

# Chapter 1

## Introduction

### 1.1 Disaster and Poverty

Natural disasters cannot be prevented; but they can be anticipated, prepared for, and minimized in terms of their effects on human life, welfare and happiness. More than 296,800 people died in 373 natural disasters in 2010. In addition, about 208 million people were affected by the disasters<sup>1</sup>. Many developed countries are using the early warning systems to save lives and reduce economic losses at all levels and but many people had been killed by natural disaster. Poor countries are much more dependent on natural resources as assets than rich countries. A link between natural resources, the environment and poverty is plausible<sup>2</sup>. Every economic action can have some effect on the environment, and every environmental change can have an impact on the economy. Environmental change, particularly of local natural resources, can affect poverty through many pathways. In fact, disasters are not killers.

The main reason is poverty.

Approximately three billion<sup>3</sup> people in the world today live on less than two dollars a day. The recent economic crisis and recession have further increased the challenge of meeting the Millennium Development Goals (World Bank, 2010). On the globe, South East Asia is known as the world's largest concentration of people living

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<sup>1</sup> Centre for Research on the Epidemiology of Disasters (CRED) (<http://www.preventionweb.net>)

<sup>2</sup> Ekbom, A and Bojo, J. (1999). Poverty and Environment

<sup>3</sup> <http://www.fightpoverty.mmbriico.com/poverty/facts.html>

in poverty. Additionally, the International Fund for Agricultural Development estimated that seventy five percent of the 1.2 billion people live on less than one dollar a day work in rural areas. With these statistics in mind, it is clear that poverty eradication and food security will remain basic challenges to rural development in Asia in the twenty first century.

This thesis focuses on one country in South East Asia that is particularly debilitated by the poverty epidemic. Myanmar is one of the lowest-income countries with GDP per capita rank of 182 out of 213 and a Human Development Index of 138 out of 182 countries in 2007<sup>4</sup>. The total population of the country was 60 million in 2009<sup>5</sup>. Agriculture is the most important sector of the national economy of Myanmar, contributing approximately 45 percent of the 2007 GDP<sup>6</sup>. Myanmar remains a predominantly agrarian society with the mass of its population heavily dependent on agriculture and related activities. About 76 percent of the rural population is engaged in that sector. Moreover, the urban population is largely dependent on the agriculture sector. Agriculture income is therefore of pivotal importance since it has a direct bearing on all other socio-economic aspects of Myanmar. The country's macroeconomic imbalances, particularly high inflation and persistent budget deficits, are prominent concerns in the economy. These factors tend to increase the input cost of rice production for the struggling rural poor. Furthermore, the economic growth of Myanmar has been dampened by some factors such as inadequate infrastructure, outdated and inappropriate production technology, environmental legislation, state

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<sup>4</sup> The WORLD FACTBOOK by Central Intelligence Bureau  
(<https://www.cia.gov/library/publications/the-world-factbook/geos/bm.html>)

<sup>5</sup> The WORLD FACTBOOK by Central Intelligence Bureau  
(<https://www.cia.gov/library/publications/the-world-factbook/geos/bm.html>)

<sup>6</sup> Tripartite Core Group, 2008. Post Nargis Joint Assessment

price supports to unproductive sectors, and the lack of advanced skilled workers in the labor force.

Rural poverty affects a significant portion of the country's population. Poverty reduction has been slow due to widening inequalities among income groups and insufficient capital. According to the Agriculture Census in 1993, about 36 percent of total farming households owned less than three acres of land; these households can be presented as the "hardcore poor"<sup>7</sup>. In 1997, the Central Statistical Organization (CSO) collected household consumption in both food and non-food expenditures, covering all states and divisions. Based on the national poverty line of daily per capita expenditure of 53.69 Kyats, the poverty incidence in urban areas was 23.9 percent, in rural areas 22.4 percent and for the whole country 22.9 percent<sup>8</sup>. The Asia Development Bank (2001a) found that Myanmar is trapped in abject poverty despite its rich resources base, and that the trend of poverty is steadily increasing over the last ten years. Many international non government organizations are trying to help the poverty eradication efforts in Myanmar. Nonetheless, almost all the non government organizations are facing complex and difficult operating environments for their programs. In addition, all organizations, even local non government organizations, have been further compounded by restrictions from Myanmar's government. Published statistics are greatly understated. Myanmar and its people have intensity for poverty<sup>9</sup>. But the government's policies, its restrictions to travel, and control of information are the significant barriers for non-state actors. Even with greater

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<sup>7</sup> A household is considered hardcore poor if its income is less than the food poverty line.

