build houses in the maximum-protected-area (JICA, 2005)

2. Location of public facilities: How to locate public facilities evenly and consistently for convenience of majority of people

- a. Sample area

Three villages in District of Meuraxa, namely Deah Glumpang, Deah Baro and Deah Teungoh, were selected for conducting case study of JICA on

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locating public facilities. According to JICA (2005), these villages are geographically located in the same area and experienced severely damages. See Figure 6.22 for the location of above mentioned villages, while Table 6.10 displays enumerated population of sample villages.



Source: JICA (2005)

Fig. 6.22 Location Deah Glumpang, Deah Baro and Deah Teungoh of District of Meuraxa (JICA, 2005)

Tab. 6.10 Population projection of Deah Glumpang, Deah Baro and Deah Teungoh

Village	Pre-disaster (A)	Post-disaster	2009 Projection (B) (A/B)
Deah Glumpang	1,172	334	325 (27.7%)
Deah Baro	1,010	202	203 (20.1%)
Deah Teungoh	1,492	219	221 (14.8%)

Source: JICA Study Team

b. Land use before and after disaster

According to JICA (2005), casualties in the sample villages reached 80% of pre-disaster population. The landscape has changed to a great extent since most of the area is inundated. JICA also predicts that it is hardly possible to restore the land resources and construct houses, infrastructure and public facilities without reclamation process.

c. On-going activities

On June 2005, the village mapping and planning has begun at Deah Glumpang while no such activities on-going at Deah Baro and Deah Teungoh (JICA, 2005). According to JICA (2005), construction of new houses has started in many locations at Deah Glumpang and inhabitants of Deah Glumpang have been gradually returned to their land.

d. Public opinion

According to JICA (2005), inhabitants of sample villages are depending on fisheries. Therefore, they insisted to reside in their original land as it was before the December 26 catastrophe happens. To compensate the possibility of earthquake and tsunami catastrophe in the future, the villagers are keen to

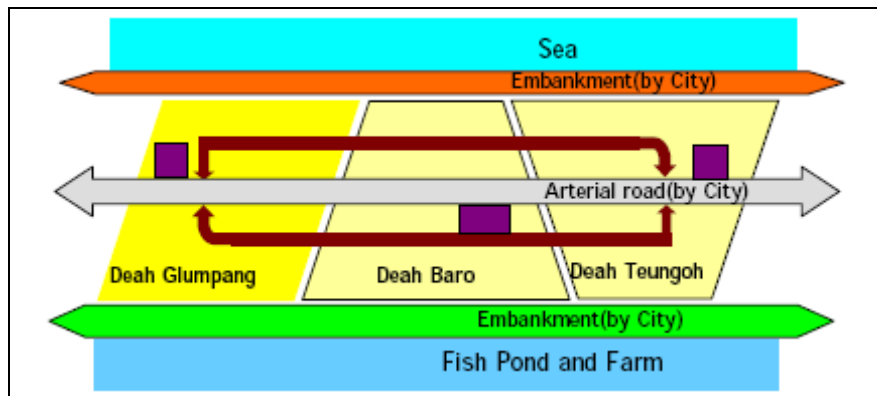
realise construction of seawall along the shoreline to guarantee their safety. Regarding the road alignment, there was no clear opinion yet on construction of road network (JICA, 2005).

e. Village plan case study

According to JICA (2005), it is important to set up the plan on alignment of the road network immediately since this will affect the villages' plans very much. Meanwhile, JICA proposes to align the road network and public facilities effectively and systematically by considering following factors (JICA, 2005):

- Convenience of sample villages;
- Enhancement of villagers' traditional economic activities;
- Safety against potential disaster;
- Access to other part of Banda Aceh;
- Inter-village road network and so forth.

See Figure 6.23 for schematic arrangement of road network for village planning.



Source: JICA (2005)

Fig. 6.23 Schematic arrangement of road alignment for village plan

The more detail plan that should be discussed among residents of sample villages is coordination and cooperation concerning issues as follows:

- Secure access to Ulee Lheu
- Align sub-arterial road to Blang Oi
- Restore agricultural land at southern part of sample area;
- Construct seawall;
- Utilise open space, especially at closed-down primary school, as communal village office, as well as functioned as escape building on calamity;
- Allocate space to accommodate shops in a width of 20 to 25 m along the sub-arterial road;
- Install evacuation guide board and an external stair for the purpose of evacuation;
- Utilise major part of the land as residential area.

See Figure 6.24 for details of JICA proposal on alignment of road network and other public infrastructure.



Source: JICA Study Team

Fig. 6.24 Example of micro plan at District of Meuraxa

3. Land consolidation: How to negotiate the village development with land consolidation requirement

a. Sample area

Two villages in District of Meuraxa, namely Ulee Lheu, have been selected for this case study. See Table 6.11 for population projection of sample villages.

Tab. 6.11 Population Projection of Ulee Lheu and Gampong Pie

Village	Pre-disaster (A)	Post-disaster	2009 Projection (B) (A/B)
Ulee Lheu	4,154	781	796 (19.2%)
Gampang Pie	810	94	92 (11.4%)

Source: JICA Study Team

b. Land use before and after disaster

According to JICA (2005), casualties reached more than 80% of Ulee Lheu and Gampong Pie pre-disaster population. JICA also mentioned that the landscape of both sample villages has remarkably changed into desert-like landscape surrounded by sea (2005). All roads and houses were completely destroyed and submerged. See Figure 6.25 for comparison of land use before and after disaster.



Source: JICA (2005)

Fig. 6.25 Land use of Ulee Lheu and Gampong Pie before and after disaster

In Gampong Pie, two drainage channels are destroyed which caused inundation up to 30 to 40 cm on high tide, while it used to be only 10 cm before disaster (JICA, 2005). The raise of depth of inundation on high tide happens also because of land subsidence. According to JICA (2005), it is undeniable that reclamation/embankment is necessary to recover the residential area as required since a substantial portion of the land remains flooded.

c. On going activities

According to JICA (2005), constructions of houses have been started. Unfortunately, there is no actual action yet on village plan and no road alignment plan established yet.

d. Public opinion

Inhabitants of Ulee Lheu and Gampong Pie emphasis the needs on constructing of seawall and drainage gates for protecting their land (JICA, 2005). Even some land owners have started the embankment of their own parcel at their cost.

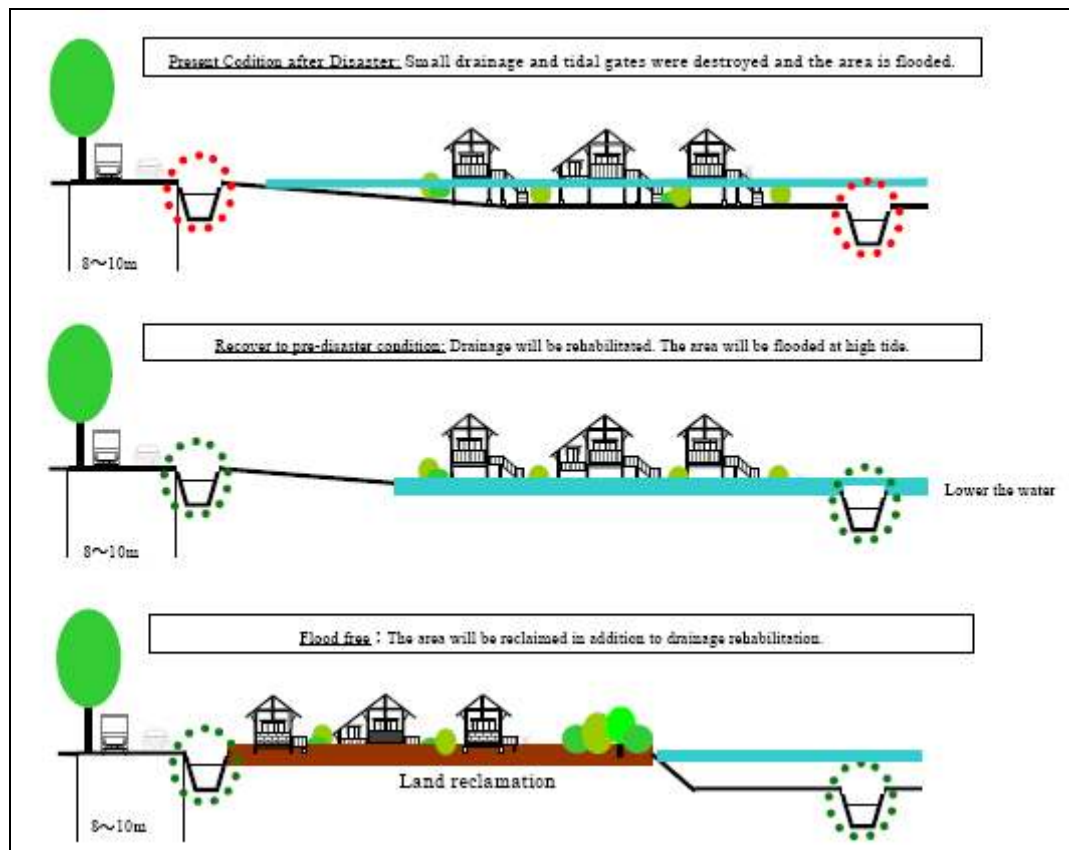
e. Village plan case study

According to JICA (2005), the preparation of micro plan covers Ulee Lheu and Gampong Pie should take into account following issues:

- Locating coastal forest along shoreline;
- Constructing primary school and administrative office of village at the same location as before disaster with additional external stairs to enhance the buildings into the escape building in emergency;
- Installing emergency guide board at adequate location;
- Recovering the submerged land by means of embankment for housing development;
- Locating arterial road in accordance to the city plan for evacuation and provide link to the city centre.

According to JICA (2005), it is not advisable to recover the village into the pre-disaster condition since the settlement area will still be flooded and

increase the possibility of outbreak of waterborne disease such as malaria. Therefore, it is recommended to raise the land level to pre-disaster level, even though it would still be a subject of inundation during high tide (JICA, 2005). See Figure 6.26 for alternatives on reconstruction of residential area.



Source: JICA Study Team

Fig. 6.26 Alternatives on reconstruction of residential area in Ulee Lheu and Gampong Pie

6.3 Intersectoral

Besides guidelines on rehabilitation and reconstruction of land tenure and land use system in NAD and Nias, BRR has also published intersectoral guidelines to fulfil its responsibilities, such as:

- Guidelines on resettlement at earthquake- and tsunami affected areas;
- Guidelines on housing rehabilitation and reconstruction entitlements for pre-tsunami renters.

However, these guidelines were still being reviewed up to one year after the December 26 catastrophe. It is also not clear yet whether these guidelines would be legalised.

PART IV ANALYSIS

This part of study report brings the evaluation of policy of GoI in rehabilitation and reconstruction of land administration in post-disaster areas in Banda Aceh. First of all, the land administration evaluation framework is formulated in Chapter 7, followed by the evaluation of policy of GoI in rehabilitation and reconstruction of land administration in post-disaster areas in Banda Aceh in Chapter 8.

