



**Livelihood in the Coastal and Midland Livelihood Zone  
Lembata District  
A household Economy Assessment  
In The Lembata District  
Province of East Nusa Tenggara  
Indonesia**

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## **1. Foreword**

### **1.1 Project Context**

The Lembata District is one of the districts in the Province of East Nusa Tenggara, known as the area vulnerable to recurrent multi disasters, such as drought and strong winds, causing crop failure. For years, the people experience such conditions and many organizations have shown their concern to resolve this situation. Drought is an issue, which is closely related to the overall situation in East Nusa Tenggara. It always occurs every year and causes chronic food insecurity. Even though many assessments, researches, efforts, and projects have been conducted, the problem has still not yet been solved.

For many years, Oxfam GB in Indonesia has been involved and has assigned resources to contribute towards solving such problems. Presently, Oxfam GB's Humanitarian Office in Indonesia, through PRIME Project, with its partner, Flores' Institute for Resources and Development (FIRD), is undergoing a program called Community Based Disaster Risk Reduction in the villages of Labanobol, Paubokol, and Bakalerek, which are in the district of Nubatukan, Lembata district. This project is carried out directly by members of the FIRD, namely the Yayasan Bina Sejahtera

There is a need to understand the effect of the drought in Lembata at the household level, what people do to overcome it, and what can Oxfam or other actors can do in the end in the context of reducing the risk of disaster, to assist the people to face the drought problem in a better way. An in-depth analysis of the situation is needed for this reason. In this regard, an approach base on households will be used to ensure a comprehensive understanding of the household situation, which is analyzing from the point of view of food, income, and expenditures. The Household Economy Approach or HEA will be used as a working framework for data gathering and analysis, to compile basic information. From this point, it is expected to be able to develop a better understanding on how disasters (drought) affect the people in the livelihood area under assessment.

### **1.2 The Objective of the Household Economy Approach**

The objective of this approach is to:

- Produce a database of household economies to support the project of a Community Based Disaster Risk Reduction in three villages in the Sub-district of Nubatukan, and also to support the Oxfam Emergency Response Team with regard to preparedness

- Quantify the affect of drought at various levels of wealth groups in one livelihood area.
- Determine the possible support mechanism for Oxfam to become involved.
- Capacity building for Oxfam GB, Oxfam Australia, and partners, in utilizing the Household Economy Approach as an analysis framework

### 1.3 Methodology

Information in thus assessment will be gathered using the Household Economic Approach (HEA). Save the Children UK first developed this framework in the 1990s<sup>1</sup>. The technique used in determining the zone, village, and group to be included with a certain wealth level, is a technique known as purposive sampling. Focused group discussions are conducted using a list of important questions, in the data gathering process, a continuous triangulation method is used during work in the field, and also makes use of PRA modes, such as year ranking, pair wise ranking, proportional piling and focused group discussions

HEA divides the zones based on similar livelihood and economy groups. This evaluation positions the household as an economy group unit, categorizing people into wealth groups, and correlating the understanding on how households normally cope with life, how changes will or have influenced them. HEA is in search of a coping strategy of households from various wealth groups. HEA's assessment for the Coastal Livelihood Zone is conducted in eight villages on the northern coastal zone of Lembata and three villages located in the CBDRM project, in the Midland Livelihood Zone.

Some definitions used in this evaluation are summarized below:

- **Household** is the smallest comprehensive economy unit. This is defined as a group of people, each with different abilities and needs, who mutually contribute to the economy, share food and other income. A household is often, but not always, a family.
- **Livelihood** is a number of means where households fulfill their needs from year to year, how to cope with life (or fail to cope) by using strategies during hard times.
- **A Livelihood Zone** is a zone where people, in a broad sense, have similar access patterns towards food (for example planting the same kinds of food crops, rearing the same kind of livestock, etc). These people also have similar access to the market. The livelihood style is clearly different from one zone to another. Local factors such as climate, type of soil, access to the market, etc. all effect the livelihood patterns. The

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<sup>1</sup> Informasi detail lihat 'The Household Economy Approach', Seaman J., Clarke P., Boudreau T., Holt J., Save the Children UK 2000.

first step of HEA is identifying the zones where people have the same access pattern towards food and the market.

- **Wealth Breakdown.** The place where households live is one factor that determines the options to acquire food and income. Another factor is wealth, because this is a factor that plays a large role in determining the ability of a household to maximize the use of available options in the zone inhabited. This is clear enough, for example, a wealthy household owning larger farmlands will in general produce more, so that they can maintain a higher food reserve compared to their poor neighbors. In any case, land is just one aspect of wealth, and the wealthy group is usually determined by the amount of ownership land, livestock, capital, education, skill, availability of labor, and social capital. Determining the difference in wealth groups in each zone is the next step in HEA's analysis. The result in establishing wealth groups is wealth breakdown.
- **The Reference Year** is defined as a period (usually 12 months) which is the base year of sources of information pertaining to basic data. The reference year is the year which reflects a normal condition, where people go about their daily activities in a normal fashion, or it can also be called a normal year. This means, a year when food production, the livestock mortality rate, food prices, produce, livestock, and job opportunities, in other words, everything that man depends upon, is in a state of more or less normal in that zone. The reason for determining a reference year is to allow for comparison should the situation change sharply from its normal condition. Alternatively, to analyze how changes in the future (in production, for example) can be determined when associated with the basic data.

The principle, which HEA is based upon, is that analysis of the local livelihood is important to correctly understand – at the household level – the effect of threats such as drought or conflicts or market disorders. Total crop failure may, as an example, leave a group of households poverty-stricken because it is their only source of food. Other groups might experience the opposite. They are able to survive because they have alternative sources of food and income. These alternative sources – such as livestock available for sale or families elsewhere who are willing to assist – can replace the crop failure. An effective assessment of the effect of the threat should be based on a livelihood analysis. The purpose is to investigate the effect of the threats to access of food and income in the future. From here, a decision can be made regarding what forms of appropriate intervention should be executed. The basis for this approach is a proper understanding regarding how a person who has survived in the past can provide a strong foundation to estimate future conditions.

## **2 The General Condition of Lembata**

### **2.1 Topography and geography**

The District of Lembata is one of the districts in the province of East Nusa Tenggara. This district has an area of 1,266 square kilometers (or 2.7% of the total area of East Nusa Tenggara). Part of the land is hilly (98 villages) and only a small portion is flat land (30 villages). This district is located between 8°15' to 8°45' South Latitude and 123°15' to 124° East Longitude. The boundaries of this district are the Flores Sea in the North, the Sabu Sea in the South, the District of Alor in the East, and the District of East Flores in the West.

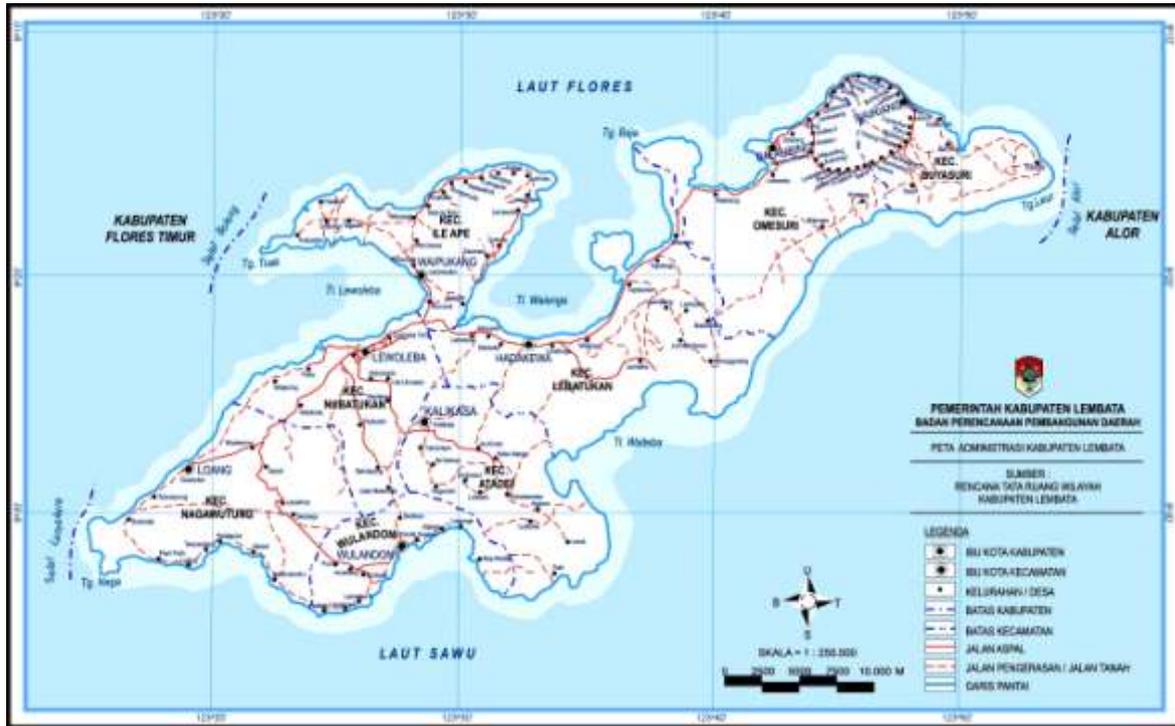
### **2.2 Climate**

Lembata has a tropical climate with an average rainfall 500 – 1,200 mm per year and 60 to 150 days of rain per year. This is the driest district in East Nusa Tenggara. In 2005, it experienced only 39 days of rain with a total rainfall of 320 mm (compare it to other districts of East Nusa Tenggara: Manggarai 3027 mm, Ngada 2672 mm, Flores Timur, 1298 mm, Kupang 960 mm, Rote-Ndao 767 mm). The relative humidity is between 72%-84%, while the minimum temperature is between 20°-24°C and the maximum temperature is between 30°-33°C. This area experiences an average of 2 to 4 rainy months (between December until March) and 8 to 10 months of aridness (between April and November). According to the Schmidt-Ferguson classification, Lembata is classified as E and F. E means that this is a relatively dry area with savanna forest plants. F means that this area is a dry area with savanna forest. According to the Oldemann Classification, Lembata is classified as D4 and E4. D4 means that it is only possible to plant rice or spices/seasoning plants in this area and it depends on the availability of water. E4 means that this area is too dry and that it is only possible to plant spices only once a year and depending on the rainfall<sup>2</sup>.