<sup>8</sup> Central Statistical Organization. (1997). *Household Income and Expenditure Survey 1997*.

<sup>9</sup> The intensity of poverty is the index that combines both poverty and income inequality among the poor.

funding for aid agencies, humanitarian assistance alone will not be enough to transform the lives of the millions of vulnerable persons in Myanmar who need help.

## **1.2 The Irrawaddy Delta and Cyclone Nargis**

The Irrawaddy delta, a low-lying area along the Bay of Bengal has been called Myanmar's rice bowl. In that region, nearly everyone is employed through rice production or the fishing industry. Successful paddy output for a specified season determines not only the next paddy cultivation; it also leads to nonfarm opportunities for employees. At present, family farm income is low because of low farm productivity. Furthermore, primary products are marketed without value added at the household level creating very low profit margin to growers. Farm wages are barely enough to provide food, with little left over for clothing, school fees, shelters, supplies, or medicines. In this region, the situation of economics, livelihood, and quality of life have been degrading for the past decade.

The delta is by no means one of the poorer parts of the country (29 percent of the population was poor in 2004-05, compared with 32 percent of the national poverty).

As agriculture is the driving force in the economy of the Irrawaddy delta, these uncertainties have a strongly impact on the income of households in other sectors. Overall in the Delta, 32 percent of the landless people work in agriculture as renters/sharecroppers, agriculture workers, or seasonal agriculture workers. This figure is well above the 26 percent national average. The other two-thirds work in other sectors including fisheries, salt production, trade and transportation. The

landless are more likely to be poor in the Delta region than elsewhere: forty-four percent of the landless live below the government poverty line, compared with the 33 percent nationally. Of the “poor” in the Delta, 31 percent were landless, while the “very poor” were almost always landless at 85 percent.<sup>10</sup>