7. EVALUATION OF REHABILITATION AND RECONSTRUCTION OF LAND ADMINISTRATION IN BANDA ACEH

In this chapter, the evaluation framework for assessing the policy of GoI on rehabilitation and reconstruction of land administration in post-disaster areas in Banda Aceh is formulated. This chapter is further structured as comprised of three sections, which are the implementation of land administration theories in post-disaster areas in Banda Aceh (Section 7.1), hierarchy of land administration in rehabilitation and reconstruction of Banda Aceh (Section 7.2) and evaluation framework of performance of land administration system in post-disaster areas in Banda Aceh (Section 7.3).

7.1 Implementing Land Administration Theories in Banda Aceh

The conventional land administration theory may be applied in the case of rehabilitation and reconstruction of land administration in Banda Aceh. This section therefore describes the arguments on applicability of land administration theory in the case of Banda Aceh.

As described in Section 4.2, Augustinus and Barry (2004) argue that the conventional hierarchy of land management and administration, particularly within the scope of cadastre, could not be applied in uncertain state since there is likely:

1. To be no credible land policy and/or land law in place;
2. That the majority of land dealings will often be outside of a legal framework or routine processes;
3. That the land administration will be in serious disarray.

In the case of Banda Aceh, the author however argues that the first argument of Augustinus and Barry (2004) may only be correct to some extent, while the second argument is nearly rejected. It is only the third argument of Augustinus and Barry (2004) that is considered mostly true. Firstly, the author argues that the Indonesian national land policy and/or land law still prevails in Banda Aceh. Based on the descriptions on Gol's policy in general and for Banda Aceh in Chapter 5, as well as the progress of land administration rehabilitation and reconstruction in Banda Aceh, the lack of experiences on correct implementation of land law and policy would be the only obstacles for utilising the conventional hierarchy of land management and administration in Banda Aceh. Besides, the recent efforts for reviewing the Indonesian national land law and policy are becoming evidences that the roots of land administration problem in Banda Aceh do not originate from the uncertain condition of Banda Aceh but the imperfectness of Indonesian national land law and policy as the author argues that land administration policy should comply with the actual situation in the territory in question.

Secondly, even though it is identified in the beginning of Section 1.1 that there practically exist "land mafias" (Fitzpatrick, 2005), the land owners in NAD realise that their land could probably be their only property left after the tsunami. The prohibition of transaction of rights to land in earthquake- and tsunami-affected areas in NAD before reaching the normal state of land administration as ordered by Master Plan of Rehabilitation and Reconstruction of NAD and Nias, as well as the deployment of Community Driven Adjudication that allows the community control over the ownership of the land, avoid the illegal and extra-legal transfers of rights to land.

Thirdly, even though the land administration in Banda Aceh is, unfortunately, disarrayed, the author argues that the disarrangement of land administration is originated from the inability of the local land administration offices to perform their authorised governmental tasks. However, the lack of performance of Indonesian land administration system contributes most to the disarrangement of land administration in Banda Aceh. For instance, the low rate of registered land, which is only 20% of the 300.000 affected parcels, as well as the fact that there is no back up at all of the land

registry data, have proven the inability of cadastral system in Indonesia to ensure the security of land title. The failure of spatial plan of Banda Aceh to mitigate the effect of earthquake and tsunami could also become evidence on lack of performance of land use authorities in Banda Aceh.

Augustinus and Barry (2004) further argue that the incapability of conventional framework to address the land administration problem in post conflict situation leads to the followings:

1. Focus on fixing the system but without considering the macro environmental factors when making decisions;
2. The modernisation of the system into a title system;
3. The inability to cope with the social changes in post conflict areas due to the awkwardness of conventional system, which expect the human behaviour to adapt to the technical design of the system;
4. The unorganised institutional aspect of land administration, particularly in cadastre, due to the “silo characteristic” of conventional approaches that is attempting to obtain optimal solutions for each silo without prompting the inter-silo solutions and the cooperation among the land administration actors in post conflict areas;
5. The modernisation of land administration system in isolation of the land policy that leads to unsustainability due to non-existence of the link between the cadastral system and land policy;
6. The conflict of interest among actors in each silo.

However, in the case of Banda Aceh, the author argues that all six problems, except the firstly mentioned problem, on implementing conventional theories in post conflict areas previously mentioned by Augustinus and Barry (2004) is considered as situated within the triangulation of land administration described in Figure 3.2. This argument leads to another argument that the land administration problem in post conflict areas is basically laid within the implementation level of land administration.

Albeit there is almost no evidence on the incapability of conventional spatial planning approach to address the problem in post conflict situations, the above counter arguments could confirm the possibility on utilising conventional land administration theories in the Banda Aceh situation. However, the appropriate argument of Augustinus and Barry (2004) in the case of Banda Aceh, which is the focus of conventional approach to fix the problem without compromising the macro environmental factors when making decisions, is still being considered as a weakness of conventional land administration system on its implementation in post-disaster areas.

Nevertheless, the conventional land administration approaches could not be applied completely in the post-disaster situations. The works on land administration in post conflict areas evidence the urgent matters that are immediately needed to be addressed. The author argues that those urgent matters shape the characteristic of land administration problem in post conflict areas as evidenced by the available works on land administration in post conflict areas depicted in the Chapter 4. Thus, the important parameters for ensuring the good performance of land administration

system in Banda Aceh could be subtracted from the characteristic of land administration system in earthquake- and tsunami-affected areas in Banda Aceh.

In order to utilise the conventional land administration approach in Banda Aceh, therefore there is a need to identify the characteristic of land administration problem in Banda Aceh. Based on descriptions in Chapter 4, 5 and 6, the author argues that the main problem of land administration system in post-disaster areas in Banda Aceh is the insecurity of rights to land and disarrangement of land use. Furthermore, the more detail of characteristic of land administration problem in post-disaster areas in Banda Aceh are as follows:

1. Legal problem:

- Lack of suitable land policy at national level, as well as large scale ambiguity and gaps in the regulatory framework;
- Limited prioritisation of land policy development that includes all stakeholders;
- The insecurity of land ownership due to the loss or destruction of land registry data by the December 26 catastrophe;

2. Technical problem:

- The loss or destruction of land registry data by the earthquake and tsunami;
- Large scale destruction of buildings within different level of damages in only two third of region of Banda Aceh, which lead to the needs for rapid redevelopment of houses, as well as setting up the housing redevelopment priority;
- The loss or destruction of land boundary markers, national geodetic networks and other associated documentations;
- Outdated land registry data;
- The existence of banished and contaminated land, as well as land subsidence, which leads to the needs to allocate the land and property, either temporarily or permanently, for the returnees and IDPs, as well as new city plan that allocates the spatial plan of damaged land, damaged areas and unharmed areas;
- The needs to address the disaster mitigation for planning the future policy and implementation of land administration system;

3. Institutional problem:

- The lack of professionals and surveying equipments, as well as other supporting tools;
- Inability of local governmental institutions to perform its tasks.

See Table 7.1 for the extent of the land administration problem in post-disaster areas in Banda Aceh.

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Based on above characteristic, the immediate actions concerning the rehabilitation and reconstruction of land administration system in post-disaster areas could be prepared.

Tab. 7.1 Extent of the land administration problem in post-disaster areas in Banda Aceh

Problem \ Components	Land Tenure	Land Use
1. Legal Problem		
- Lack of national suited land policy	X	X
- Limited prioritisation of land policy	X	X
- Insecurity of land ownership	X	
2. Technical Problem		
- Loss of land registry data	X	
- Large scale of buildings' destruction	X	X
- Destruction of markers and geodetic networks	X	
- Outdated land registry data	X	
- Banished and contaminated land	X	X
- Addressing disaster mitigation in spatial plan	X	X
3. Institutional Problem		
- Lack of professionals and equipment	X	X
- Broken local government	X	X

7.2 Hierarchy of Land Administration in Rehabilitation and Reconstruction of Banda Aceh

The author argues that hierarchy of land administration in rehabilitation and reconstruction of Banda Aceh is necessarily being identified. Previous section mentioned that conventional land administration approach could be employed in the post-disaster situation in Banda Aceh by considering immediate actions that should be instantly taken care of. However, the utilisation of the conventional approach in post conflict areas shown that the conventional approach-based solutions are lack of consideration on the requirements of systems in the higher level than land administration.

In the case of Indonesia in general and particularly Banda Aceh, the hierarchy of land administration is similarly structured as the conventional land administration hierarchy (see Section 5.1 for details). This is due to the theoretical interrelation among the components of Indonesian land administration. However, the practical interrelation among the components of Indonesian land administration could seldom be established since there have been intentions to work under “silo” circumstances as described by Augustinus and Barry (2004). Therefore, the identification of land administration hierarchy in the case of Banda Aceh is becoming more important in order to achieve the objectives of land administration and its components, as well as the system in higher level than land administration, particularly concerning the rehabilitation and reconstruction of land administration in Banda Aceh.

Furthermore, the arguments of Augustinus and Barry (2004) and Barry (1999), which the task system's sub-system will continually alter their position, could not be considered as applicable in the case of Banda Aceh. As argued in Section 7.1, the problem on utilisation of conventional approach in post conflict situations could be considered as lying within the implementation level of land administration in which represented by land administration triangle in land management hierarchy in Figure 3.2. In the case of the land administration policy do not comply the actual situation in Banda Aceh, this should be considered as the weakness of the policy to overcome every related problem in the system. Therefore, the author argues that the policies and regulations should be updated to fulfil the practical needs of land administration system.

7.3 Evaluation Framework of Land Administration in Banda Aceh

The evaluation framework of land administration in rehabilitation and reconstruction of Banda Aceh is basically compiled from a set of theories of land administration, both in stable and uncertain situation, by considering the constraints existed in post earthquake and tsunami areas in Banda Aceh. One of the most important constraints is the intention to acquire holistic and community-based solutions regarding the rehabilitation and reconstruction of NAD and Nias, particularly in Banda Aceh. This constraint is written in the Master Plan of Rehabilitation and Reconstruction of NAD and Nias.

The author argues that the framework used by Barry (1999) in his work for evaluating cadastral system in uncertain situation (see Section 4.2.1.3 for details) could be implemented in the case of rehabilitation and reconstruction of land administration in Banda Aceh. Firstly, soft system theory in the work of Barry (1999) is intending to provide a holistic and community-based point of view, particularly for evaluating cadastral system in uncertain situation. In the work of Barry (1999), the cadastral system in Xhosa-speaking areas in Cape Town is evaluated by the existing land tenure system and the system that is desired in the future, the effectiveness of land registration, as well as the effectiveness of existing tenure system to support objectives of land administration and land policy.

Secondly, due to the dualism, or even the existence of three different land tenure regime that are Indonesian, *hak ulayat* and Dutch Colonial Government land tenure regime, the author argues that the evaluation of existing land tenure system, as well as the wanted system by People of Aceh in the future, is urgently needed to be executed. This is based on argument that the security of rights to land is necessarily to be protected, while the existence of three different land tenure systems could surely not provide the security needed by the land owner. Regarding the land use regime, there is also existed dualism of land use regime in Banda Aceh, which is customary and national land use regime. It is therefore necessary to investigate whether the national land use regime is wanted in Banda Aceh. These arguments are in accordance with the first means of the work of Barry (1999) on evaluating *de facto* land tenure system in Xhosa-speaking areas in Cape Town.