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<sup>2</sup> Agriculture Faculty Team, University of PGRI, Kupang in cooperation with BAPPEDA, District of Lembata, *The potetial of Developing Agribusiness of Superior Farm Commodities in the District of Lembata*

**Map 1: The Map of the Lembata District**



### 2.3 Population

The majority of the population of Lembata originates from two major ethnic groups, which are the Lamaholot and the Kedang. Other inhabitants come from other ethnic groups in Indonesia. The population is 107,082 and the ratio between male and female is 46%: 54%, with a growth rate of 2.88 (1.87 for the province of East Nusa Tenggara). The total number of households is 27,324 with an average of four persons per household (5 for the province). The density of the population is 80 persons per square kilometer. The population data per sub-district can be seen in Table 1 below<sup>3</sup>.

**Table 1: The Population and Households in the District of Lembata by Sub-district**

No	Sub-district	Village	Area (KM <sup>2</sup> )	Male	Female	Total	House holds	Members per Household	Population Density
1.	Buyasuri	19	104.26	8,535	10,525	19,060	4,488	4	183
2.	Omesuri	20	161.91	7,919	8,663	16,582	3,816	4	102
3.	Lebatukan	15	241.9	3,713	4,764	8,477	3,289	3	35
4.	Ile Ape	22	135.12	6,737	8,643	15,380	4,007	4	114
5.	Nubatukan	14	165.64	10,962	12,029	22,991	5,423	4	139

<sup>3</sup> Central Bureau of Statistics, Lembata based on 2006 figures.

6.	Atadei	13	150.42	3,412	4,269	7,681	2,093	4	51
7.	Nagawutung	13	185.7	3,929	4,448	8,377	1,953	4	45
8.	Wulandoni	12	121.44	3,824	4,710	8,534	2,255	4	70
	<b>TOTAL</b>	<b>128</b>	<b>1,266.39</b>	<b>49,031</b>	<b>58,051</b>	<b>107,082</b>	<b>27,324</b>	4	85

Source: Central Bureau of Statistics, Lembata based on 2006 figures.

## 2.4 Livelihood

The main livelihood of the people of Lembata in general is farming. A majority of the population are subsistence farmers whose main objective is to fulfill individual consumption. The main food crops are corn, sweet potatoes, dry field rice, other edible root plants, and beans. Aside from food crops, another farming activity is the production of cash crops. Cash crops planted by the inhabitants are candlenuts, cashew fruits, coconuts, tamarind, and coffee. These cash crops are a meaningful contribution to the income of households.

Livestock is something inseparable from the livelihood of households. The people rear livestock for reserve purposes, for occasions involving traditional ceremonies (weddings, bereavements, and other ceremonies), when crisis occurs, and very little is consumed individually. The people's livestock usually consist of pigs, goats, chicken, and horses.

Although Lembata is surrounded by sea, only a few of its inhabitants derive benefit from it as a main source of livelihood. Only a small number of people in certain coastal zones are dependent on the sea. Another source of income for the people of Lembata is providing labor, within the island or outside the island, and even overseas; weaving in some areas is an activity, which provides an alternative source of income. Aside from that, there are those who are self-employed, such as opening kiosks, providing transportation services by motorcycle, etc.

## 2.5 Market

The livelihood of the Lembata people is supported by activities in the trading of goods and services. In Lembata, the markets, which are arenas for the trade of goods, are mostly located in the coastal area. This is because transportation access to other areas is more open here, however not all villages have markets.

**Tabel 2: Daftar harga pasar beberapa jenis barang, September 2007**

Jenis barang	satuan	setara	Harga (Rupiah)
Jagung	kg		3,000
Beras jagung	rantang	7 ons	5,000
Jagung titi	rantang	6 ons	10,000
Beras	kg		4,300-5,000
Ubi kayu	kumpul	5 kg	5,000
Ubi jalar	kumpul		1,000
Kacang tanah	rantang	8 ons	10,000
Kacang hijau	rantang	8 ons	5,000
labu kuning	buah	8 kg	5,000
Telur ayam ras	papan	30 butir	25,000
Telur ayam kampung	kumpul	3 butir	2,000
Daging babi	kg		20,000
Daging sapi	kg		35,000
Gula pasir	kg		8,500
Kayu bakar	ikat		2,000
Ikan kering	kumpul	3 ons	15,000
Ikan basah	kg		30,000
Kemiri	kg		6,000-10,000
Asam	kg		1,500-2,000
Mete	kg		5,000
Ayam jantan	ekor		50,000
Ayam betina	ekor		20,000
Sarung tenun	lembar		95,000-100,000

Sumber: survey pasar, September 2007

Markets are mainly located in every sub-district capital or villages, which have easy transportation access to other areas. Market activity is usually conducted weekly, and some markets are open once in two weeks. The main market in the district capital (Lewoleba) is active everyday (but mostly crowded on Mondays). On Fridays and Sundays, there is no market activity (except for the main market). This is because those days are reserved for religious activities (Friday for Muslims and Sunday for Christians). Market day is also usually used by people to visit other areas, because it is during this time that transportation is abundant.

The people and traders also visit markets in the coastal area from various livelihood zones. The main commodities of the coastal zone that is usually traded are, among others: fish (fresh or dried), salt, beans, candlenuts, tamarind, cashew fruit, fermented fruit juice, etc. The main commodities from the uplands are products (corn, rice, candle nuts, and other spices). Prices of some of the commodities usually traded in the market can be seen in Table 2.

The market also provides other foodstuff, produced in Lembata or elsewhere. Rice, sugar, cooking oil, flour, and manufactured goods are usually brought in from outside of

Lembata, from Surabaya, Makasar, or even Kupang. In this market as well, the community can obtain various household needs such as soap, kerosene, household utensils, and clothing.

Goods produced in this area sold outside of Lembata are cash crops (for example candlenuts, tamarind, cashew nuts, copra). The major markets for these products are Surabaya and Makasar. The people normally sell these cash crops to collectors at the market or to collectors who come to the villages. These collectors then sell the goods to wholesalers in the district capital, or sold directly to ships in port. There are also collectors who are direct representatives of wholesalers. These wholesalers are the ones who sell the goods to buyers in Surabaya and Makasar. The people do not comprehend the commodity price determination, and just follow the price determined by the collectors. The prices of the commodities are also influenced by the distance with the district capital. For instance, in the area of the Omnesuri and Buyasuri districts, the price of candlenut is IDR.6, 000 per kilogram. The price in Lewoleba is IDR10,000 per kilogram. These areas are located 3 to 4 hours by car to the east of Lewoleba; meanwhile the roads are in very poor condition.

Besides the trading of goods by using cash, the people of Lembata still practice the trading of goods by barter. The unit of exchange used is one, which has been agreed upon, handed down from ancestors. Goods exchanged by barter usually are produce, sea products, and services. The barter exchange also experienced some adjustments, for example, when a service in wood cutting using a chain saw was introduced, the exchange value for this service was thus determined. Manufactured goods, (clothing, farming equipment, household utensils, etc) are usually exchanged for cash. The unit of exchange for barterers can be seen in table 3.

**Tabel 3: Nilai Tukar Barter di Pasar Roho, Tokojaeng, dan Wulandoni, Lembata**

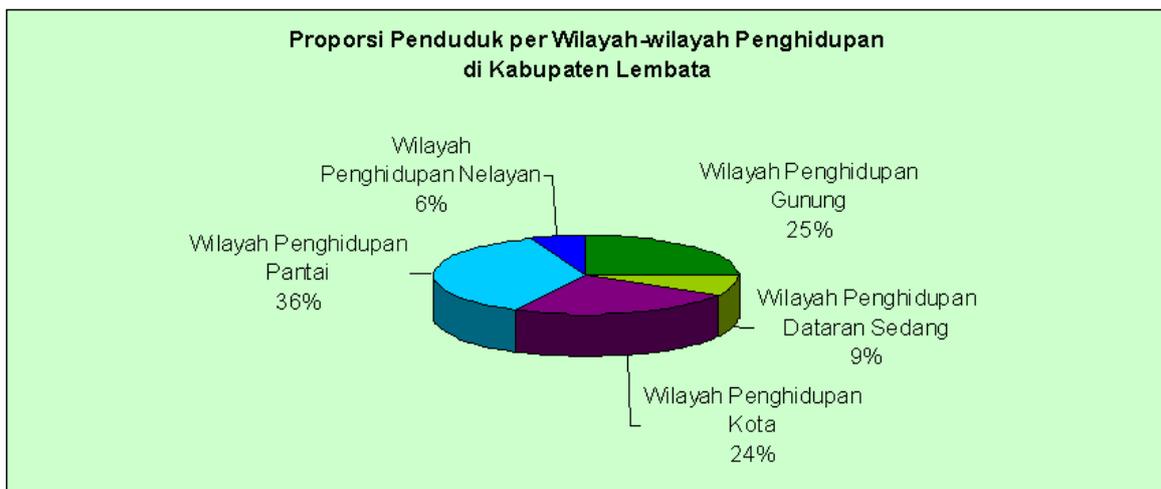
<p><b>Ikan Kering</b> 1 ekor ditukar dengan:</p> <p>Jagung 5-10 tongkol</p> <p>Pisang 10-15 buah</p> <p>Kacang tanah 1 mug</p> <p>Sirih 1-20 buah</p> <p>Pinang 10-20 buah</p> <p>Kelapa 2 buah</p> <p>Kacang hutan 2 mug</p> <p>Tembakau 1 genggam</p> <p>Ubi jalar 10-15 buah</p> <p>Gaplek 15-20 buah</p> <p>Jeruk manis 3-5 buah</p> <p>Tuak 1 botol/liter</p>	<p><b>Garam</b> 1 sumper dapat ditukar dengan</p> <p>Jagung 10-15 tongkol</p> <p>Nenas 1 buah</p> <p>Sirih 10-15 buah</p> <p>Pinang 10-15 buah</p> <p>Advocat 1-2 buah</p> <p>Sawi 1 pohon</p> <p>Tomat 1 mug</p> <p>Pisang 10-15 buah</p> <p>Ubi jalar 10-15 buah</p> <p>Kacang hutan 1 piring</p> <p>Jeruk manis 3-5 buah</p> <p>Kangkung 2 ikat</p>
<p><b>Jagung</b> 10 tongkol ditukar dengan:</p> <p>Pisang 1 sisir</p> <p>Sirih 10 buah</p> <p>Pinang 10 buah</p> <p>Tembakau 1 genggam</p> <p>Kelapa 2 buah</p> <p>Pinang 10 buah</p> <p>Tuak 1 botol</p>	<p><b>Minyak tanah</b> 1 botol ditukar dengan:</p> <p>Kelapa 3-5 buah</p> <p>Jagung 10 tongkol</p> <p>Tarum 3 ikat</p> <p>Kacang tanah kulit 2 rantang</p>
<p><b>Jagung</b> 50-100 tongkol ditukar dengan:</p> <p>Ayam 1 ekor</p>	<p><b>Gula pasir</b> Rp. 1000 ditukar dengan:</p> <p>Kelapa 3-5 buah</p> <p>Tarum 3 ikat</p>
<p><b>Jagung</b> 100-200 tongkol ditukar dengan:</p> <p>Anak babi 1 ekor</p>	<p><b>Korek api</b> 1 buah ditukar dengan</p> <p>Kelapa 2 buah</p> <p>Jagung 2 tongkol</p>
<p><b>Jagung</b> 300-500 tongkol ditukar dengan:</p> <p>Babi (sedang) 1 ekor</p>	<p><b>Tukang batu/kayu</b></p> <p><b>1 rumah permanen</b> dibayar dengan</p> <p>babi besar 2 ekor</p> <p>Gelang gading 5 buah</p> <p>Sarung adat 2 lembar</p> <p>Gading 1 batang</p> <p><b>1 rumah semi permanen</b> dibayar dengan</p> <p>padi 140 rantang</p>
<p><b>Pekerja kebun</b> (1 orang/hari) dibayar dengan:</p> <p>Jagung 50 tongkol</p> <p>Padi 2 rantang</p> <p>Ubi kayu 5 pohon</p> <p>Pisang 1 tandan</p> <p>Kelapa 10 buah</p> <p>Ikan 10 ekor</p> <p>Ayam 1 ekor</p>	<p><b>Potong kayu</b> dengan chain saw:</p> <p>1 pohon besar dengan 1 ekor babi/kambing besar</p> <p>kebutuhan 1 rumah dengan 1 lembar sarung adat</p>
<p><b>Tenun sarung biasa</b> 1 lembar ditukar dengan:</p> <p>Jagung 300-500 tongkol</p> <p>Padi 50 rantang</p>	