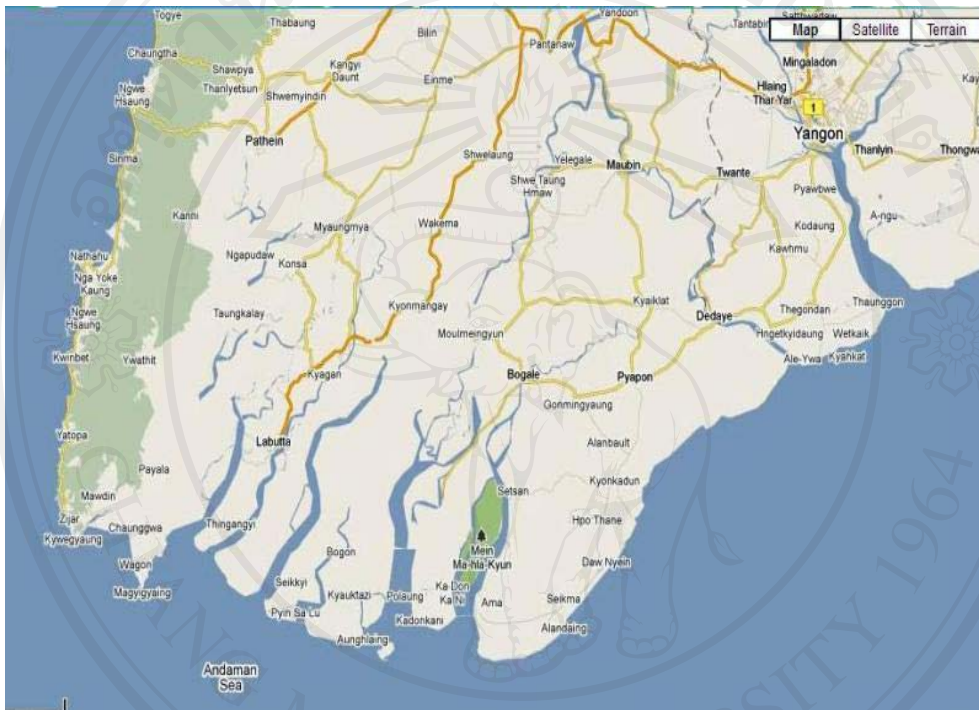


Figure 1.1 Map of Irrawaddy Delta, Myanmar

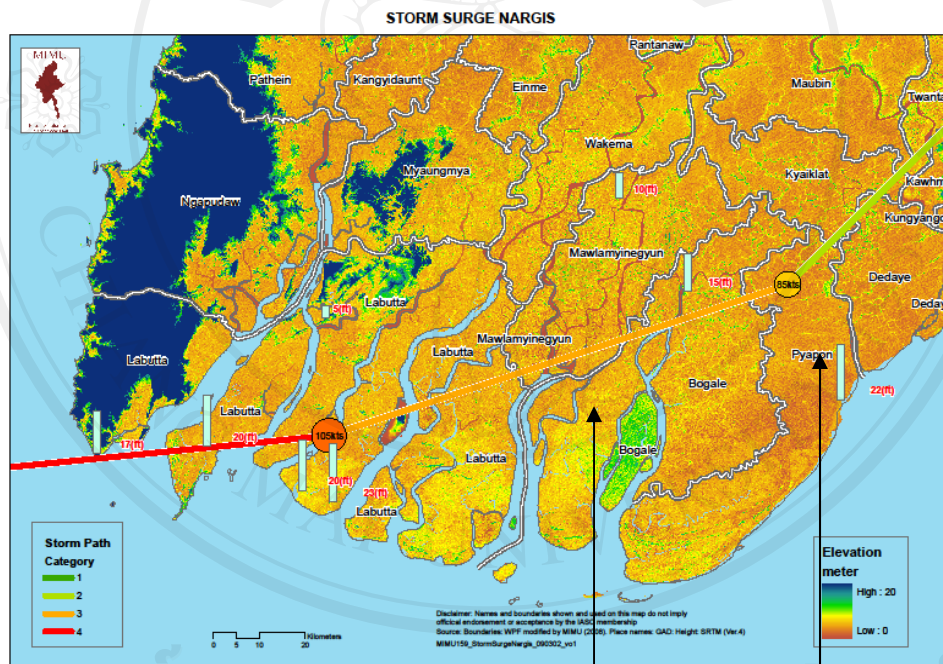
Source: <http://maps.google.com/maps>

In addition to these more generalized poverty challenges, the Irrawaddy delta area was also hit by the devastating cyclone Nargis in 2008. The category 3 cyclone Nargis struck Myanmar on 2 and 3 May 2008, making landfall in the Irrawaddy Division, approximately 250 km southwest of Yangon, and affecting more than 50 townships. With wind speeds of up to 200 km/h accompanied by heavy rain, the

<sup>10</sup> PONJA\_Post Nargis Joint Assessment, 2008



damage was most severe in the Delta region, where the effects of the extreme winds were compounded by a 12 foot (3.6 meter) storm surge. Nargis was the worst natural disaster in the history of Myanmar, and the most devastating cyclone to strike Asia since 1991. In the years following the natural disaster, the incidence of flooding and of unexpected pest and disease attacks has significantly reduced the yields and earnings from paddy related activities, putting the productivity of the country's "rice bowl" into question.



Heavily affected      Slightly affected

Figure 1.2 Map of Cyclone Nargis Affected Areas

Source: MIMU \_ Myanmar Information Management Unit

*www.themimu.info*

### 1.3 Significance of the Problem

According to the PONJA report (2008), out of an estimated 7.35 million people living in the affected townships, some 2.4 million people were severely affected by the cyclone. The death and loss assessments after the cyclone also indicated that more women than men died, thus distorting social structures. Child deaths are also believed to have been substantial, although fatalities disaggregated by age are not available. Estimates suggest that the number of people displaced by the cyclone may have been as high as 800,000. There has been widespread devastation, with the near-total destruction of fields and shelter in areas that were directly hit by the cyclone. The cyclone-affected area of the Irrawaddy Delta covers some 23,500 square kilometers. The disaster caused widespread destruction to homes and critical infrastructure, including roads, jetties, water and sanitation systems, fuel supplies and electricity. Nargis struck just as the Delta's paddy farmers were at the very last stage of harvesting the so-called "dry season" crop, which accounts for about 25 percent of the annual production in the affected area, and destroyed several rice warehouses and their stocks<sup>11</sup>.