Thirdly, the author argues that performance of sub-systems of land administration components in rehabilitation and reconstruction of Banda Aceh is needed to be

evaluated. This is due to the first experience of GoI in modern era on handling effects of such catastrophe, as well as disability of land administration policy and regulation for addressing its implementations in post-disaster areas in Banda Aceh. This argument is also consistent with the second means of evaluation of cadastral system in Xhosa-speaking areas by Barry (1999).

Fourthly, it is concluded in Section 7.1 that it is necessary to address the objectives of the system in the higher level than land administration. It is previously mentioned that one of means to evaluate cadastral system by soft system theory is the effectiveness of existing tenure system to support objectives of land administration and land policy (Barry, 1999). Thus, both above statements are supporting the implementation of soft system theory in Banda Aceh with different reference on the hierarchy of land management (see Section 7.2 for details).

Since this study applies different land management hierarchy, the modification of soft system theory is needed to evaluate land administration system in rehabilitation and reconstruction of Banda Aceh. The work of Barry (1999) was only taking care of the evaluation of land tenure system in Xhosa-speaking areas in Cape Town, while this study also focuses on the land use component in rehabilitation and reconstruction of Banda Aceh. Furthermore, even though land tenure and land use system are interrelated to each other under Indonesian land administration theory, the author argues that the evaluation of land tenure and land use system should be done separately. This is due to differences on each system's sub-system, as well as its principles and features. However, the author argues that the soft system approach is still relevant for evaluating land use system in rehabilitation and reconstruction of Banda Aceh. This is based on the intention of soft system approach to provide framework for evaluating a system that deals with the complex organisation of a number of different connected elements (Checkland, 1981; as cited in Barry, 1999), as well as four arguments previously mentioned in this section.

This section further describes the evaluation framework of land tenure regime (Section 7.3.1) and land use regime (Section 7.3.2).

7.3.1 Land Tenure Evaluation Framework

The land tenure evaluation framework concerning rehabilitation and reconstruction of Banda Aceh is comprised of evaluation of existing land tenure and desired system by citizens of Banda Aceh in the future, evaluation of land registration system and evaluation whether the land tenure system in Banda Aceh has fulfilled the objectives of system on the higher level than land tenure system, particularly on rehabilitation and reconstruction of Banda Aceh.

The first evaluation framework focuses on evaluation of implementation of Indonesian land tenure regime, which is *de jure* (and *de facto* in most of urban areas) land tenure regime, is wanted by citizens of Banda Aceh. This framework is also used to investigate whether the Indonesian land tenure regime is wanted in the future. It has been identified in Chapter 2 and 5 that there existed two land tenure regimes in Banda Aceh, which are *hak ulayat* and Indonesian land tenure regime.

The second evaluation framework focuses on the effectiveness of land registration system in rehabilitation and reconstruction of Banda Aceh. This framework evaluates the land registration system from the effectiveness of its sub-systems' performance in rehabilitation and reconstruction of land administration in Banda Aceh. The evaluation of performance of land registration sub-systems in Banda Aceh is performed with special reference to the fulfilment of features of land registration, both in general and in the case of Indonesia and rehabilitation and reconstruction of land administration in Banda Aceh. This is due to the argument of Zevenbergen (2002) that the features of land registration system are critical factor in measuring effectiveness of land administration system, particularly land registration system. The land registration system itself is theoretically comprised of registration system, adjudication, boundary definition, dispute resolution and surveying and mapping system. The features of land registration in Indonesia are simplicity, security, affordability, currency and openness. Additionally, sustainability feature from FIG's Statement on Cadastre is also employed to assess the effectiveness of land registration system to ensure the appropriateness of organisational and management arrangements, the procedures and technologies and the required educational and professional levels for the particular jurisdiction (FIG, 1995).

The third evaluation framework evaluates the fulfilment of the objectives of systems higher than land tenure system. The systems than land tenure system could be derived from the hierarchy of land management used in this study (see Figure 3.2 for details). However, as argued in the beginning of Section 7.3, the evaluation of land tenure system should be separately done with evaluation of other components of land administration. The derivation of land management hierarchy for the purpose of evaluation of the fulfilment of the objectives of higher systems than land tenure system is formulated (see Figure 7.1 for details). Based on Figure 7.1, land administration, and followed by land policy, are the systems that positioned at the higher level of land tenure system. Thus, this framework focuses on whether the land tenure could support land administration and land policy achieve their objectives.

To evaluate the rehabilitation and reconstruction of land administration in Banda Aceh, it is therefore needed to identify the objective of land administration and land policy. The author argues that the resolutions of land administration problem in post-disaster areas in Banda Aceh, which is mentioned in Section 7.1, is itself becoming the objectives of land administration and land policy in the case of Banda Aceh.

Furthermore, the effectiveness of land tenure system on supporting land administration system in post-earthquake and –tsunami areas in Banda Aceh could be assessed from the fulfilment of land tenure-related directives mentioned in Master Plan of Rehabilitation and Reconstruction of NAD and Nias by the land tenure system. As mentioned in Section 5.2.1, there are 16 directives on commencing rehabilitation and reconstruction of land administration in post-earthquake and –tsunami areas (See further in Bappenas, 2005a). For evaluating the effectiveness of land tenure system in rehabilitation and reconstruction of land administration in Banda Aceh, the land tenure-related directives are as follows (Bappenas, 2005a):

1. Providing settlement choices for the residents;

Part IV: Analysis

Chapter 7: Evaluation of Rehabilitation and Reconstruction of Land Administration in Banda Aceh

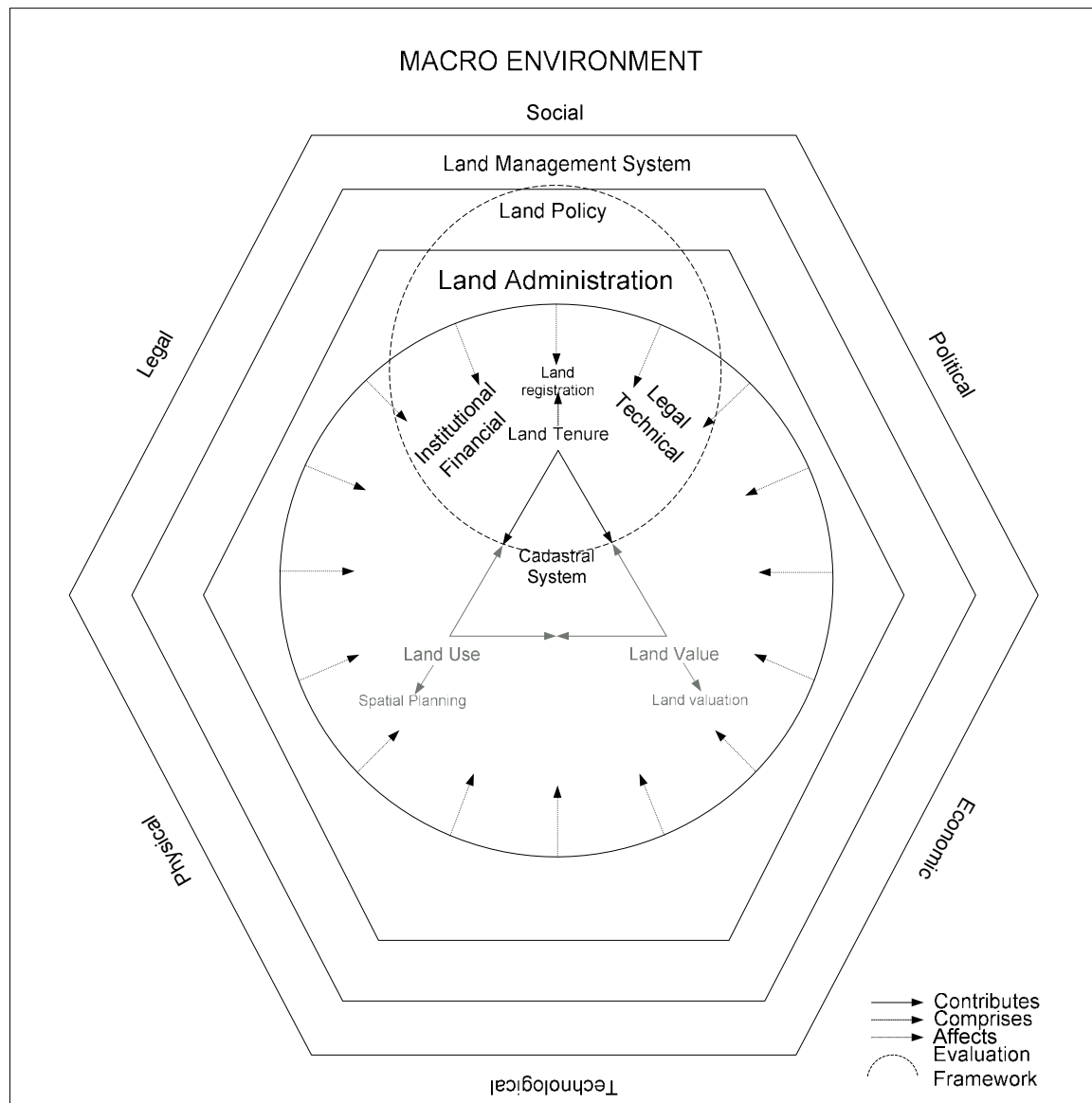
2. Engaging public participation and utilise the social institution to address disaster and development activities;
3. Highlighting cultural and religious characteristics;
4. Creating anticipation for disaster;
5. Restoring local government's role;
6. Protecting citizens' civil right;
7. Accelerating the land registration process;
8. Providing fair and affordable land compensation;
9. Restoring public institution on environment and natural resources;
10. Reconstruction disaster-affected cities into their initial state of order.

See Table 7.2 for the extent of the land administration directives in post-disaster areas in Banda Aceh.

Tab. 7.2 Extent of the land administration directives in post-disaster areas in Banda Aceh

Directives	Components	Land Tenure	Land Use
1. Better livelihood and disaster resistance areas			X
2. Settlement choices for the citizens		X	X
3. Public participation for addressing development		X	X
4. Cultural and religious characteristic		X	X
5. Participatory spatial planning			X
6. Disaster mitigation and anticipation for disaster		X	X
7. Combination of top-down and bottom-up appr.			X
8. Restoring local governments' role		X	X
9. Protecting citizens' civil rights		X	
10. Accelerating land registration process		X	
11. Providing fair and affordable land compensation		X	
12. Revitalise economy based on local natural resources			X
13. Carrying capacity and anticipation of disaster			X
14. Public institution on environmental & natural res.		X	X
15. Restoring spatial structure of NAD and Nias			X
16. Reconstructing disaster-affected cities		X	X

On the other hand, the effectiveness of land tenure system applied in post-disaster areas could be assessed by considering GoI's land policy declared in Article 33.3 of Constitution of Republic of Indonesia and Resolution of Parliament of Republic of Indonesia No. IX year 2001 concerning Agrarian Reform and Natural Resources Management that leads to sustainable development.