**Sumber:** P. Nong Susar, JM. Sidhu, K. Penate, *Ekonomi Barter Lembata di Tengah Arus Deras Pasar Bebas*. Jakarta: YAPPIKA, 2003

### 3 The General Condition of the Livelihood Zone in Lembata

The differences in the livelihood styles among the zones are based on discussions with government officials of the district of Lembata (the Bureau of Fishery and the Bureau of Agriculture), NGOs, and the community. It is known that 66% of the Lembata population inhabits the coastal zones. Others live in the uplands, there are about 9% of the population living in the midlands and 25% live in the mountains,

**Graphic 1: The Proportion of Population per Livelihood Zone in the District of Lembata**



Sumber: Lembata dalam angka 2005, diolah

The district of Lembata, if segregated based on the source of livelihood can be divided into 5 main livelihood zones, namely: the Urban, Upland, Midland, Coastal, and Fisherfolk livelihood zones. The proportion of the population per zone is seen in Graphic 1 above.

### 3.1 The Urban Livelihood Zone

This zone has a livelihood characteristic that is very complex compared to other livelihood zones, in line with the diverse background of the people living in this zone. There are people who depend themselves on farming, fishing, and there are those who depend themselves on the service sector (being a builder, seaport labor, a public servant or a private sector employee), and trading. This urban zone has a higher population density compared to other zones. A large part of a city area is located near the coast, seaport, or the center of government district). From an ethnic point of view, this zone has a more diverse ethnic composition compared to other livelihood zones. About 24% of the population of Lembata lives in this zone.

### 3.2 The Upland Livelihood Zone

This zone is located close to the mountaintops or hills, or more than 500 meters above sea level. The people's main livelihood in this zone is farming both food crops and cash crops. The main food crops developed in this zone are corn, dry field rice, sweet potatoes, and other edible roots). Meanwhile, the main cash crop in this zone is candlenut. Some other zones can produce coffee or vanilla. This zone usually still has forests, so that the inhabitants also have the opportunity to obtain crops from the forest such as edible roots and wood. The livestock usually reared are pigs, goats, and chicken. There are about 25% of the populations of Lembata who live in this zone.

### **3.3 The Midland Livelihood Zone**

The midland zone, which is located between the upland and the coast, is occupied by around 9% of the total population of Lembata. The physical characteristic of this zone is that the land is hilly. The people living in this zone also depend their livelihood on the farming sector. The main food crop in this zone is dry field rice and corn. Aside from that, the people also plant sweet potatoes and other edible roots, beans, and bananas. Meanwhile, the main cash crops are candlenuts, coconuts, and cashew fruits for the lower zones. This zone also produces fruits such as pineapple and banana, which contributes to the income. Pigs, goats, and chicken are the livestock usually reared by the people. Cows and horses are seldom raised.

The inhabitants of this midland zone usually have access to fields in the zone above them. This is because their ancestors came from the mountain region. This can be seen from the existence of old villages in the upland. Alternatively, many families in this zone own land in the upland.

### **3.4 The Coastal Livelihood Zone**

The coastal livelihood zone is located along the coastline. The inhabitants of this zone depend their livelihood on farming. Very few people in this livelihood zone become anglers. The main food crops in this zone are corn, sweet potatoes, and beans. The main cash crops in this zone are tamarind, cashew fruit, and candlenuts (for higher elevated zones). Some zones are beginning to cultivate seaweed. Livestock, which are usually owned, are pigs, goats, and chicken. There are around 36% of the populations who live in this livelihood zone.

### **3.5 The Fisherfolk Livelihood Zone**

The meaning of a fisher folk zone is a zone where the people determine the sea as their main source of livelihood. Catching fish is the source of their livelihood. Usually, the inhabitants do a little farming – not as much as the people living in the midland or upland do. The number of people living in this livelihood zone is the smallest, only 6% of the total population.

### **3.6 Choosing a Livelihood Zone**

In assessing this situation, the zone chosen to be the centre for evaluation is the coastal zone. This zone is the most populated and is a zone, which is very vulnerable to the main threats to this zone, which are drought and strong winds. Aside from that, the assessment

of this situation is also conducted IDSB 37 project zone, which, based on its position, can be grouped into the midland livelihood zone.

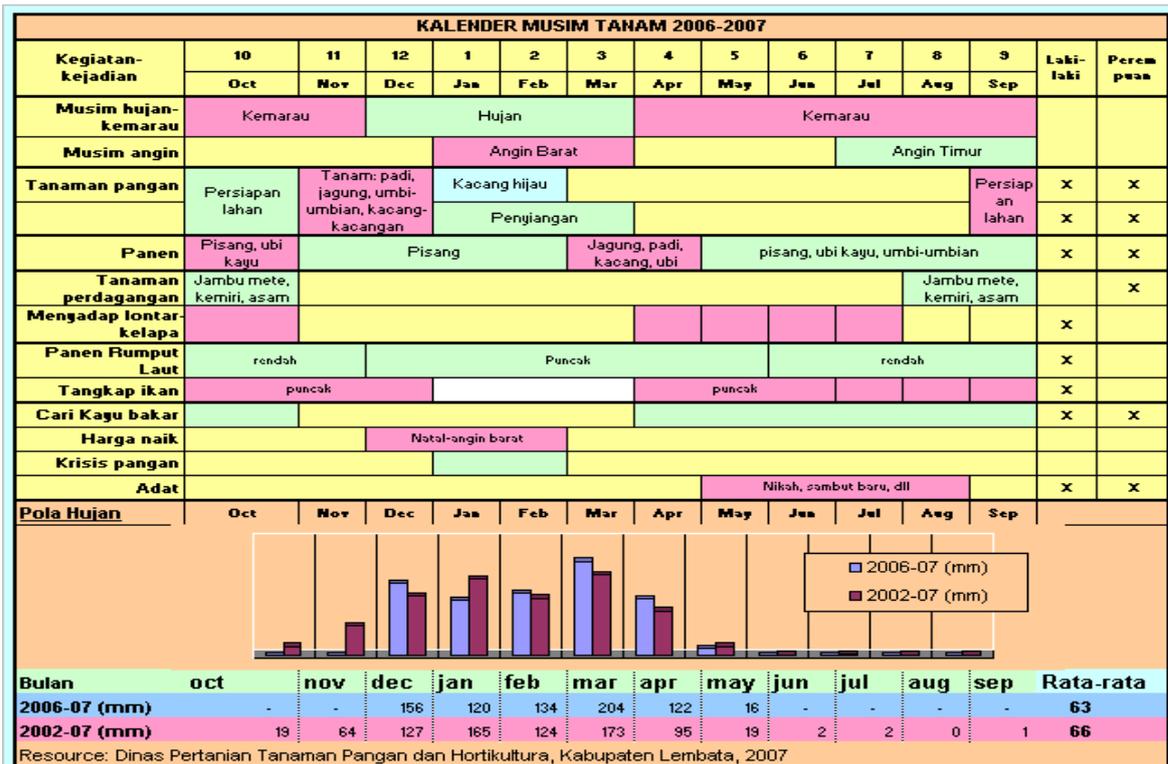
#### **4 The Reference Year and the Seasonal Calendar**

The reference year, as explained earlier, is the year used as a base year when sources of information are gathered. The reference year in this evaluation is the planting season of 2007, because the community and other actors (government officials and NGOs) consider it as a normal year. In this year, the climate (rainfall and winds) and farm production is considered as other normal years.

The seasonal calendar of 2007, which started in October 2006 - September 2007, can be seen in Graphic 2. The seasonal calendar for the Coastal Livelihood Zone starts at the beginning of the planting season, which is the field preparation period. The graphic can provide a general picture of the livelihood cycle of any livelihood zone in Lembata because Lembata has almost the same climate cycle. The distinction is the special character of the zone. For example, the coastal livelihood zone, this has access to the sea. The people in this zone are familiar with the fish catching calendar or utilizing other marine resources. Nevertheless, this case can also be used as a reference to the inhabitants of the higher zones for the time to acquire marine products through trade.