Cyclone Nargis caused immense human suffering and exacted a severe social and economic toll on the affected families and communities. In terms of scientific research, this also causes an enormous obstacle to the comparisons of impact on the poverty, dependency ratio, and income per capita. This is because many people died, and they were mostly the very old, the very young, and the very sick. So

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<sup>11</sup> PONJA\_Post Nargis Joint Assessment, 2008

paradoxically, the income per capita and the dependency ratio may have actually improved as a result of the cyclone, but at a huge human price.

Cyclone Nargis is expected to have had only a modest impact on GDP, resulting in lower growth in the 2008-09 fiscal years. The economic losses were estimated to be about 2.7 percent of the officially projected national GDP in 2008. The relatively high economic losses from the disaster were attributable to its impact on assets, industrial production and commerce in the largest city in the country, Yangon, as well as the devastation to the main agriculture producing region, the Irrawaddy Delta. Economic losses, concentrated in Yangon and Irrawaddy Divisions, were estimated to be around 11 percent of the region's economy. The productive assets, rice crops in agriculture, small, informal enterprise in commerce and larger firms in the industrial sectors suffered relatively larger losses in value added terms<sup>12</sup>.

When Cyclone Nargis hit the delta, the storm not only destroyed homes, fishing boats and agricultural fields, it destroyed livelihoods. About 200 million working days for laborers are likely to have lost their jobs. Job losses are largely in such informal sectors as seasonal jobs in agriculture, short-term jobs in the community work, small-scale fishing, rice mills, fish processing, salt production, wood cutting, and other resource-intensive economic activities. Now in the rehabilitation and recovery period, the sources of income which are available to people in the heavily affected areas have changed dramatically. Figure 1.1 illustrates the shift in occupation before and after Cyclone Nargis.

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<sup>12</sup> PONJA\_Post Nargis Joint Assessment, 2008