Adopted from Dale and McLaughlin (1999), Barry (1999) and Enemark (2005)

Fig. 7.1 Land tenure system evaluation framework

7.3.2 Land Use Evaluation Framework

In this study, the soft system theory-based land use evaluation framework is comprised of evaluation of effectiveness of existing land use system in Banda Aceh and the desired system by citizens of Banda Aceh in the future, evaluation of effectiveness of spatial planning in rehabilitation and reconstruction of Banda Aceh and whether the land use system in rehabilitation and reconstruction of Banda Aceh fulfils the objectives of the higher level systems.

The first evaluation framework measures whether the Indonesian land use system is wanted and desired in the future by citizens of Banda Aceh. This evaluation is necessarily to be performed due to the existence of dualism of land use system in Banda Aceh. As identified in Chapter 2, even though Banda Aceh is the most urbanised city in NAD, there is still existed communal system of spatial planning in

some part of Banda Aceh particularly in outskirt of Banda Aceh. However, due to the sanction of national land use policy, the Indonesian land use system is *de jure* regime that is applied in Banda Aceh.

The second evaluation framework assesses the effectiveness of spatial planning in rehabilitation and reconstruction of Banda Aceh. This framework adopts the argument of Larsson (1997) that the successfulness of spatial planning could be evaluated by evaluating the realism, up-dating, binding power and participation/consultation of spatial planning. Larsson (1997) also argues that the spatial planning could not be separated from its implementation. This framework therefore also employs the features of spatial planning implementation for evaluating the spatial planning in rehabilitation and reconstruction of Banda Aceh. The features of spatial planning implementation are institutional connection to planning-implementation, unambiguous division of responsibility, power of relevant institutions, decentralisation, financial base and personal resources (Larsson, 1997).

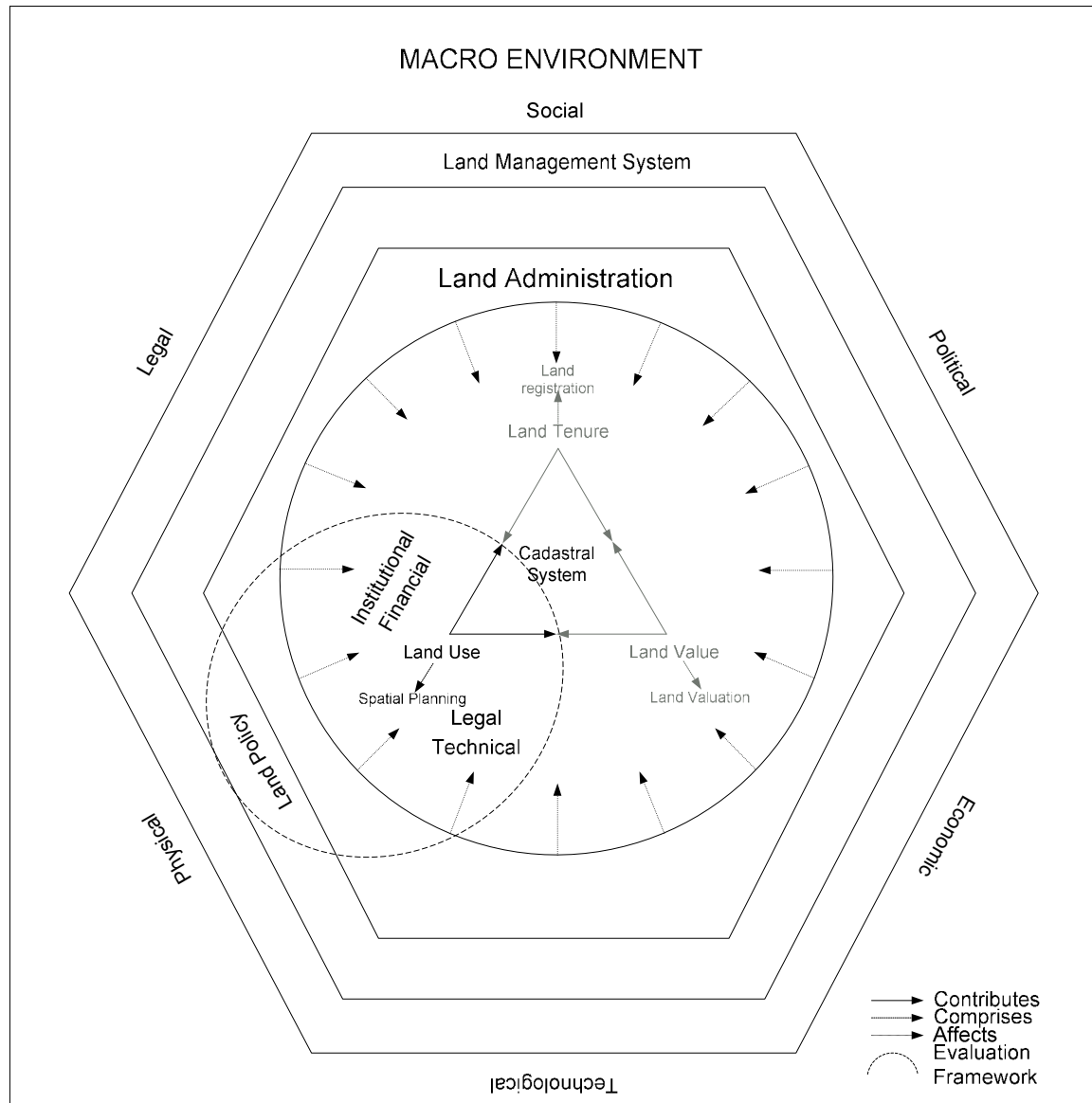
The third evaluation framework is intending to evaluate the effectiveness of land use regime to support the objectives of higher level systems. As applied in the third evaluation framework of land tenure system, the hierarchy of land management described by Figure 3.2 is employed to identify the higher level system of land tenure system. See Figure 7.2 for the details of land use system evaluation framework of this study.

Based on the land use system evaluation framework of this study, land administration and policy are identified as the higher level system of land use system. Therefore, the third evaluation framework assesses the effectiveness of land use system for supporting the land administration and land policy.

As identified in Section 7.3.1, the land administration policy in rehabilitation and reconstruction of Banda Aceh is clarified by 16 directives of rehabilitation and reconstruction of land administration in NAD and Nias (Bappenas, 2005a). Some directives are relevant in rehabilitation and reconstruction of land administration in Banda Aceh within the scope of land use system evaluation framework. Those directives are:

1. Creating areas that are safe from disaster and better livelihood;
2. Providing settlement choices for the residents;
3. Engaging public participation and utilise the social institution to address disaster and development activities;
4. Highlighting cultural and religious characteristics;
5. Initiating participatory spatial planning;
6. Creating disaster mitigation and anticipation for disaster;
7. Combining top-down and bottom-up spatial planning approach;
8. Restoring local government's role;
9. Revitalising economic activities based on local natural resources;
10. Restoring capacity and anticipation of natural disaster;
11. Restoring public institution on environmental and natural resources;
12. Restoring and rehabilitating spatial structure of NAD and Nias;
13. Reconstructing disaster-affected cities into their initial state of order.

Furthermore, land use policy could be found in Article 33.3 of Constitution of Republic of Indonesia, as well as Resolution of Parliament of Republic of Indonesia No. IX year 2001 concerning Agrarian Reform and Natural Resources Management, particularly on investigating the renewal of land tenure regulations.



Adopted from Dale and McLaughlin (1999), Barry (1999) and Enemark (2005)

Fig. 7.2 Land use system evaluation framework

8. EVALUATION OF REHABILITATION AND RECONSTRUCTION OF LAND ADMINISTRATION IN BANDA ACEH

The evaluation of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh is described in this chapter. The evaluation framework formulated in Chapter 7 is used for evaluating performance of land administration system in post-disaster areas in Banda Aceh. This chapter is further divided into two sections, which are evaluation of GoI's policy on rehabilitation and reconstruction of land tenure system in Banda Aceh (Section 8.1), as well as the evaluation of GoI's policy on rehabilitation and reconstruction of land use system in post-disaster areas in Banda Aceh (Section 8.2).

8.1 Evaluation of Rehabilitation and Reconstruction of Land Tenure System in Banda Aceh

In this section, the land tenure system in the scope of the rehabilitation and reconstruction of Banda Aceh is evaluated using the framework described in Section 7.3.1. This section further is divided based on three evaluation framework of land tenure system, which are evaluation of effectiveness of land tenure system (Section 8.1.1), evaluation of effectiveness of land registration system (Section 8.1.2) and evaluation of effectiveness of land tenure system to support objectives of the higher system of land tenure system (Section 8.1.3) in rehabilitation and reconstruction of Banda Aceh.

8.1.1 Land Tenure System

Chapter 2 reveals the existence of *hak ulayat* in Banda Aceh. On the other hand, the valid land tenure system in Banda Aceh is Indonesian land tenure system. Basically, citizens of Banda Aceh, who used to live in the disaster-affected areas, do not really take into account the fact on dualism of land tenure regime as a big matter in the scope of rehabilitation and reconstruction of Banda Aceh. This is due to the desires of most of Banda Aceh citizens to move further with their lives by firstly securing their only asset left, which is land (Chairumansyah, 2005). Furthermore, Chairumansya (2005) also reveals that it will take three years to resolve every land problem in NAD.

In the implementation level, the community driven adjudication (CDA) concept is realised by the participatory land mapping programme under RALAS project. The author argues that the CDA concept could provide the tenures' security for earthquake and tsunami survivors in Banda Aceh. This is due to the on-going registration of land tenures, even for the unregistered land tenure before the December 26 catastrophe.

However, the slow progress of CDA due to the lack of BPN and land registry officers leads to the uncertainty of land tenures of citizens of Banda Aceh. Herryani *et al* (2005) reveals that there are at least 300,000 parcels in disaster-affected areas that should be registered. From the amount of affected parcels, approximately 50,000 to 80,000 parcels have completed the land mapping, while 30,000 parcels are in the process of notification (BRR and the International Partner, 2006). Furthermore, it is estimated that only 5,000 parcels have been titled at the end of 2005.

Unfortunately, the land tenure system in Banda Aceh, particularly regarding the Indonesian land tenure regime, has been criticised as not representing the cultural background of Acehnese (Juned pers. com. 2005⁶). The *hak ulayat* is still considerably relevant on achieving sustainability in the modern era. The main concern of the critic is that the personalisation of land tenure will lead to the diminishing of *hak ulayat* in Banda Aceh, particularly *hak ulayat gampong* (*hak ulayat* of a village). *Hak ulayat gampong* has been functioning as the public space, both for economic and cultural activities, as well as land reserves at the village in

⁶ Interview with Professor Tengku Daniel Juned, Professor of Law, Faculty of Law, University of Syiah Kuala, Banda Aceh, Indonesia, on November 16, 2005

question. Furthermore, Juned (pers. com. 2005) also argues that the diminishing of *hak ulayat* in Banda Aceh will lead to unsustainable land tenure system.