The community occupying the coastal livelihood zone usually begin the planting season by preparing the fields starting in October, and they will start earlier, (August or September) if they open new fields. This preparation is carried out by cleaning the fields of bushes, cutting down trees, or trimming tree branches.

Graphic 2: Planting Season Calendar, 2006-2007 Coastal Livelihood Zone, Lembata



After cleaning the fields, the land is turned over and will be planted as soon as the first rain falls. Now, farmers are having difficulty in determining the exact time to plant because the climate is becoming difficult to predict. Presently, it is felt that the first rainfall will not necessarily be followed by sufficient rain for the plants to be ready for harvest. The people are not able to determine when this irregularity in the climate started. From the rainfall data prepared by the government during the period of 2002-2007, on the average, rain started to fall in October and ended around May. The wind factor also accounts for the success of harvest. When rain is sufficient, it is usually followed by strong winds, which can destroy the food crops as well as the cash crops. Coastal zones, which are at a higher level usually, suffer the most due to these strong winds. The windy season also diminishes the opportunity of the people to harvest the riches of the sea, due to large waves, preventing them from catching any fish, oysters, harvest any cultivated seaweed.

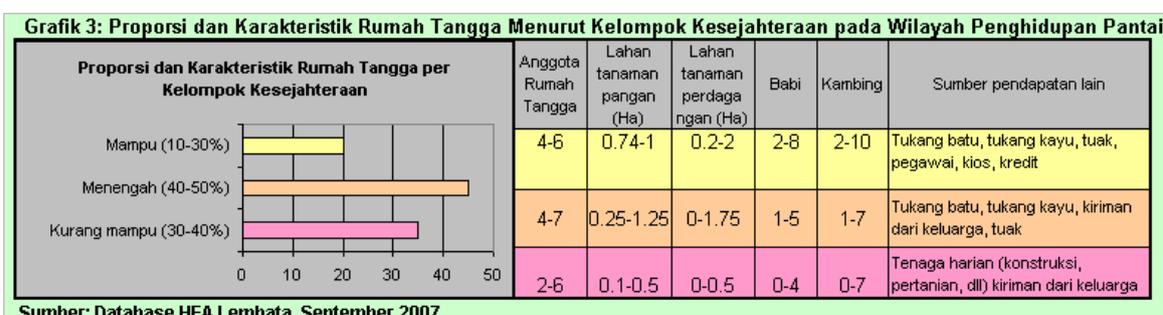
The main food crops for the coastal zone are corn, sweet potatoes, and beans. The harvest period for food crops falls around March. Sweet potatoes usually can be harvested between one to two planting season periods. This depends on the soil condition and amount of rainfall. Sweet potatoes are usually harvested in the dry season. The farmers do not harvest sweet potatoes during the rainy season, because it will ruin the taste, sometimes tough and bitter.

January and February is a vulnerable period when food insecurity may take place, because reserves have diminished significantly. The period after the harvest is a period of “traditional ceremonies”, which absorbs the income of the people. During this time, there are wedding ceremonies, the first mass, and other traditional ceremonies.

## 5 The Coastal Livelihood Zone in comparison with the Midland Livelihood Zone

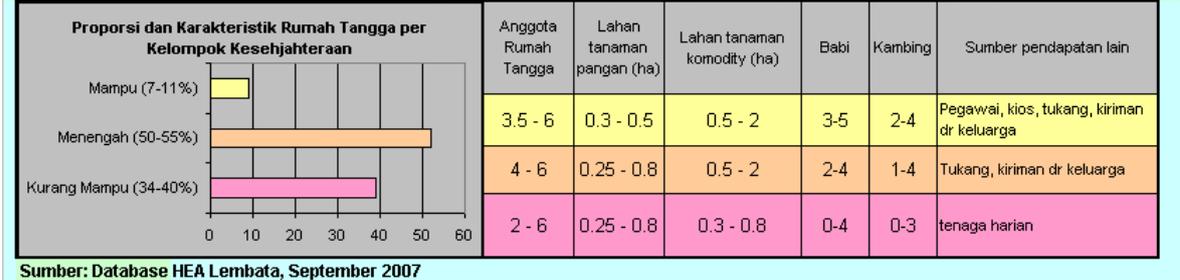
### 5.1 Wealth Breakdown

Compared with the midland livelihood zone or higher land, the coastal zone is considered the driest in Lembata. The majority of the people in this zone depend their livelihood on the farming sector, for both food as well as cash crops. Although they live in the coastal zone, households in this livelihood zone do not consider the sea as a source of livelihood. The livelihood style is also influenced by the community’s wealth level.



The community of the coastal and midland livelihoods see themselves divided into three levels of wealth, i.e.: the wealthy group, the average wealthy group, and the non-wealthy group. The main criteria used by the community in determining wealth groups are the number of productive members of a family, land ownership, assets owned (including livestock), activities outside the farming sector. Graphic 3 above provides an explanation on the proportion and characteristics of wealth levels in the coastal livelihood zone. The average wealthy group is the largest proportion followed by the non-wealthy group, and the wealthy group. This pattern is the same as the proportion pattern of wealth groups in the midland livelihood zone. However, it is different in proportion in every wealth group in both livelihood zones. Compare them with Graphic 4 below.

**Grafik 4: Proporsi dan Karakteristik Rumah Tangga Menurut Kelompok Kesejahteraan pada Wilayah Penghidupan Dataran Sedang**



## 5.1.1 The Characteristics of Wealth Groups

### 5.1.1.1 The Number of Household Members

The wealthy group households tend to have more productive family members compared to other wealth groups. These family members are usually not only the core family (father, mother, child), but can also be added with a family member or another person living in the same house and dividing the livelihood sources amongst them. Young households usually fall into the non-wealthy group or the average group. A household lead by a woman (either because she is a widow, or her husband works outside of Lembata), is usually in the non-wealthy or average group. This group has less productive workers to work their fields, and does not always receive money from their husbands who work outside of Lembata.

### 5.1.1.2 Land Holding and Ownership of Land and Farms

In the coastal livelihood zone, land ownership has a direct effect on the household farm style of each wealth group. A non-wealthy household in this zone usually owns less farmland compared to the average wealthy and the wealthy groups. To increase production of food, some of the non-wealthy households must borrow land from other wealth groups, from within or outside the village. The borrowing of land is usually paid by a profit sharing scheme. At the time of harvest, the land borrower will give one-third of his harvest to the owner of the land or in accordance with any previously agreed upon terms. When the harvest is not much or a failure, sometimes the borrower does not have to share any profits with the landowner. In this zone, the landowner is a male. When a woman becomes a widow, then the land owned by her husband becomes the property of her husband's relatives, but she still has the right to cultivate the land.

Ownership of land also has a direct effect to the ownership of cash crops of every wealth group. The larger the land, then ownership of the cash crops will increase proportionately. The lesser the land owned, the less area used to cultivate cash crops. Nevertheless, access towards cash crops remains open for the three wealth groups, even though the non-wealthy group only owns a few cash crops in its fields. This

In the midland livelihood zone, the size of a farmland owned by a household does not really differentiate the wealth level, because in this zone, land is still abundant. The factor that distinguishes the wealth level related to land ownership is the size of land capable of cultivation by a household. In addition, the number of productive family members in a household influences this.

group may access cash crops from the wealthy and average groups by working as farm labors and receive cash crops in return for their services as pickers from the owner of the cash crops. For example, for payment of services to a coconut tree climber, the climber has the right to four coconuts per tree he climbs.

#### **5.1.1.2.1 Food Crops and Cash Crops Farming**

The main food crops grown by a household in the coastal livelihood zone are corn, edible roots, and beans. These crops are planted mainly for self-consumption, and very seldom are they sold, because production is not always enough to satisfy a year's needs. The crop is sold to acquire other foodstuff. Rice has been a staple food in this zone, although this zone does not produce rice, or sometimes very little is produced locally. This variety has become a popular food crop instead of corn or other food crop such as edible roots.

In the midland zone, the main food crop planted is rice and followed by corn. Sweet potato is a last choice and furthermore, it is intended mainly for pig fodder, unlike the coastal livelihood zone, where sweet potato is the main food crop.

The main cash crops are cashew fruits, coconuts, candlenuts, and tamarind. Tamarind is usually a wild plant, not cultivated, because it happens to grow in a household's garden, the plant is rightfully owned by the owner of the land. A plant, which has an important economic value because it can significantly give income, is the *lontar tree* (*Borassus sp.*). This tree is tapped for its sap or *nira* and processed into an

The main cash crops for the midland livelihood zone are candle nut, coconuts, and cashew (particularly in the lower midland). Besides that, households also normally sell sweet potatoes, bananas, and other fruits (pineapple and mango).

alcoholic drink. One bottle (600 ml) of fermented nira is sold for IDR1.000. but after distilled, the price can reach up to IDR10.000 per bottle.

### 5.1.1.3 Livestock

Livestock generally raised by a household in the coastal zone are chicken, pigs, and goats (especially for Muslims). The community in this zone has little regard of livestock as being an indicator of family wealth. This is because of the community's perception on livestock ownership, which is oriented for traditional purposes (weddings, deaths, etc). Even so, in reality, livestock ownership actually is one of the indicators of local wealth, which plays a large role in the lives of the community. One of the reasons why livestock is raised for traditional activities is difficulty acquiring cash to purchase livestock at the time of the traditional occasion. If livestock is owned, the need for cash is not a priority.

The method of raising livestock in the midland livelihood zone is similar to that in the coastal livelihood zone, where the orientation of raising is particularly for traditional ceremonies and savings for critical times.

Utilizing livestock to carry loads is not performed, although in this zone, there are people who own horses (not many are raised)

This type of animal has a large potential for the zone to be a mode of transportation. Access to and from a part of the midland zone is still difficult since there is no support of modes of transportation/commuting (roads or vehicles).