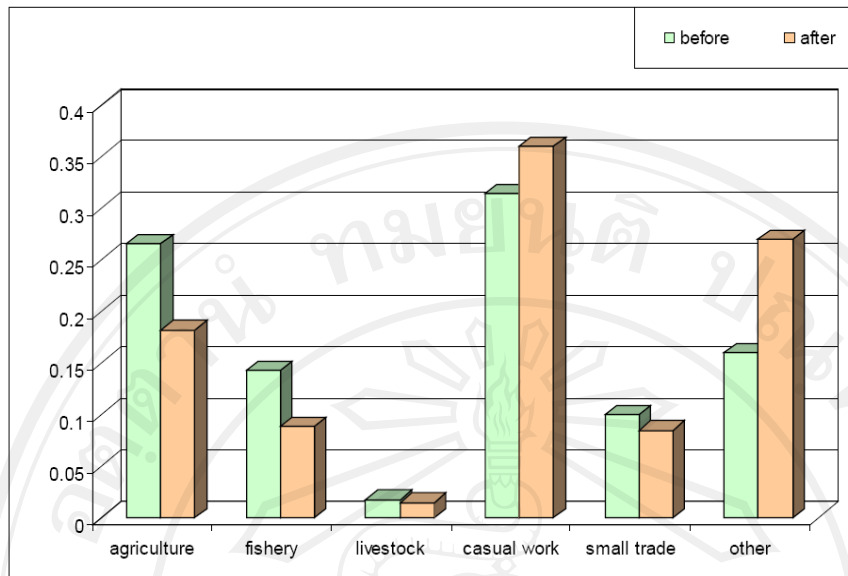


Figure 1.3 The shift of Occupations Before and After Nargis

Source: PONJA Report, July 2008

Cyclone Nargis caused extensive damage and loss of livelihoods, employment and income of the people living in the affected areas of the coastal zone, pre-urban areas. Since poor people live in these zones and depend upon the livelihoods, their living standards were expected to be severely damaged by the cyclone. Small-farm holders, communities depend on the small-scale inshore and offshore fishing, landless poor households depend on wage-labor in agriculture, and skilled workers previously employed in a wide-range resource-based small and medium scale of manufacturing and processing firms lost income earning opportunities for a substantial period. Job losses fell largely in the informal sector, notably in seasonal jobs in agriculture, short-term jobs in such as casual laboring, small-scale fishing, rice mills, fish processing, salt production, wood cutting, and other resource-based economic activities.

A large number of informal enterprises and small and medium enterprises have also been damaged. Small-scale industrial and manufacturing sectors such as metal works, boat building, wood processing, furniture making, brick making also were destroyed.. A large number of salt farms have been damaged in the delta area. In the commerce sectors, mostly trading shops have been completely or partially damaged. The cyclone destroyed the livelihood assets (equipment, tools and inventories) and income of the self employed in micro trading, handicraft, water transport service and a wide range of trade services.

The research areas, Pyapon Township and Bogalay Township were selected because of the difference in the level of damaged by cyclone Nargis.<sup>13</sup> While Pyapon was classified as slightly damaged, Bogalay experienced heavy damage to its environment and infrastructure. The two townships are located in Irrawaddy Division, Basin of Irrawaddy River and are famous for their paddy production. It has been two years since the Nargis catastrophe. Many research questions must be addressed in order to understand, prevent and diminish the negative consequences of such disasters in Myanmar and elsewhere. These questions include:

1. Is two years enough for a heavily affected area to catch up economically with a slightly affected area?
2. Do the people in both types of areas still lack basic needs?
3. What are the economic and employment possibilities for residents of the two areas?

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<sup>13</sup> A detailed rationale for the choice of these two areas will be given in chapter 3

4. Are households from the two areas who live under the poverty line still relatively happy?
5. What policy recommendations can be made for national, state, local officials, civil societies and farmers to improve the living standards of the population?

#### **1.4 Goal and Objectives of the Study**

The overall goal of the study is to infer, using two study areas differently affected by cyclone Nargis, the impacts of the cyclone on physical well-being, income, income distribution, happiness and social networking; as well as to make policy recommendations for the alleviation of some of the worst effects of the cyclone. The word “infer” is used rather than “measure” because there was no baseline study of the hard-hit area Bogolay before Nargis hit. The slightly affected area Pyapon is therefore used as a counterfactual benchmark for the “before” situation.

In order to achieve this overall goal, we have set the following specific objectives:

- i. To portray the profiles and characteristics of small farm households using income/consumption, health, education, and empowerment-related poverty indicators in two areas of Myanmar differently affected by Cyclone Nargis.
- ii. To establish an accurate poverty line by means of the Cost of Basic Needs Method.
- iii. To assess and compare the relative poverty conditions, using the Gini, Thiel, and Foster\_Greer\_Thorbecke coefficients, of small farm households in the two study areas.

- iv. To estimate, explain and test the significance of the levels of objective and subjective well-being access by respondents in both study areas.
- v. To make recommendations to local and national governments, to NGOs, and to the affected communities themselves as to how to reduce absolute poverty, and anticipate, protect against, and reduce the impacts on the well being of such natural disasters.

### **1.5 Structure of this thesis**

Chapter 1 introduces the background of the research sites in terms of geography and socio-economic indicators. It also lays out research problem, its significance and research objectives. Chapter 2 will present the conceptual framework and review of the literature of subjective well being and about disasters. Chapter 3 will explain the methods of data collection used for this research and will clarify the analysis process of the quantitative data collected. The research findings, including empirical results, descriptive statistics, statistical tests and happiness level of residents in the research area, will be presented in the Chapter 4 and 5. Chapter 6 is for the conclusion and recommendations.