Even though the Master Plan of Rehabilitation and Reconstruction of NAD and Nias, as well as other regulations (and draft of regulations), have tried to accommodate the culture and *hak ulayat* of NAD on them, Juned (pers. com. 2005) identifies several problem of rehabilitation and reconstruction of land tenure system in NAD, which are not in accordance with the *hak ulayat* in NAD in general. Those problems are as follows:

- The prohibition of alienation of land could impede the land market to be functioned properly. However, before the titling process is completed, the alienation of land is considered as reluctant to dispute;
- The employment of *Baitul Maal* as a legal institution, which could be granted rights to land, has not been regulated by any law and regulation regarding the promulgation of the *Syariah* (Islamic Law) in NAD;
- The abolition of rights to land in the case of banished land, particularly the submerged land. Juned (pers. com. 2005) argues that the submerged land could be functioned as, for instance, the fishponds. However, in the case of submerged land in settlement areas, the draft of resettlement guidelines of BRR provides many options of resettlement of owner of submerged land. In the case of conversion of the function of the submerged land to the fishpond, this has already been regulated by UUPA in the form of right to use water.

Furthermore, the inheritance problem concerning the land whose owner has passed away could also become source of disputes. Draft of Perpu concerning the Cadastral Reconstruction in NAD describes that the *Mahkamah Syariah* (Islamic Court of Law) is authorised to make resolutions on inheritance of the land whose owner is Moslem, while the inheritance of non-Moslem citizen would be taken care of by local court. However, as the *Syariah* has been put into effect in NAD, the *Syariah* on inheritance in Moslems' family could be employed and legalised. In Al Qur'an, verse 7-12 of Surah An Nisaa' describes the *Syariah* on inheritance in great details, while verse 180 of Surah Al-Baqarah explains the *Syariah* on testament in Moslems' family.

In conclusion, the land tenure system employed in the rehabilitation and reconstruction of Banda Aceh is considered as sufficiently accommodating the desire of citizens of Banda Aceh for securing their land. The slow progress of land titling process is considerable due to the mass destruction by earthquake and tsunami. Furthermore, it is concluded that the land tenure system in the future should be able to accommodate the *hak ulayat* in Banda Aceh since *hak ulayat*, if it is legalised, could provide the security of land tenures, as well as lead to sustainability. By adopting *hak ulayat* on the land tenure system in Banda Aceh, the author argues that the frictions between the *hak ulayat* and Indonesian land tenure regime could be avoided.

8.1.2 Land Registration

This section evaluates the effectiveness of land registration system to provide land tenure security by highlighting the land registration sub-system in the scope of

rehabilitation and reconstruction of Banda Aceh. The evaluation of effectiveness of land registration system is performed with special references to the fulfilment of features of land registration, both in general, as well as in the case of Indonesia and rehabilitation and reconstruction of land administration in Banda Aceh.

Section 3.2.1.2 identifies the sub-system of land registration as comprised of the registration system, adjudication, boundary definition, dispute resolution and surveying and mapping system. There is almost no objection from citizens of Banda Aceh regarding the registration system in Indonesia in general and particularly in Banda Aceh, which adopts German/Swiss title registration system. This is due to the intention of the citizens of Banda Aceh for securing their rights to land. The citizens of Banda Aceh therefore should adhere to the valid land registration regulations in Indonesia.

The systematic adjudication has been employed under the participatory land mapping scheme in the rehabilitation and reconstruction of land administration in Banda Aceh. This is due to the destroyed buildings, land boundary markers, national geodetic networks and other associated documentations in post-disaster areas in Banda Aceh. The sporadic adjudication thus could not be employed in post-disaster areas in Banda Aceh. Consequently, due to the vast disaster-affected areas and lack of land registry professionals, the slow performance of land registration in post-disaster areas in Banda Aceh has been criticised by community and religious leaders of citizens of Banda Aceh. However, the author argues that land registry offices have been working effective and efficiently in such circumstances. This is based on the fact that land mapping of 50,000-80,000 parcels has been completed, while 30,000 parcels out of 50,000-80,000 were awaiting the end of public notification period. Even though it is estimated that at the end of year 2005 there were only 5,000 titled land in NAD, at least another 25,000 parcels have been waiting the granting of the title.

Another critic has been addressed to the BPN and local land registry offices, which have rejected the result of participatory land mapping in several areas due to the absence of competent officers on the performance of participatory land mapping. However, as BPN and local land registry offices are liable to register the physical and abstract nature of the land accurately, the liability of participatory land mapping, which includes defining the legal parcels' boundary, without involving liable officers could not be justified by BPN and local land registry offices. Thus, the parcels mapped by participatory land mapping in such case should and could not be registered.

In rehabilitation and reconstruction of land administration in Banda Aceh, the hierarchy of legal evidence in adjudication has gone beyond the hierarchy in stable condition, particularly concerning the participatory land mapping. In post-disaster areas in Banda Aceh, the minimum legal evidence of land tenure, which is the ratification by the community or its leader, has been applied. Under such circumstances, the employment of minimum legal evidence of land tenure has been considered as the only option in rehabilitation and reconstruction of land tenure system in post-disaster areas in Banda Aceh. However, there will be a need to address the hierarchy of legal evidence in the future since the employment of

minimum legal evidence could not be accepted and is considered as illegal action under normal circumstances.

For identifying the parcel boundary in post-disaster areas in Banda Aceh, the IKONOS images before the December 26 catastrophe has been used. This employment of IKONOS images has been considered as effectively supporting the identification of pre-disaster condition. The 1 metre spatial resolution of IKONOS images has assisted the communities to identify the parcels, its owners and its boundaries. By cooperating with capable and liable institutions on mapping, or at least involving facilitators that have been trained to assist the performance of participatory land mapping, the identified parcel boundaries is further physically marked. However, due to the lack of professionals, equipments and legal procedures, as well as liable officers, the result of some participatory land mapping could not be ratified by BPN and local land registry offices.

Basically, dispute resolution system in *hak ulayat* of people of Aceh is almost similar to the race statute, off course by not considering the registration of land tenures. This is due to the existence of *Hak Terdahulu* (Preliminary Right) and *Hak Langgih* (*Langgih* Right). The *Hak Terdahulu* manages the granting of land tenure to the first land occupant, as well as the liability of alienation of the land, while *Hak Langgih* offers the protection for the land occupant whose *Hak Terdahulu* has been breached by other party. Juned (pers. com. 2005) argues that *Hak Terdahulu* and *Hak Langgih* should be employed to resolve the land registration problem in post-disaster areas in Banda Aceh. However, the land registration problem in post-disaster areas in Banda Aceh is much more complicated than only giving the land back to the December 26 catastrophe's survivors. Fortunately, *Hak Terdahulu* and *Hak Langgih* have been employed within the identification of land, its owner and its tenure. The solutions of more complicated dispute resolution problem described in Section 6.1.1 have basically been drafted in the Perpu on Cadastral Reconstruction in NAD, as well as in Guidelines of Village Planning and Development. Unfortunately, the draft of Perpu on Cadastral Reconstruction itself, as well as other cadastral-related regulations, still need to be reviewed to address the solution of the unsolved matters described in Section 8.1.1. Furthermore, the cadastral and cadastral-related regulations need to be promulgated to ensure legal protection of land tenure of citizens of Banda Aceh in post-disaster areas.

Furthermore, the author argues that the survey and mapping system in Indonesia is almost unreliable for protecting the security of land tenure of citizens of Banda Aceh in post-disaster areas. This is due to the inability of most of sub-classes of surveying and mapping system in Indonesia to support the protection of land tenure security. The surveying and mapping sub-classes are surveying method, the source of evidence, the data storage and coordinate system.

In most of the cases in stable situation in Indonesia, the cadastral surveying method usually used is terrestrial surveying method. However, most of cadastral survey results are not bounded to the geodetic network. This leads to uncertainty of the location of the parcel. In the case of rehabilitation and reconstruction of land administration in Banda Aceh, the lack of professionals and equipment has almost led

to the same circumstances as above. This refers to the rejection from BPN and local land registry offices to process of land titling in some areas.

The valid sources of evidences regarding land tenure in Indonesia are the land book and notarial deeds. As mentioned previously in discussion on adjudication system in Banda Aceh, the hierarchy of evidence has gone beyond the one in the stable situation. As long as no regulations regarding the hierarchy of sources of evidences in Indonesian and particularly in Banda Aceh, this will lead to the disputes in the future, particularly when the rehabilitation and reconstruction phase ended.

The maintenance of Indonesian registry data has been criticised as not representing the most of the features of land registration in Indonesia regulated by Article 2 of Land Registration Regulation (see Section 5.1.1 for details). The unrepresented features are simplicity, security, affordability and currency. The simplicity feature could not be represented due to the nature of German/Swiss title registration system. The alienation of the land should be registered first in PPAT, in which further forwards the information to the land registry office. This then initiates the sporadic adjudication by land registry office. In most of the alienation of the land, the process halted at land registry offices that do not perform the necessary sporadic adjudication, or even stopped at PPAT offices due to the PPATs do not forward information on the alienation of the land registry offices. This also leads to insecurity and outdated land registry information. Even though the land registration process in Indonesia is theoretically affordable, it is in practice becoming expensive because of involvement of different institutions on land registration process, as well as the long period of registration for acquiring a land title.

However, in the case of rehabilitation and reconstruction of land administration in Banda Aceh, the land registration system could almost adhere to the features of land registration regulated by Article 2 of Land Registration Regulation, including openness. The simplicity of participatory land mapping, as well as digitalisation of land registry data, in return leads to the security, currency and openness of the land tenure information. The dispensation on payment of land registration fees for the victims of the December 26 catastrophe, in some circumstances, could lead to the affordable land titling.

The adopted map projection system for cadastral mapping in Indonesia is Transverse Mercator 6⁰. In contrary, the Indonesian topographic mapping, which is performed by National Coordinating Agency for Surveys and Mapping (Badan Koordinasi Survey dan Pemetaan Nasional/Bakosurtanal), adopts Universal Transverse Mercator 3⁰. Thus, Indonesian Base Map could not be directly employed as cadastral map. The small scale of and outdated base maps of Sumatra Island, which were produced in 1970s in scale of 1:50,000, also leads to the difficulties on employing Indonesian base maps. Thus, this is considered as an ineffectiveness of Indonesian coordinate and map projection system in the rehabilitation and reconstruction of Banda Aceh.

In conclusion, it is considered that Indonesian land registration system is still ineffective for addressing the features of land registration, both in Indonesia in general and particularly in Banda Aceh. However, the author argues that the land registration system enhancement in the scope of rehabilitation and reconstruction of

Banda Aceh could address the fulfilment of the features of land registration. Unfortunately, as the features of land registration in Indonesia are considered as also functioning as the legal features since they are regulated by Indonesian Land Registration Regulation, the land registration enhancement efforts still could not ensure the fulfilment of these legal features. This is attributable to the status of the enhancement efforts itself, which have only been drafted and have not been promulgated yet.