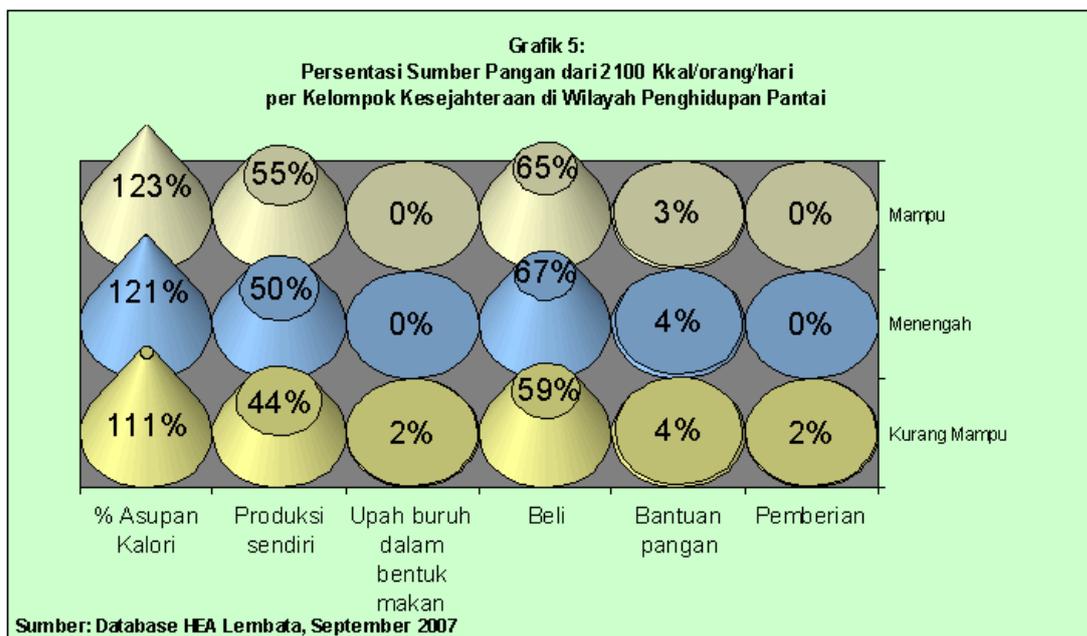
The wealthy group usually has more livestock, because they are more capable raising and feeding them. In the average wealthy group of the coastal livelihood zone, livestock is not only to consume, or to contribute to traditional ceremonies, but also, livestock is a significant source of income, which contributes towards the household income. Egg

consumption, which is a source of protein, is not too popular in the community. This is because the community prefers to hatch the eggs instead.

The practice of borrowing livestock (usually pigs), to raise and subsequently share the profits from the litter they produce are normal things. The factor that threatens the raising of livestock is disease, which can wipe out livestock entirely at the household level.

## 5.2 Sources of Food in the Reference Year

Overall, the three household wealth groups in the coastal livelihood zone have fulfilled more than 100% of its needs of 2,100 Kcal/person/day. The not wealthy group can fulfill 111%, the average wealth group 121%, and the wealthy group, 123%, as shown in Graphic 5.



The food requirement to achieve 2,100 Kcal/person/day, the households in the coastal livelihood zone fulfill it from various sources such as buying, self produce, wages in the form of food, aid, and gifts. The largest need for food is fulfilled through buying consecutively, the wealthy group, 65%, the average wealth group 67%, and 59% for the non-wealthy.

Households in the three wealth groups in the midland livelihood zone are able to fulfill more than 100% for the required 2,100 Kcal/person/day (see Graphic 6). The non-wealthy group can fulfill 109%, the average wealthy group 110%, and the wealthy group 124%.

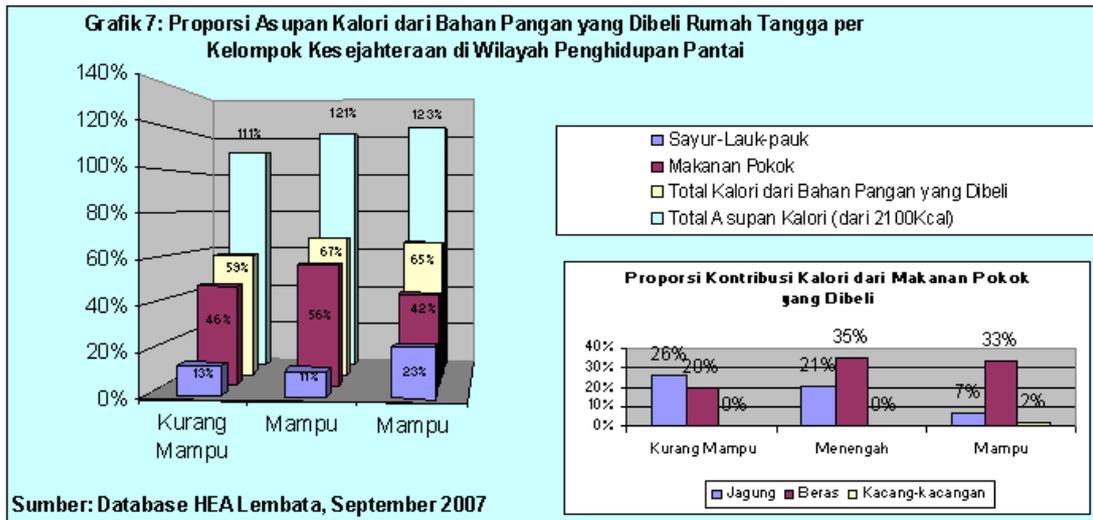
The fulfillment of food is mostly from own production (the non-wealthy group 82%, average wealthy 72%, and wealthy 101%). Other sources of food are purchased and from aid/grants. Food assistance to the non-wealthy contributes 6% from the total calorie intake. For the average and wealthy groups, the contribution is 4% and 5%.

(see Graphic 6).

In general, the main source of food bought by the community is food that contains carbohydrates, which to the non-wealthy group reaches 46% of total calorie intake. Meanwhile, for the average wealthy group it reaches to 56%, and for the wealthy group, 42%. The average wealthy group purchases more foodstuff than the wealthy group. This is because the average wealth group produces less and own smaller farmland compared to the wealthy group. (See Graphic 7).



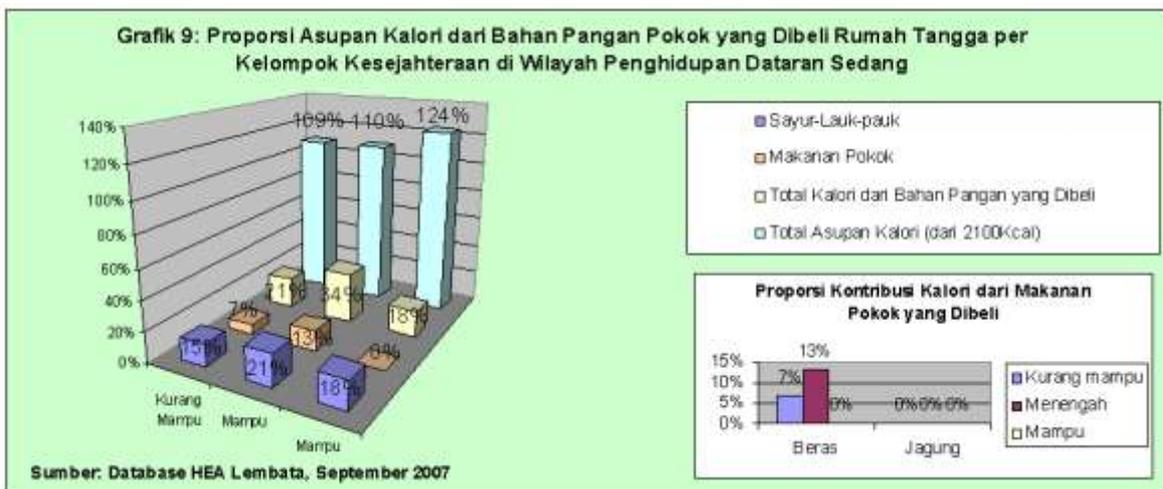
The proportion of purchase of staple food, vegetables, and others can be seen in Graphic 7. The staple food, which has the largest proportion for the non-wealthy group, is corn followed by rice. The opposite is valid for the average wealthy and the wealthy groups, where the priority is the purchase of rice. Other staples purchased are beans. Other food sources purchased are vegetables including fruit and other foodstuff (fish, meat, eggs, etc). Food source from livestock for these three wealth groups is minimal. Consumption of food derived from livestock is usually during traditional occasions.



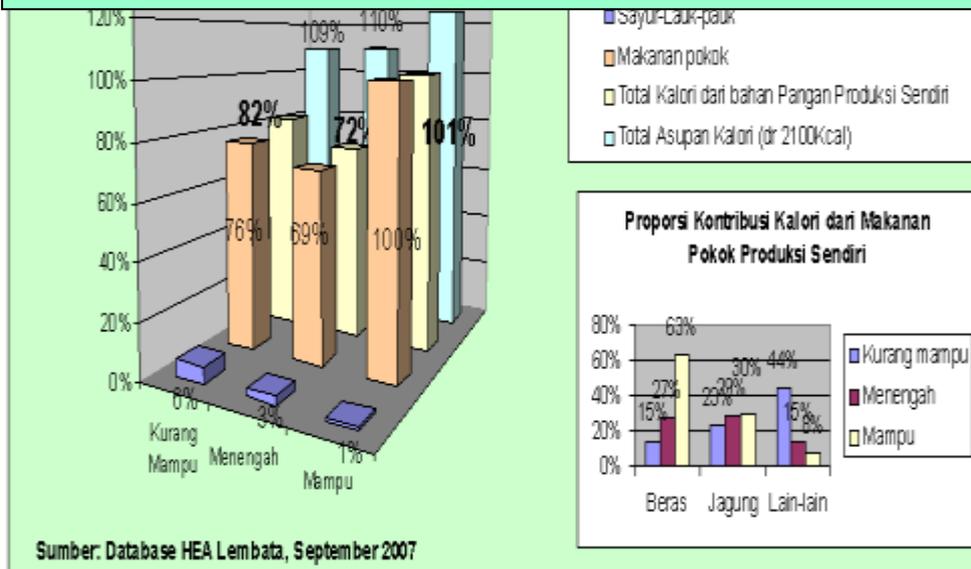
The second food source is from their production. The fulfillment of calories from their own production (food crop and livestock) for the non-wealthy group is lower than the average wealthy and the wealthy groups (44%:50%:53%, see Graphic 8).