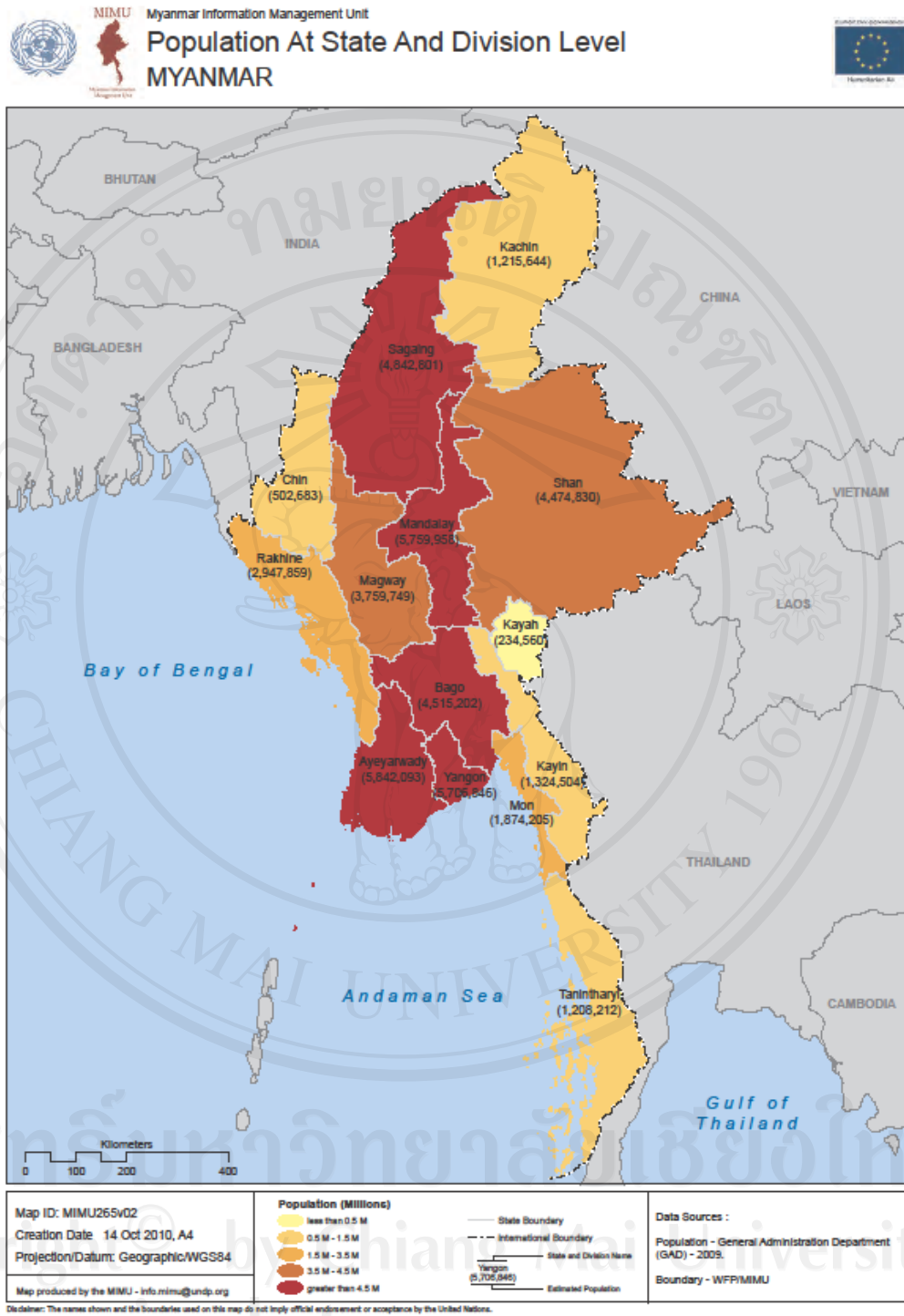


Figure 1.4 Population at state and division level of Myanmar

Source: MIMU \_ Myanmar Information Management Unit

www.themimu.info





Figure 1.5 Map of Myanmar with neighboring countries

Source: United Nations Office for the Coordination of Humanitarian Affairs –

Relief Web (<http://www.reliefweb.int>)

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