Additionally, the author argues that only a third of sustainability feature has been achieved by land registration system in rehabilitation and reconstruction of land administration in Banda Aceh. As described in Section 3.2.1.1, sustainability feature implies that the organisational and management arrangements, the procedures and technologies and the required educational and professional levels are appropriate for the particular jurisdiction. Fortunately, organisational and management arrangements, as well as procedures and technologies of land administration in post-disaster areas in Banda Aceh, have been well-performed and achieved. However, the required educational and professional levels are still not sufficient for addressing other features of land registration system in post-disaster areas in Banda Aceh.

8.1.3 Land Administration and Policy

This section brings the evaluation of the effectiveness of land tenure system for fulfilling the objectives of higher systems in post-disaster areas in Banda Aceh. Section 7.3.1 describes the higher system of land tenure system as land administration and policy. Section 7.3.1 also explains the objectives of land administration and policy in rehabilitation and reconstruction of Banda Aceh.

Firstly, the effectiveness of land tenure system on addressing the land administration problem in post-disaster areas in Banda Aceh is highlighted. The land administration problem in rehabilitation and reconstruction of Banda Aceh are as follows:

1. Legal problem:

- Lack of suitable land policy at national level, as well as large scale ambiguity and gaps in the regulatory framework. However, within one year after the tsunami there have been drafted regulations to cope the land administration problem in NAD and particularly in Banda Aceh. Even though the drafts of regulations have not been put into effect yet, in the future the large scale ambiguity could avoided and gaps in the regulatory framework could be filled. Unfortunately, some basic land administration problem due to the lack of performance of Indonesian land administration is still left unsolved, such as adoption of *hak ulayat* in UUPA;
- Limited prioritisation of land policy development that includes all stakeholders. However, after the establishment of BRR, this kind of problem have almost been solved since BRR is responsible for coordinating the assignment of all stakeholders, including for providing assistances and regulations on rehabilitation and reconstruction of land tenure system in post-disaster areas in Banda Aceh;

- The insecurity of land ownership due to the loss or destruction of land registry data by the December 26 catastrophe. RALAS and CDA have been employed to address this kind of problem. The systematic and participative adjudication are actually considered as the means to “fill the holes” left by the Indonesian land administration policies and regulations, such as unregistered land and the existence of more than one ownership systems. However, due to the loss, destruction and/or slow recovery of land registry data, the systematic and participative adjudication are solely relied on the truthfulness of the involved land owners and communities;

4. Technical problem:

- The loss or destruction of land registry data by the earthquake and tsunami. The restoration of land books was still on-going up to one year after tsunami. This has been considered as impeding the rehabilitation and reconstruction of land tenure system in post-disaster areas in Banda Aceh;
- The loss or destruction of land boundary markers, national geodetic networks and other associated documentations. The staking out of land boundary markers is on-going under participatory land mapping. However, up to one year after the December 26 catastrophe, there has been no single report yet on establishment of national geodetic networks;
- Outdated land registry data. Instead of updating the land registry data and waiting for the restoration of land books, the new and digital land registry datasets has been prepared under the scheme of participatory land mapping;
- The existence of banished and contaminated land, as well as land subsidence, which lead to the needs to allocate the land and property, either temporarily or permanently, for the returnees and IDPs, as well as new city plan that allocates the spatial plan of damaged land, damaged areas and unharmed areas. The drafts of Perpu on Cadastral Reconstruction, as well as guidelines on resettlement at earthquake- and tsunami-affected areas in NAD and Nias, are intending to address these problems. However, these drafts still have no legal power since they have not been put into effect yet;

5. Institutional problem:

- The lack of professionals and surveying equipments, as well as other supporting tools. According to Haroen *et al* (2006), 600 personnel have been trained up to one year after the tsunami. Two third of the trained personnel are the NGOs land mapping facilitators, while the rest are BPN employees that have been trained to conduct adjudication. Furthermore, BPN has also purchased computers and surveying equipments for accelerating adjudication in post-disaster areas in Banda Aceh;
- Inability of local governmental institutions to perform its tasks. Under RALAS scheme, the regional BPN and local land registry offices have been renovated. 200 BPN employees have also assigned to accelerate land registration in post-disaster areas in NAD.

Secondly, the effectiveness of land tenure system in post-disaster areas in Banda Aceh could also be evaluated by how the land tenure system could address the land tenure-related directives appointed by Master Plan of Rehabilitation and Reconstruction of NAD and Nias. Some of directives have been addressed earlier in this section, except for the following directives:

- Highlighting cultural and religious characteristics. The *Syariah* has been partially adopted within the draft of Perpu on Cadastral Reconstruction in NAD. However, there is a need to address in more detail the adoption of *Baitul Maal* and inheritance concept as there is no supportive regulation promulgated yet up to one year after the December 26 catastrophe. The adoption of *hak ulayat* in UUPA should also be studied further;
- Creating anticipation for disaster. The digitalisation of land registry data is intending to fulfil this directive. However, the establishment of national geodetic network and the data back up scheme are still untouched, which could lead to the same problem in the case of disaster in the future;
- Providing fair and affordable land compensation. In order to address this directive, the draft of guidelines on resettlement at earthquake- and tsunami-affected areas has been prepared. However, it is not clear yet whether this guidelines would be regulated, which leads to a fear of powerless implementation of this guidelines.

Thirdly, the effectiveness of land tenure system in post-disaster areas in Banda Aceh could be evaluated by how the land tenure system could adhere to the Indonesian land policy. The author argues that the security of land tenure is very important for addressing the Indonesian national land policy written in Article 33.3 of Constitution of Republic of Indonesia. As concluded in Section 8.1.1, the immediate actions in rehabilitation and reconstruction of land tenure system in Banda Aceh could provide the security of land tenure in post-disaster areas in Banda Aceh. However, the inability of land tenure system to adhere to adoption of *hak ulayat* in national land policy could lead to disputes in the future.

Furthermore, Resolution of Parliament of Republic Indonesia No. IX year 2001 addresses the investigation on the renewal of Indonesian land tenure regulations. The author argues that the renewal of Indonesian land tenure regulations has been ongoing by drafting the Perpu on Cadastral Reconstruction in NAD. However, the adoption of *hak ulayat* in UUPA, which becomes the centre of the discussion on renewal of Indonesian land tenure regulation, is still being debated.

In conclusion, the rehabilitation and reconstruction of land tenure system in post-disaster areas has almost effectively addressed the objectives of the higher system of land tenure system, which are land administration and policy system. However, there are still works to be done to completely fulfil the objectives of land administration and policy system by land tenure system, namely:

- The investigation on the adoption of *hak ulayat*, both in Indonesian in general and particularly in Banda Aceh, in UUPA;

- The establishment of national geodetic network in NAD, particularly in Banda Aceh;
- The investigation of hierarchy of legal evidence in land tenure system;
- The investigation of establishment of land tenure regulations to further support the implementation of land tenure system in NAD, particularly in Banda Aceh.

8.2 Evaluation of Rehabilitation and Reconstruction of Land Use System in Banda Aceh

In this section, the land use system in the scope of the rehabilitation and reconstruction of Banda Aceh is evaluated using the framework described in Section 7.3.2. This section further is divided based on three evaluation framework of land use system, which are evaluation of effectiveness of land use system (Section 8.2.1), evaluation of effectiveness of spatial planning (Section 8.2.2) and evaluation of effectiveness of land use system to support objectives of the higher system of land use system (Section 8.2.3) in rehabilitation and reconstruction of Banda Aceh.

8.2.1 Land Use System

This section describes the first evaluation framework in which measures whether the Indonesian land use system is wanted and desired in the future by citizens of Banda Aceh. This is due to the dualism of land use regime in Banda Aceh.

Chapter 2 describes that Acehnese's customary land use system adopts entirely the bottom-up approach. The decentralised authorisation in Acehnese's customary land use system allows the village to manage its own land use. The head of village (*Keuchik*) is authorised, by the approval from the village's community, to allocate the land for every purposes, as well as maintaining the balance of land allocation in order to preserve sustainability.

This attitude is mirrored in the rehabilitation and reconstruction of land use system in NAD and particularly in Banda Aceh. Most of the IDPs intended to return to their village and rebuild their village to the condition before the December 26 catastrophe happened (Yunus, 2005). Having facilitated by BRR and its partners, the village-based planning is utilised within the rehabilitation and reconstruction of land use system in post-disaster areas in Banda Aceh. The village-based planning is directed to achieve sustainability, as well as to be able to form disaster-resistant villages.

In contrary, the Indonesian land use system adopts the top-down approach. The Indonesian land use system implements the combination of zoning, development control and building regulation approach. However, the zoning approach, which is usually implemented within the national and provincial level, is usually used as guidelines only. The large-scale land use management is usually managed by local government using development control and building regulation approach. In most of the case in Indonesia, the development control and building regulation are not in accordance with the zoning guidelines (Martini, pers. com. 2006⁷). Martini (pers.

⁷ Interview with Sely Martini, Indonesian planner and employee of Indonesia Corruption Watch, on March 29, 2006

com. 2006) mentions that this is due to the lack of law enforcement in Indonesian land use system. The development control and building regulation are mostly promulgated based on developers' interest.

In the case of rehabilitation and reconstruction of land use system in Banda Aceh, basically the macro scale top-down spatial planning proposed by government is not obeyed by the citizens, particularly on the buffer zones proposal. Most of the citizens of Banda Aceh prefer to return to their initial place of living before the December 26 catastrophe. This is due to the bond between Acehnese to their land (see Chapter 2 for details). However, the government further accommodates the will of some of Acehnese to return to their initial place of living by providing alternatives, whether returning to the initial place of living or being relocated to the safer areas. For those who want to return to their initial place of living, government provides guidance for minimising effect of the future tsunami under Guidelines on Village-based Planning.

In conclusion, the Acehnese's customary land use system is preferred by the citizens of Banda Aceh rather than the Indonesian land use system. This is due to the disarrangement of Indonesian land use system, in which could only be enjoyed by the few people in Indonesian in general, particularly those who are related to the person in charge on formulating the spatial plan. In the future, the Acehnese's customary land use system is also preferred since, according to Juned (pers. com. 2005), it will lead to sustainable development rather than the Indonesian land use system.

8.2.2 Spatial Planning

In this section, the second evaluation framework for assessing the effectiveness of spatial planning in rehabilitation and reconstruction of Banda Aceh is described. The evaluation of spatial planning approach in rehabilitation and reconstruction of Banda Aceh bases on the framework argued by Larsson (1997). Larsson (1997) argues that the successfulness of spatial planning could be evaluated by the realism, up-dating, binding power and participation/consultation of spatial planning. Larsson (1997) also argues that the spatial planning could not be separated from its implementation. This framework therefore also employs the features of spatial planning implementation for evaluating the spatial planning in rehabilitation and reconstruction of Banda Aceh. The features of spatial planning implementation are institutional connection to planning-implementation, unambiguous division of responsibility, power of relevant institutions, decentralisation, financial base and personal resources (Larsson, 1997).