The production of staple food contributes to a total calorie intake of 34% for non-wealthy groups, 40% for average wealthy groups, and 45% for wealthy groups. A large portion of these staple foods consists of corn, rice, edible roots, and beans. Production of rice and edible roots by the wealth group is larger than the other two groups. Edible roots are food crop, which is also a reserve food during crisis. These plants are harvested during the peak of the dry season.

In the midland livelihood zone, the staple food of the household acquired from purchasing is small. As can be seen from Graphic 9, the wealthy groups do not purchase staple food, the average wealthy purchase 13%, meanwhile the non-wealthy purchase 7%. The staple food purchased is rice.



Fulfillment needs of staple food mainly coming from own production for households in the midland livelihood zone represents a large portion (see Graphic 10). The non-wealthy group acquires 76 calorie intakes from staple foods produced on their own, the average wealthy group 69, and the wealthy group 100%. For the non-wealthy and average wealthy groups, a large portion of the staple food source is rice and corn. Meanwhile, for the non-wealthy group, besides rice and corn, they staple food which contributes to the fulfillment of calories such as edible roots.



Food assistance, in this case RASKIN (food assistance from the central government for poor families), is in third place for food sources for the three wealth groups in the coastal livelihood zone, between 3% - 4%. Not in accordance with plans, the raskin program is only for poor families, however, in actuality, it is distributed to all families, and even wealthy families receive this assistance. Based on information from local government officials, this carried out to avoid tension and to maintain harmony in the community.<sup>4</sup>

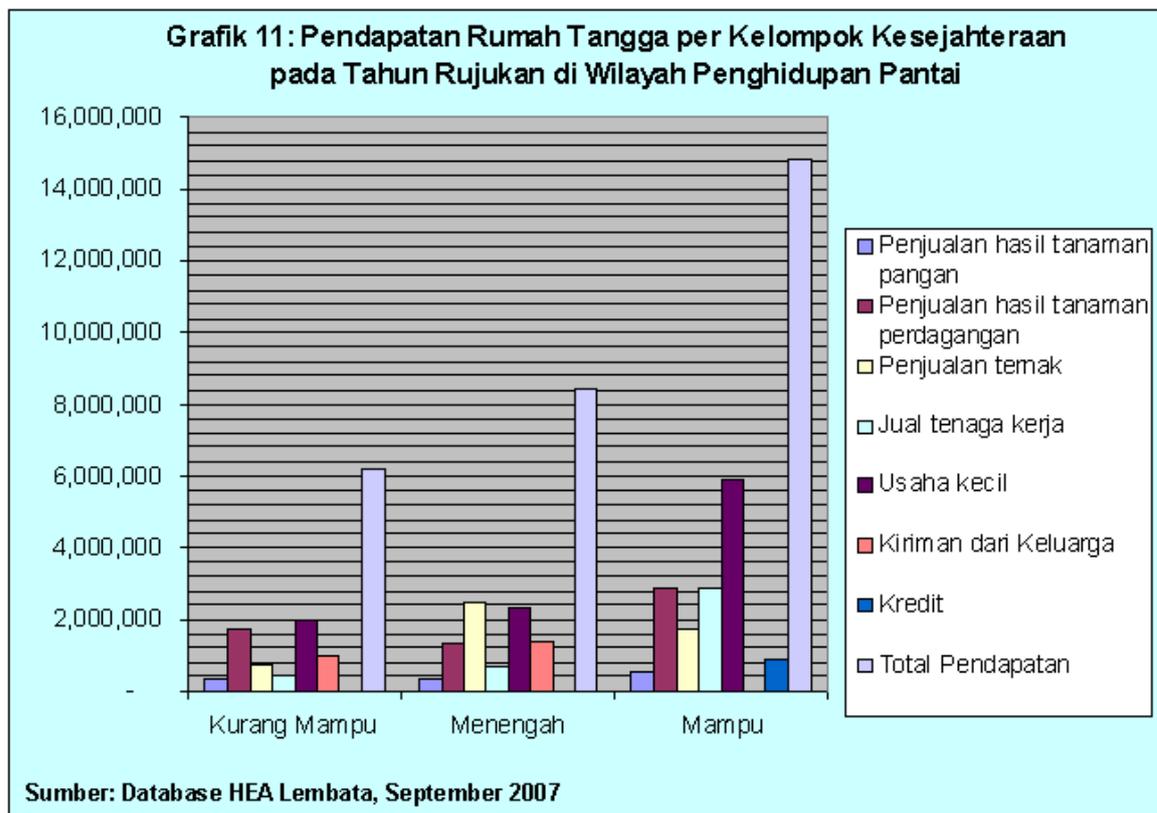
The source of food for the non-wealthy group, which is almost unavailable for other wealth groups, is aid and payment in the form of breakfast/lunch for completion of work/task.

<sup>4</sup> The Raskin Program (Rice for poor households) was launched by the government since July 1998. Until today, this program has reached out to 65% of the total under privileged population in Indonesia. One constraint is that it missed the objective. As a rule, it was planned that each poor household receive 20 kilograms of rice per month. A survey in 2003 revealed that the average rice received is 13 kilograms per month per household. (Source: the National Action Plan for Food and Nutrition 2006 – 2010, BAPPENAS, June 2007)

Corn, on an average, is the staple food largely produced by households from the three groups of wealth, then followed by edible roots, and rice. This is influenced by the condition of the soil and climate, making it impossible to produce rice – a favorite staple – on a much larger scale. The consumption characteristics in both zones tend to consume carbohydrates. This is seen from the low consumption of protein or vitamins.

### 5.3 Income in the Reference Year

There is an income difference among the wealth groups. In the coastal livelihood zone, the wealthy group's income per year is IDR14.8 million, while the average wealth group is IDR.4 million, and the non-wealthy group is IDR6.2 million. The average daily income of the wealthy group is IDR 41.000 (IDR 1.230.000/month), group IDR23,000 (IDR 700.000/month), and the non-wealthy group IDR17.000 (IDR 517.000/month). The source of these incomes are from various activities such as selling farm produce (cash crops and food crops), selling livestock, selling labor, wages, remittances from families working in other areas. There is also income from other sources, such as kiosks, transportation services, and loans, particularly to the average wealthy and the wealthy groups. An illustration of the income sources can be seen in Graphic 11 below:



The dependency of the non-wealthy and average wealthy groups on the farming sector and livestock is high. Almost 50% of the income of both groups comes from these two

sectors. The ratio of income from the farming sector against the total income of each wealth group is as follows: the non-wealthy group 33%, average wealthy 19%, and wealthy 23%. The non-wealthy group, although producing lesser food crop, but they sell at a higher proportion compare to other groups. This is because this group has a limited source of income and is less productive compared to the other groups so that the self-produced food crop is also a source of income. Further, this is because this group is unable to own productive assets (land, livestock, family members, and capital).

The wealthy group has more opportunity to secure income from the non-farming sector, where almost 70% of this group's income is from the non-farming sector. Income from selling labor from the wealthy group is also twice as much as the other two groups, because this group has more skilled people such as wood artisans, builders, and employees. Meanwhile, the non-wealthy group sells more labor in the field of farming assistant artisan.

In general, or more than 50%, the non-farming sector is a large contribution to the household of the three wealth groups. Limited job opportunities and low wages in the village, a climate that is not supportive, pests and plant disease, the low selling value of farm commodities, the high cost of fulfilling basic needs, are reasons enough for household members to seek work outside their areas, even overseas (legally or illegally) to enhance their well-being<sup>5</sup>. In their report, the FIRD found one village, which in their assessment is included in the coastal livelihood zone, where almost 50% of heads of households are women. The husbands went out of the area to work.

Income from money sent by families working outside of the area contributes to approximately 16% of the total income of the average wealthy and non-wealthy groups.

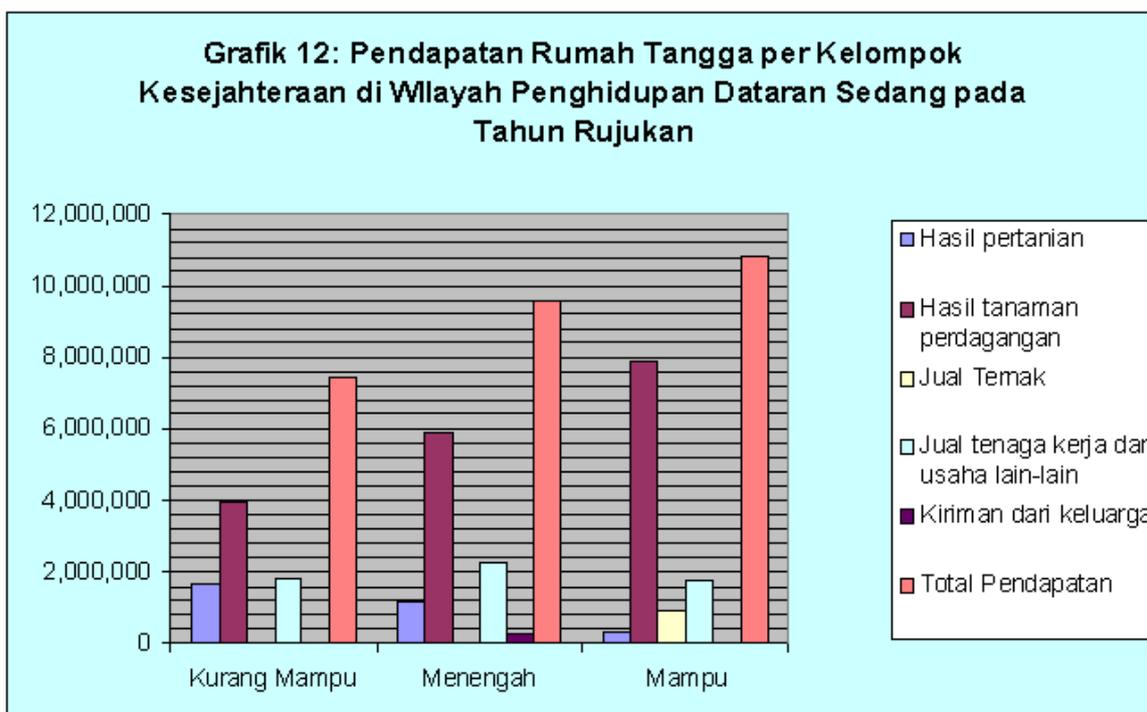
In the midland livelihood zone, the yearly average incomes of a household are: IDR 10,800,000 for the wealthy group, IDR 9,500,000 for the average wealthy group, and IDR 7,400,000 for the non-wealthy group.

The average daily incomes are: IDR 30,000 (IDR 900,000/month) for the wealthy group, IDR 26,000 (IDR 780,000/month) for the average wealthy group, and IDR 20,000 (IDR 600,000/month) for the non-wealthy group, cf. Graphic 12.

The main source of income for households comes from selling farm products, followed by selling labors and other small businesses.

The source of income from agricultural sectors (such as farm produce trading and food crops) dominates the income of households of the three groups. This sector contributes 75% for households of the three groups. Households in this area have limited access to acquire income from other sectors. Some households are working outside the area, but still their contribution to the entire income of a household is not significant. Hence, other households who are not working outside the area have more income from the agricultural sector. This could happen because they maintain their land properly and made them productive.

Other motivations to work outside of the area are to be able to build a house, to accumulate capital to start a business, and to prepare for marriage. Searching for jobs outside the area does not always enhance welfare, it also contributes to poverty. The community as non-wealthy usually classifies a household lead by a woman, because they have less productive skills to work in the farming sector. Meanwhile, the husband does not always send money home.

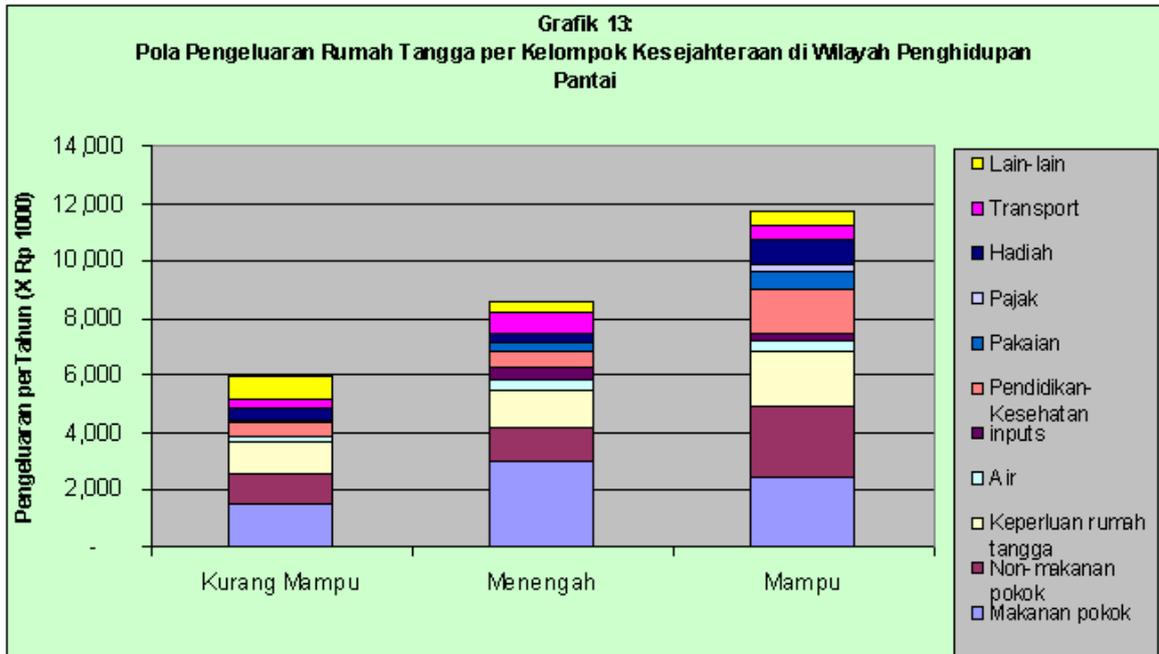


#### 5.4 Expenditures in the Reference Year

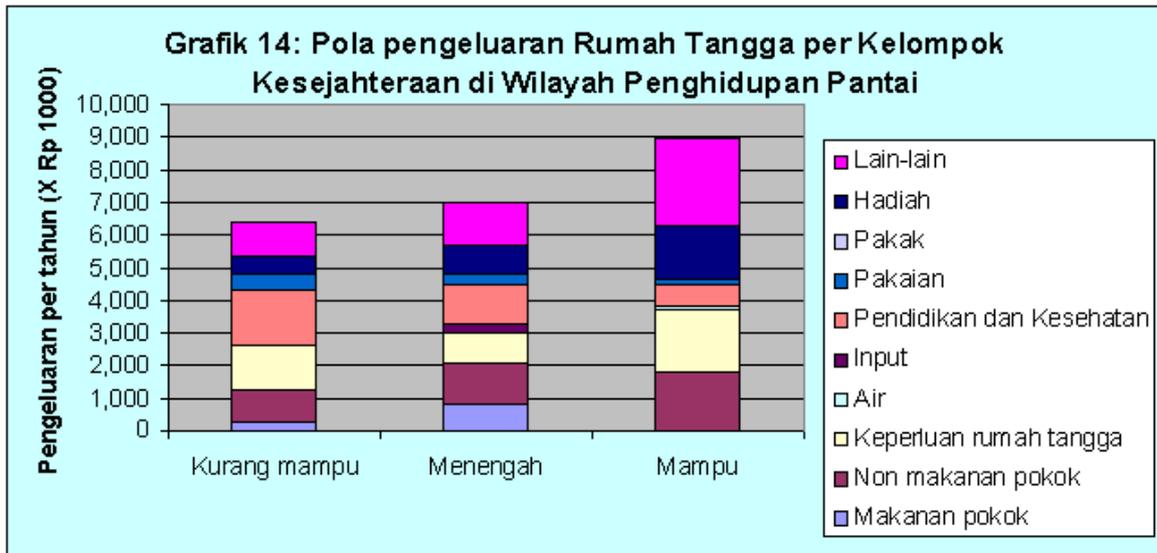
The total expenditures of households in the coastal livelihood zone increases among the wealth groups. The non-wealthy group has an expenditure of IDR6 million, the average wealthy group IDR8.6 million, and the wealthy group IDR11,7 million or approximately twice of the expenditure of the non-wealthy group. The average expenditure of a poor group is IDR500,000 per month or around IDR16,000 per day. The average wealthy group IDR700,000 per month or IDR23,000 per day, and the wealthy group IDR975,000 per month or IDR32,500 per day. In comparing the expense to the income, there is little chance for the non-wealthy and the average wealthy to establish a savings account (See graphic 13).

In the midland livelihood zone, the average yearly household expenditure of a wealthy group is IDR9,000,000. the average group IDR7,000,000, and the non-wealthy group IDR6,400,000., the average daily expenditure for the wealthy group is IDR25,000, the average wealthy group IDR19,000, and the non-wealthy group IDR17,000. (See Graphic 14).

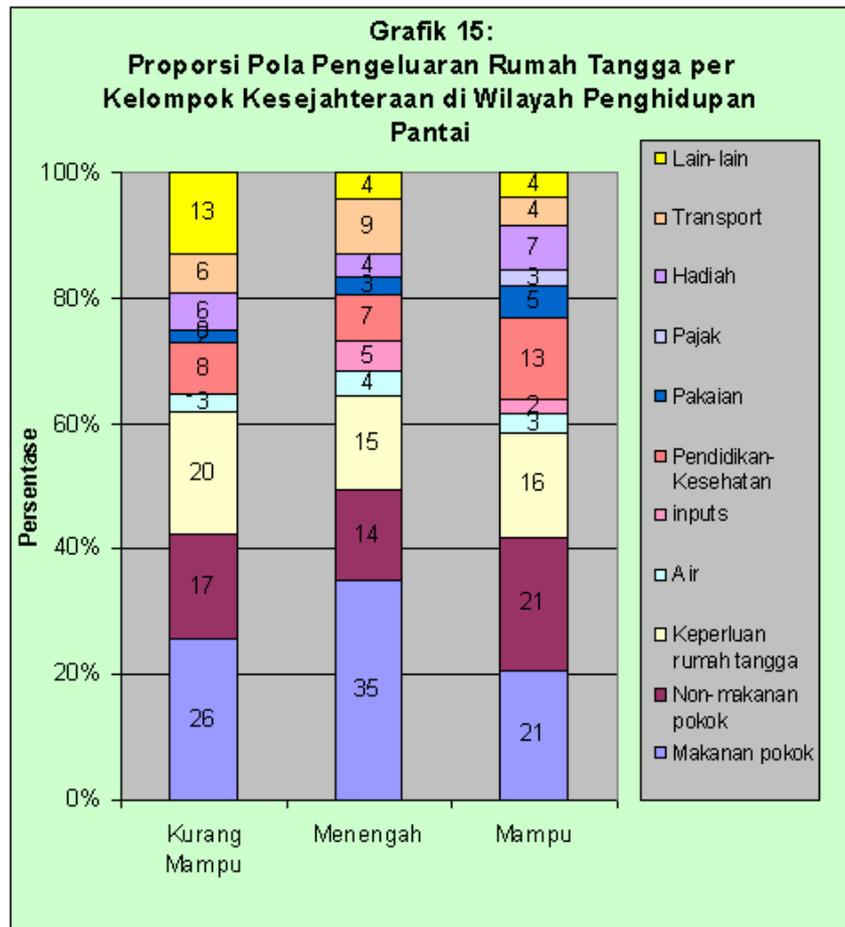
The largest portion of expense for the three groups is for food (for basic food and non-basic food), more than 40% for the three groups, followed by household needs such as soap, kitchen utensils, etc. See Graphic 15.



If the proportion of expenses for food above is converted to rupiahs, then the expenditures for food per day for a household in the non-wealthy group is around IDR7,000, out of which IDR4,200 is for staple foods. For the average wealthy group, it is IDR12,000 (IDR8,000 is for staple food), and for the wealthy group, IDR14,000 (IDR7,000 is for staple foods).