For evaluating the successfulness of spatial planning, realism is considered as the first important parameter. In the rehabilitation and reconstruction of Banda Aceh, the degree of realism in its spatial planning approach is considerably high. As the participatory spatial planning has been employed in post-disaster areas in NAD and Nias, as well as in Banda Aceh, the plan is formulated based on the needs of the community in question, even though it will consequence the inconformity to the macro scale top-down spatial plan proposed by government. This inconformity then is balanced by the government by providing the guidance for planning the settlement areas for minimising the effect of the future tsunami in Guidelines on Village-based Planning. The village-based planning also incorporates the consideration on

implementing and financing the plan, due to the funds availability for rehabilitation and reconstruction of post-disaster areas in NAD and Nias.

The top-down approach employed in rehabilitation and reconstruction of Banda Aceh is also considered to be realistic as the funds are available for rebuilding the public infrastructure. The top-down approach focuses on the revitalisation of public infrastructures, such as roads, ports, airports and so forth. Furthermore, even though this has not been promulgated yet, the “meeting point” between top-down and bottom-up spatial planning approach has been identified and planned (See Section 6.2.2.2 for details).

The participation and consultation within the formulation of spatial plan is also considered to be well-performed in the rehabilitation and reconstruction of Banda Aceh. The village-based planning accommodates the villagers’ aspirations. As the performance of village-based planning should involve the facilitators, who have been trained to assist the village-based planning, the consultation therefore is considered as the process included within the formulation of village-based plan. The consultation to the Bappeda and regional and local spatial planning offices should also performed since Bappeda and regional and local spatial planning offices have an authority to promulgate the spatial plan.

However, the author argues that both top-down and bottom-up approach have not considered the updating and binding power on formulating spatial plan in post-disaster areas in Banda Aceh. Since the rehabilitation and reconstruction of land use system has only been performed less than one year, the above argument is based on the performance of Indonesian spatial planning system in general. The spatial plan is usually formulated in at least a year, which allows the undetected changes happened during the formulation of the spatial plan. In the case of rehabilitation and reconstruction of land use system in Banda Aceh, the updating of spatial plan should be maintained after the employment period of the facilitators ended and the funds flow stopped. Furthermore, in both Indonesia and rehabilitation and reconstruction of land use system in post-disaster areas in Banda Aceh, the binding power has not been defined in any spatial planning regulations in Indonesia.

Furthermore, Larsson (1997) argues that the successfulness of spatial planning process is also relied on its implementation. Larsson (1997) identifies the parameters for evaluating spatial planning implementation as comprised of institutional connection to planning-implementation, unambiguous division of responsibility, power of relevant institutions, decentralisation, financial base and personal resources.

As the rehabilitation and reconstruction of land use system in Banda Aceh has only been performed for less than one year, as well as considering unfinished formulation of Banda Aceh spatial plan and that the valid land use system in Banda Aceh is Indonesian land use system, the successfulness of spatial planning implementation is being estimated using the evaluation of Indonesian spatial planning implementation.

In Indonesian spatial planning system, institutional connection on spatial planning is considerably weak. As described in Section 5.1.2.2, there are at least two governmental institutional in charge within the formulation of spatial planning in each

governmental level. In the level of municipality/regency, one additional institution is usually existed. Principally, the formulation of spatial plan is performed by spatial planning offices, particularly in municipality level, and public works offices. In national level, Bappenas is responsible to coordinate the spatial planning formulation, while Bappeda is responsible to coordinate the spatial planning formulation in regional level. However, the link among those institutions in every level is practically not existed as each institution formulates its own spatial plan for its own purpose.

However, the institutional connection to planning-implementation is considered to be quite strong. This is due to the authority of regional and local public works and spatial planning offices to implement their own spatial plan. Unfortunately, the weak link among the spatial planning institutions while formulating the spatial plan could turn over the strong institutional connection to planning-implementation since the plan itself is considerably unreliable.

Theoretically, the division of responsibility on spatial planning implementation in Indonesia is relatively clear (see Section 5.1.2.2). However, lack of coordination and consultation among the governmental institutions during the formulation of spatial plan will lead to the confusion on spatial planning implementation.

Due to the decentralised authorisation of spatial planning implementation, the power of relevant lower institutions on implementing the spatial plan is considerably strong. This is due to the promulgation of Spatial Planning Act. The decentralisation also leads each institution, particularly regional and local public works and spatial planning offices, has an authority to propose the budget for implementing the spatial plan to the ministry of treasury and regional and local treasury offices.

The lack of professional education regarding the spatial planning and its implementation has led to the inability of most of spatial planning governmental institutions in Indonesia to perform its tasks. Bappenas and Bappeda however have initiated a breakthrough by outsourcing the formulation of spatial plan to the university. Unfortunately, it is common that most of spatial plan, including the development control, is stirred by powerful interests.

In conclusion, the breakthrough to implement bottom-up spatial planning approach has led to the formulation of more realistic spatial plan. The donor honeymoon also eases the implementation and funding of the formulation of spatial plan and its implementation. However, at the moment that the donor honeymoon over, it is estimated that the spatial planning system will be operated as it used to be before the December 26 catastrophe happened, particularly if another breakthrough is not planned or going to be planned.

Furthermore, the author argues that the Indonesian spatial planning system is lack of realism, binding power, participation/consultation and human resources. In fact, the Indonesian spatial planning system theoretically could be considered as having a well-connected planning-implementation institutional, unambiguous division of responsibility, powerful institutions on implementing the spatial plan and decentralised system. However, as the realism, binding power, participation/consultation and human resources contribute mostly to the

successfulness of spatial planning and its implementation, the well-performance of spatial planning system could not be achieved. Furthermore, the bad-operated spatial planning system led to ineffectiveness of spatial planning system in Indonesia.

8.2.3 Land Administration and Policy

This section brings the evaluation of the effectiveness of land use system for fulfilling the objectives of higher systems in post-disaster areas in Banda Aceh. Section 7.3.2 describes the higher system of land use system as land administration and policy. Section 7.3.1 also explains the objectives of land administration and policy in rehabilitation and reconstruction of Banda Aceh.

The effectiveness of land use system on addressing the land administration problem in post-disaster areas in Banda Aceh is highlighted. The land administration problem in rehabilitation and reconstruction of Banda Aceh are as follows:

1. Legal problem:

- Lack of suitable land policy at national level, as well as large scale ambiguity and gaps in the regulatory framework. However, within one year after the tsunami there have been drafted guidelines to cope the land use problems in NAD and particularly in Banda Aceh. Unfortunately, some basic land use problems due to the lack of performance of Indonesian land administration is still left unsolved, such as lack of realism, up-dating, binding power and participation/consultation;
- Limited prioritisation of land policy development that includes all stakeholders. However, after the establishment of BRR, this kind of problem have almost been solved since BRR is responsible for coordinating the assignment of all stakeholders, including for addressing land administration problem in NAD, as well as in Banda Aceh;

2. Technical problem:

- Large scale destruction of buildings within different level of damages in only two third of region of Banda Aceh, which lead to the needs for rapid redevelopment of houses, as well as setting up the housing redevelopment priority. However, the drafts of guidelines on resettlement and housing rehabilitation and reconstruction entitlements, as well as village-based planning scheme, could address this matter, especially when they have been legalised;
- The needs to address the disaster mitigation for planning the future policy and implementation of land administration system. The Banda Aceh spatial plan formulated by JICA has address this needs. However, this spatial plan is still powerless since it should go through the consultation processes and be regulated by law;

3. Institutional problem:

- The lack of professionals. The training of facilitators to assist the village-based planning is argued as temporarily sufficient to adhere to the land administration problem in Banda Aceh. However, the needs of professional planners are still existed, particularly for formulating the top-down approach and its implementation, as well as combining the top-down and bottom up approach, in the future;
- Inability of local governmental institutions to perform its tasks. The foundation of new offices, as well as recruitment and assignment of governmental staffs in Banda Aceh, hopefully could accelerate the restoration of functions of local governmental institutions.

Besides the objectives to resolve the land administration, the effectiveness of land use system in post-disaster areas in Banda Aceh could also be evaluated by how the land use system could address the land use-related directives appointed by Master Plan of Rehabilitation and Reconstruction of NAD and Nias. Some of directives have been addressed earlier in this section, except for the following directives:

- Highlighting cultural and religious characteristics. The village-based scheme is basically intending to preserve the Acehnese's customary land use system, as well as to promote the high-quality living environment and sustainability. Even though it does not conform with the zoning proposal of government of Indonesia, it is however balanced by the efforts of the government to provide guidance on village-based planning to minimise the effect of future tsunami;
- Combining top-down and bottom-up spatial planning approach. This has been employed under the coordination and assistance from BRR;
- Revitalising economic activities based on local natural resources. The identification of local natural resources after the December 26 catastrophe has not been performed up to one year after the catastrophe.

Furthermore, the sustainability is argued to be the objective of Article 33.3 of Constitution of Republic of Indonesia, as well as Resolution of Parliament of Republic of Indonesia No. IX year 2001 concerning Agrarian Reform and Natural Resources Management. The combination of top-down and bottom-up spatial planning approach is considered as a breakthrough in the spatial planning system and argued to be able to lead to sustainability. However, considering problem due to lack of binding power, participation/consultation and human resources in performance of land use system, the land use system is argued not to be able to support the fulfilment of the objective of Indonesian land policy.

In conclusion, immediate actions on land tenure system for handling rehabilitation and reconstruction of land administration in Banda Aceh could support the fulfilment of every objectives of land administration system in post-disaster areas. However, those actions are still not sufficient to support the fulfilment of land policy objective due to the lack of binding power, participation/consultation and human resources in performance of land use system.

PART V CONCLUSION AND RECOMMENDATION

Having evaluated the policy of GoI in rehabilitation and reconstruction of land administration in Banda Aceh in previous chapters, this final part of study report brings the Conclusion and Recommendation (Chapter 9).

9. CONCLUSION AND RECOMMENDATION

This chapter brings the conclusion of this study in Section 9.1. The conclusion is mainly based on answers to the research questions of this study. Furthermore, this chapter also describes the recommendations for further performance of rehabilitation and reconstruction of land administration in Banda Aceh in Section 9.2, based on the conclusion of this study.

9.1 Conclusion

In this section, the conclusions from the performance of this study are described. The conclusions of this study are further structured based on the answers from main research question described in Section 1.3.4, which is:

“How effective the policy of GoI is to address the problems on rehabilitation and reconstruction of land administration in Banda Aceh after the December 26 earthquake and tsunami.”

As also described in Section 1.3.4, several secondary research questions are posted to provide the reliable answer to the main research question. Therefore, this section is divided into two subsections, which facilitates the answers to secondary questions (Section 9.1.1), as well as the answer to main research question (Section 9.1.2).