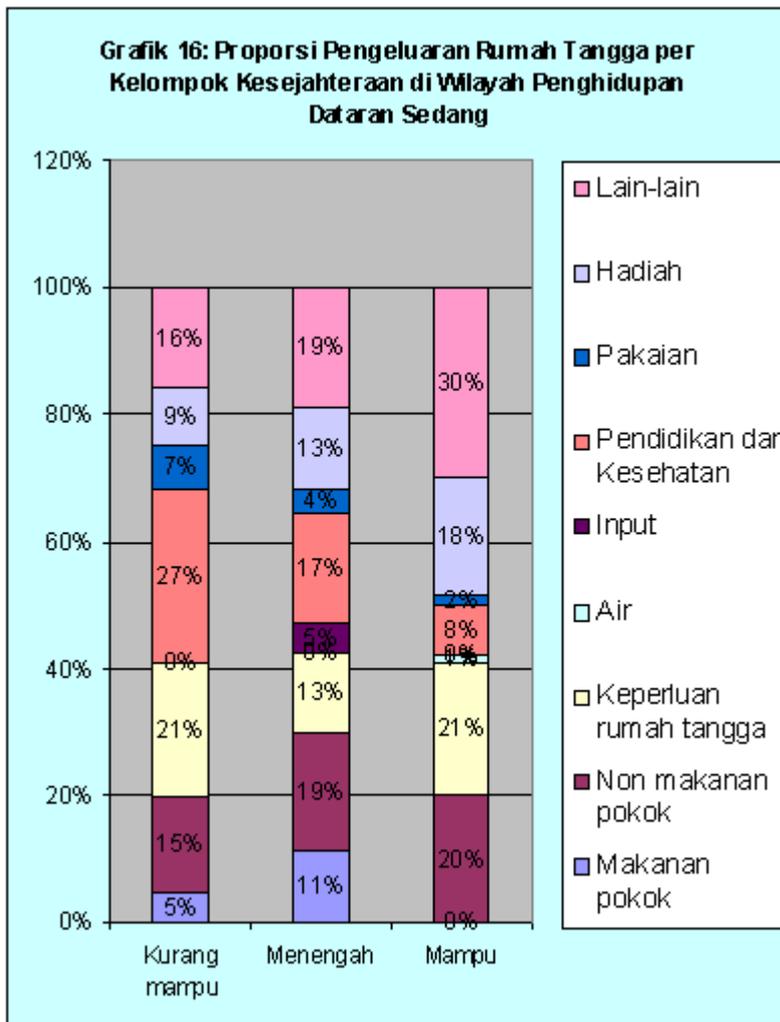
The proportion of expenses for health needs and education for the non-wealthy and average wealthy groups is almost the same, which is 7% - 8% IDR 40,000 / IDR 50,000 per month), while for the wealthy group, it can reach twice as much, around 13% (IDR120,000 per month). The dry condition of the zone compels the household of the three groups to buy water, especially during the dry season. Average expenses per



month for water per wealth group are for the non-wealth group, IDR 14,000; the average wealthy group, IDR28,000 and for the wealthy group, IDR32,000.

The proportion of expenses for food for households in the midland livelihood zone for the non-wealthy group is 20%, for the average, 30%, and for the wealthy, 20% (see graphic 16). If converted into rupiahs, the daily expense for food for the non-wealthy group is IDR 3,500., the average is IDR5,700, and wealthy is IDR5,000. The proportion of expenses for education and health for these households is higher compared to expenses of households in the coastal livelihood zone because the health and education services in this area are limited (more is available in the urban and coastal areas). Households must spend more to obtain education (rent expenses, transportation, pocket money, etc.) or health services (transportation).

A major expenditure, which is sometimes a burden on the household expense, is expenses for gifts or contributions, at traditional and religious occasions (weddings, first mass, etc.). For this, a household must spend an average of IDR30,000 – IDR70,000. This may well increase depending upon whom the gift is for, usually, the closer the relationship, the larger the contribution. Besides cash, these traditional activities usually warrant contributions in kind, for example livestock.



Expenses for cigarettes, alcohol, etc other expenses) are expenses, which are not a burden to the household, but if compared with the proportion of other expenses, these expenses are equal or much larger.

The average wealthy and the wealthy groups have an item of expense for input. This expense covers fertilizer, gasoline for motorcycles, labor wages, and farming equipment.

## **6 Water and Sanitation**

Access to clean water is a problem face by households in both livelihood zones. The main water source is spring water, rivers, and rain reservoir. This zone has limited water sources, the distance varying in average between the water source and the household may reach as far as 2,000 meters with an inclination of 20 – 70 degrees. In the midland livelihood zone, about 85% of the households must cover a distance of 500 meters to obtain clean water. Women are the main actors in the household, responsible for obtaining clean water.

In the coastal livelihood zone, there is a water source (a well) which can only be used for bathing and washing clothes and is not suitable for drinking, and there are even water sources only suitable for watering the yards, to reduce dust. These unsuitable water sources have high sulfur and other toxic mineral contents. An indicator of this condition is that the water is warm to hot, emits a strong odor, and is yellowish in color.

Some villages have a clean water pipe distribution system, at the initiative of the community, the government, or other parties. There are piping systems which make use of motor pumps (for underground water sources), hydrants, and gravitational (the water source is in the mountains). In some areas, rain reservoirs, privately or collectively, are being developed.

During the rainy season, households rely on water sources from the rain and springs. Presently, rivers and springs that are not protected become polluted. Besides that, access to water sources is becoming more difficult due to poor infrastructure, the unmaintained roads become slippery with mud.

The diminishing water supply, damages in the piping network, and the inaccurate construction of the piping network, all this has resulted in the water not being able to be properly distributed to the community. Since the group of water users is not functioning, this has worsened the already damaged piping network.

Some households have family latrines, but its use still depends on the availability of water, and also, the majority of the household's time is spent in the farm fields. Because of this, the practice of relieving oneself in open spaces is still high. According some people, the

number of diarrhea occurrences during the season change increased. It was also noticed that there was a breakout of diarrhea in another area, which caused death.

Access to health services is not always easy for households. Although there are community health centers in the villages, not all are supported with skilled health attendants. They are more available at the sub-district level.

## **7 Hazards, Vulnerability, and Coping Strategy**

The community of the coastal and midland livelihood zones has a strong dependency on the farming sector. This sector is very much influenced by the land condition and climate. A long dry season limits the variety of commodities and planting time, the unpredictable rainy season makes it difficult to determine the time for planting. The strong winds are felt to occur more frequently, destroys food and cash crops, and prevent access to the sea. This results in a condition where the community experiences a period of food uncertainty. This period usually falls around January until February. During this period, food crops cannot be harvested. This nature and climate condition, besides having an adverse effect on farm products, also has an effect on the availability of jobs in this sector, especially to those non-wealth groups.

The people still conduct risk farming, at a time when resources are at a downtrend. Cut and burn is usually done to clean or open up fields. The ash obtained from this practice is believed to fertile the land. Aside from that, this process needs little labor and time. The period of cleaning fields is a period vulnerable to uncontrolled bush fires. In addition, can cause fire to forests, cash crop fields, and even destroy food supplies kept in storage towers.

The hilly topography forces households to conduct their farming in fields located on slopes. Farming practices without the use of appropriate terracing will accelerate the degradation of the land quality due to erosion. Households are beginning to turn to chemical fertilizers as an alternative to overcome the decrease in land fertility. Expansion of food crop farms to increase productivity is usually to higher grounds, by converting forests into cash crop fields.

During or just before a crisis, usually households adjust by altering their eating habits. For example, by reducing their eating frequency, reducing rice consumption and increasing consumption of corn and edible roots. Edible roots are a staple food for households in this area and are usually harvested at the peak of the dry season.

Women play a large role in this change, because they are more capable of regulating the food stock. In a farming cycle, women also determine the managing of the food crop harvest. For example, separating which can be consumed and which should be set aside for replanting.

The condition of the coastal livelihood zone is much drier; as a result, there is insufficient food production to fulfill a year's need. To meet this need, households from the three wealth groups will conduct various efforts to obtain cash or to acquire food directly. For example, by producing food crops, raising livestock, small business, kiosks, selling products to the market, selling labor within or outside the area. Households of midland livelihood zones are more capable of producing food crops. This is why households focus their livelihood on the farming sector.

Access to the market for households in the midland livelihood zone is more limited compared to coastal livelihood zones. Poor infrastructure limits transportation modes. Some of the people of the coastal livelihood zone have to prepare the goods to be traded in the market 1 to 2 days beforehand, carrying them to areas, which can be accessed by vehicles. This limits the amount of commodities that can be exchanged. Many commodities are abandoned because of these limitations.

Working as migrants outside the area and even to overseas is one activity done by some households to fulfill their needs. However, efforts, which are expected to contribute to the welfare of a household, does not always have a positive result. A household headed by a woman (left by her husband to work overseas) usually experiences unfavorable conditions because nobody is there to assist her. This may also bring other social problems, for example many husbands then leave their wives, hence the term "*JAMAL*" which stands for *janda Malaysia* or *Malaysian widow*. (In the district of Belu, the term "Malaysian disease" stands for HIV/AIDS, this is believed to be carried by migrants coming home from Malaysia).

Some of the inhabitants of the coastal livelihood zone see the ocean as source of livelihood. In some areas of the coast, the community is starting to cultivate seaweed and catch fish/become anglers. In addition, this is proven able to contribute to the limitations of their farm products to fulfill their need for food. The government has contributed by providing equipment for fish catching to a group of anglers in this area.

The limited access to clean water and health services increases the risk of households in contracting disease. Efforts to increase capacity towards hygienic living can reduce risks in this area.

## **8 Conclusion**

Households in the coastal and midland livelihood zones have a great dependency on the farming sector, as a source of food and as a source of income. Food production of households in the coastal livelihood zone cannot fulfill their need for an entire year. Only some households (the wealthy group) in the midland livelihood zone can produce food and fulfill their needs for one year. On an average, households can fulfill their needs of 2,100 Kcal per person per day. However, their consumption pattern is to give priority to consume staple food (carbohydrates) because the main nutrition sources of other food products are limited.

The largest income of households in these two livelihood zones come from selling farm products, mainly cash crops. Access to the market thus influences the income of households. Some households (especially the non-wealthy group) get income from selling labor to the farming sector.

The natural conditions cause the households in the coastal livelihood zone, if compared to the community of the midland livelihood zone, have more sources of livelihood (selling skill outside of the farming sector, conducting small business, becoming employees, etc.). A strong dependency on the farming sector will create a disturbance in the farming cycle, and will affect the livelihood of households in the two livelihood zones.

The geographical condition and the poor infrastructure also influence the community's access to food and the market. Farm products from the midland zone cannot be entirely used as a source of food, income or exchange due to limited abilities of the community to bring them to market.