9.1.1 Answers to Secondary Research Questions

9.1.1.1 Acehnese's Customary Land Administration System

The first secondary question is what the contribution of the Acehnese's customary land administration system is to the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh. Even though *hak ulayat* is existed in Banda Aceh, the policy of GoI may considerably be effective for addressing the problems on rehabilitation and reconstruction of land tenure system in Banda Aceh (see Section 6.1 and 8.1.1 for details). This is due to the intention of the policy of GoI for providing the security of land tenure in post-disaster areas in Banda Aceh. The immediate actions taken on rehabilitation and reconstruction of land tenure system could even provide the land tenure security the land in which has not been registered up to the December 26 earthquake and tsunami (see Section 8.1.3 for details). However, the citizens of Banda Aceh in particular, represented by their community leader, wish for the adoption of Acehnese's *hak ulayat* within the policy of GoI on land tenure system in the future. This is due to the argument that the validation of unfamiliar land tenure system in Banda Aceh will lead to the diminishing of Acehnese's *hak ulayat* and unsustainable land tenure system. Furthermore, problems on alienation of land, employment of Baitul Maal and inheritance are urged to be solved (see Section 8.1.1 for details).

On the other hand, the application of Acehnese's customary land use system is considered as contributing to the effectiveness of policy of GoI in rehabilitation and reconstruction of land use system in Banda Aceh. The bottom-up approach applied in Acehnese's customary land use system (see Section 2.3.1 for details) is in accordance with the theories on advancing land use system (see Section 3.2.1.2 for details). The village-based planning scheme provides the tools for implementing the bottom-up approach in rehabilitation and reconstruction of land use system in Banda Aceh (see Section 6.2 for details). The Acehnese's customary land use system is also argued as leading to the sustainable development (see Section 8.2.1 for details). Even though the bottom-up approach leads to inconformity with zoning proposal of GoI written in Master Plan, this inconformity has been balanced by the government by providing the guidance for planning the settlement areas for minimising the effect of the future

tsunami in Guidelines on Village-based Planning. Besides, the conformity with the customary background of Acehnese will avoid new conflicts to arise.

9.1.1.2 Land Administration Theories

The second secondary question of this study is what the contribution of the existing land administration theories and cases, in both stable and uncertain environment, is to the effectiveness of GoI's policy on rehabilitation and reconstruction of land administration in Banda Aceh. For addressing this secondary research question, this study divides its investigation as comprising of conventional land administration theory, as well as the land administration theories and cases in uncertain environment.

Having investigated the existing land administration theories and cases in both stable and uncertain environment, it is concluded that conventional land administration theories could be applied on investigation of effectiveness of rehabilitation and reconstruction of land administration in Banda Aceh. However, the special attention to the characteristic of land administration system in post-disaster areas should be placed to resolve of land administration-related problem in post-disaster areas in Banda Aceh, as well as to plan immediate actions on rehabilitation and reconstruction of land administration in Banda Aceh (see Section 7.1 for details). Furthermore, the land administration theories, particularly soft system theory, and cases in uncertain environment provides the description of land administration-related problems and immediate actions in uncertainty, as well as the framework for evaluating the effectiveness of rehabilitation and reconstruction of land administration in Banda Aceh (see Chapter 7 for details).

9.1.1.3 Indonesian Land Administration Policies and Regulations

The third secondary question of this study is what the contribution of Indonesian land administration policies and regulations is to the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh. It is concluded that the Indonesian land administration policies and regulations, in both land tenure and land use system, are not sufficient to resolve the land administration problem in rehabilitation and reconstruction of Banda Aceh. From the land tenure system point of view, the dualism of Indonesian land tenure regime leads to the insecurity of land tenure, particularly for land tenure under *hak ulayat*. *Hak ulayat* could not be titled except using regular procedure on land titling, which means that it will not be considered to have *hak ulayat* attached in it once *hak ulayat* is registered. The lack of fulfilment of land registration features, which are simplicity, security, affordability, currency and sustainability leads to low performance of land registration system in Indonesia, which in return could lead to illegal or extralegal alienation of land (see Section 8.1.2 for details). Furthermore, the lack of realism, binding power, participation/consultation and human resources in Indonesian land use system leads to bad-operated and ineffective spatial planning system in Indonesia (see Section 8.2.3 for details).

Due to the inability of Indonesian land administration system to perform its task, immediate efforts are needed to address the land administration-related problem in rehabilitation and reconstruction of Banda Aceh. GoI, its representative and its partners in rehabilitation and reconstruction of land administration in Banda Aceh

therefore have formulated regulations and guidelines regarding the rehabilitation and reconstruction of land administration in Banda Aceh (see Chapter 6 for details). However, the lack of binding power could lead to another dispute (see Chapter 8 for details).

9.1.1.4 Progress of Rehabilitation and Reconstruction of Land Administration in Banda Aceh

The fourth secondary research question is what the contribution of the progress of rehabilitation and reconstruction of land administration in Banda Aceh is to the effectiveness of policy of GoI on rehabilitation and reconstruction of land administration in Banda Aceh. In the legislation level, the guidelines and drafts of land administration-related regulations could nearly address every land administration-related problem in rehabilitation and reconstruction of land administration in Banda Aceh and even fill the gaps in some of the Indonesian regulatory framework (see Chapter 6 and 8 for details). However, before the sanctioned of guidelines, the drafts of regulations and other land administration-supportive regulations, those guidelines and drafts of regulations are powerless. Furthermore, if the breakthroughs provided by the immediate actions in rehabilitation and reconstruction of land administration system in Banda Aceh are not followed up or going to be followed up in the future, particularly after the donor honeymoon period over, it is estimated that the land administration state in Banda Aceh will return to the land administration status before the December 26 catastrophe. Without applying the breakthroughs applied in the rehabilitation and reconstruction of land administration in Banda Aceh, the returning of land administration status to the same condition before the December 26 catastrophe, will once again lead to inability of Indonesian land administration system to achieve its objectives (see Chapter 8 for details).

9.1.2 Answer to Main Research Question

Based on the answers of secondary research questions, the answer of main research question could be formulated as follows:

“The policy of GoI in rehabilitation and reconstruction of land administration has been effectively addressing the land administration problems in post-disaster areas in Banda Aceh and filling the gaps in the regulatory framework. However, the lack of reliability of Indonesian land administration system in general could lead to the ineffective performance continuation of the system, particularly in the case that the breakthroughs in rehabilitation and reconstruction of land administration in NAD in general, and particularly in Banda Aceh, is not or not going to be adopted & realised in the Indonesian land administration system.”

9.2 Recommendation

The policy of GoI in rehabilitation and reconstruction of land administration in Banda Aceh is considered as effectively addressing the land administration problems in post-disaster areas in Banda Aceh. There are however several recommendations to complete the fulfilment of the objectives of rehabilitation and reconstruction of land

administration in post-disaster areas in Banda Aceh, as well as to ensure the continuation of the fulfilment of the objectives in post-disaster areas in Banda Aceh.

9.2.1 Adoption of Breakthroughs in Rehabilitation and Reconstruction of Land Administration in Banda Aceh

It is recommended to adopt and realise the breakthroughs, which have been applied in rehabilitation and reconstruction of land administration in Banda Aceh, in the Indonesian land administration system. The adoption and its realisation of breakthroughs in post-disaster situation in Banda Aceh in the Indonesian land administration system is intended to ensure the continuation of implementation of these breakthroughs in Banda Aceh and Indonesia in general.

9.2.2 Recommendations on Rehabilitation and Reconstruction of Land Tenure System in Banda Aceh

The next recommendations are suggested to be applied within the performance of rehabilitation and reconstruction of land tenure system in Banda Aceh.

9.2.2.1 Supportive Regulation

It is recommended to provide the supportive regulations, which should be in accordance with *Syariah* applied in NAD, on legalisation of *Baitul Maal* in order to be able to be granted rights to land, as well as arrangement of the problem on inheritance of land whose land owner has passed away.

9.2.2.2 Liable Hierarchy of Evidence

It is recommended to provide liable hierarchy of evidence in adjudication and alienation of land. This is fully recommended since the valid legal evidence in Indonesian land registration system is land book and notarial deeds, while land tenure system has been practicing the use of minimum legal evidence due to the incompleteness of key items of land registration, which are land, land owner, land certificate and land book.

9.2.2.3 Guidelines on Cadastral Surveying and Mapping

It is recommended to establish guidelines on cadastral surveying and mapping, which should include the options on surveying methods, data storage and data maintenance. The critics due to the rejection from BPN and local land registry office to register the several lands mapped by participatory land mapping, which actually shows the lack of professional education on cadastral surveying and mapping, could be avoided. The proper training and education should also follow the establishment of this guideline to ensure the effectiveness of the surveying and mapping in post-disaster areas in Banda Aceh, as well as to increase the amount of professionals, or at least professional-wannabe, within rehabilitation and reconstruction of land administration in Banda Aceh.

9.2.2.4 One National Coordinate System

It is recommended to establish one national coordinate system in order to provide additional spatial information, particularly in the case of emergency. This has been discussed and recommended by the thesis of most of Indonesian geodetic/geomatics student. However, the solution has never really been discussed, either by the experts or by in charge institution.

9.2.2.5 Adoption of Hak Ulayat in Land Tenure Laws and Regulations

It is recommended to initiate the research on the adoption of *hak ulayat* in UUPA and/or other land tenure-related laws and regulations. This is due to the desired land tenure system in the future by citizens of Banda Aceh, and even by most of land tenure experts and by Resolution of Parliament of Republic of Indonesian No. IX year 2001.

9.2.3 Recommendation on Rehabilitation and Reconstruction of Land Use System in Banda Aceh

The following recommendations are investigated from the analysis of rehabilitation and reconstruction of land use system in Banda Aceh.

9.2.3.1 Guidelines on Combining Top-Down and Bottom-Up Spatial Planning Approach

It is recommended to provide legal guidelines on implementing the combination of top-down and bottom-up spatial planning approach. This is to ensure the continuation of implementation of bottom-up spatial planning approach, particularly after the donor honeymoon ends. Even though it has been regulated by Spatial Planning Act since 1997, the implementation of bottom-up spatial planning approach mostly is not in accordance with the land policy written in Article 33.3 of Constitution of Republic of Indonesia, particularly while highlighting the sentence "...exploited to greatest benefit of people...". As described in Section 8.2.3, the development control is mostly stirred by few powerful interests. Moreover, this guideline should also provide the assessment parameters for proportioning each approach in the combination, particularly by putting special attention to the possible outcome and conflict from this combination.

9.2.3.2 Binding Power

It is recommended to formulate the binding regulations, particularly on implementing spatial plan in rehabilitation and reconstruction of Banda Aceh. These regulations should include the participation/consultation scheme as well in order to ensure an effective implementation of spatial plan in rehabilitation and reconstruction of land administration in Banda Aceh, as well as the continuation of rehabilitation and reconstruction of land administration in Banda Aceh.

9.2.3.3 Professional Training and Education

It is recommended to establish proper training and education for spatial planning professionals due to the lack of professionals in rehabilitation and reconstruction of land use system in Banda Aceh. It is recommended to establish more first and higher

degree education on spatial planning, as well as to organise short courses and conferences on specific topics of spatial planning, particularly for advancing Indonesian land use system. Besides establishing proper training and education on spatial planning, the researches on and formulation of spatial planning could alternatively be outsourced to academic experts.

9.2.3.4 Revitalisation of Economy based on Local Natural Resources

Finally, it is recommended to revitalise economic activities based on local natural resources. The aerial photography and satellite imagery could be employed to identify the natural resources in Banda Aceh and should be included as the input for formulating spatial plan of Banda Aceh.

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