

SPECIAL REPORT

FAO/WFP FOOD SUPPLY AND DEMAND ASSESSMENT FOR ACEH PROVINCE AND NIAS ISLAND (INDONESIA)

22 December 2005

Mission Highlights

- Nearly a year after the tsunami, many farmers in the affected areas had one harvest in 2005 and are planting the 2006 wet season paddy crop. Some 29 000 hectares of farmland have been rehabilitated out of the 37 500 ha damaged by tsunami.
- The revised paddy production for 2005 has been estimated at 1.43 million tonnes, implying damage due to tsunami of only about 7 percent. Rice surplus production in Aceh is expected to be around 200 000 tonnes for the 2005/06 marketing year.
- In the fisheries sector, 2005 output is estimated to fall by 45 percent for marine fishing and 28 percent for brackish water aquaculture, below normal. It is expected that much of the fishing industry can return to near normal in 2006, as per the sustainable fisheries plan being implemented by the Government with technical advice from FAO.
- While some progress has been made in restoring/replacing damaged and lost small boats, very little progress has been made in shrimp and farmed fisheries sector (tambaks). This sector is likely to take much longer to re-establish itself due to the large capital requirements, ownership complications, use of labour/mechanization and other complex issues.
- Prices of major commodities have remained stable from January to September 2005. However the fuel price increase in October resulted in a spike in the consumer price index, and has led to significant rise in food prices.
- While various cash-for-work and other wage earning activities are available most of the people living in temporary shelters have not yet re-established their former livelihoods. Relatively less employment opportunities are generated on the east coast and Nias.
- The current number of IDPs according to the official list published on 12 October 2005 shows 371 691 persons as IDPs, down from 700 000 at the peak of the crisis in January 2005.
- Reconstruction of homes and rehabilitation of productive assets remain the essential elements in the recovery of livelihoods of the affected people. Assistance for acquiring food and building assets is needed during a transition period.
- While the reconstruction process and the livelihood recovery is in progress, use of market based options (cash/voucher) for food assistance is seen as ideal in the case of Aceh since the food is readily available and markets function relatively well.
- Targeting of the food distribution is a major challenge but a thorough examination of beneficiary lists is necessary to minimize the inclusion error and to ensure that the aid goes to those who need it the most. The mission suggest changing the emphasis of the WFP activity from General Food Distribution to Targeted Food Distribution for Livelihood Recovery.
- Given the chronic malnutrition status of children in the tsunami and earthquake affected areas, revitalization of the village level integrated health posts (Posyandu) and expansion of the Mother and Child Nutrition (MCN) projects in the high child malnutrition areas should be considered.



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME



WORLD FOOD PROGRAMME, ROME

1. OVERVIEW

Earlier in the year from 12 to 25 March 2005 FAO and WFP conducted a first assessment of food supply and demand in the tsunami affected districts of Aceh Province. The assessment showed that the livelihoods of approximately 600 000 people had been directly affected by the tsunami of 26 December 2004. At the same time rice production was expected to show some 200 000 tonnes surplus for the 2005/06 marketing year (April/March). At that time the recovery effort by the Government and the international community had just begun.

The main objective of this follow-up mission undertaken jointly by FAO and WFP from 7 to 18 November 2005 was, therefore, to determine, after 11 months since tsunami struck, the extent to which people have resumed some form of livelihood which allows them to have sustainable access to markets in order to obtain sufficient and nutritious food. The focus of the Mission was on the extent of agricultural recovery, functioning of markets, and changes in food security, nutrition and vulnerability status of people affected by the tsunami and the role of food aid. The special case of Nias, which was heavily affected by the earthquake on 28 March 2005, is highlighted.

The mission began with briefing meetings and discussions with FAO and WFP representatives and other staff in Jakarta and planned the field visits programme to Aceh. Once in Banda Aceh, the Mission had a series of consultation meetings with government staff (BRR- the Government Agency for Reconstruction of Aceh, Provincial Department of Agriculture, Food Security Agency, and several District Agricultural Officers), the UN/International Agencies (UNDP, UNICEF, the World Bank, and the Asian Development Bank), and international NGOs (namely World Vision, CARE, Save the Children UK, and IFRC). The mission was divided into two sub-teams, one covering six districts on the west coast and the other travelling to four districts on the east coast plus the island of Nias in North Sumatra. Both teams interviewed traders, millers, farmers, fishermen, and Internally Displaced People (IDPs) living in temporary camps and in barracks or residing with host families. The mission also visited Medan city in North Sumatra, a trading centre that provides an important food trade link to Aceh province. Interview with a wholesaler and a Bulog Official was conducted in addition to a visit to the local market in Medan. On the last day of the mission debriefing with the Deputy Director of Food Security Unit, Indonesia, and the FAO and WFP Representatives and staff was conducted in Jakarta. General findings of the mission are summarized below.

Overall Investment:

Following the December 2004 tsunami disaster, the Government of Indonesia, in collaboration with UN agencies and other partners completed a blueprint for the rehabilitation of the Province, which called for Rp. 41.1 trillion (about US\$4.1 billion) over the next five years. According to BRR, as of early November 2005, US\$7.1 billion had been pledged by international donors of which US\$3.6 billion worth of projects for rehabilitation and reconstruction were approved.

Agriculture Sector:

Many farmers in the affected areas harvested one crop in 2005 during the dry season and the majority have started the 2006 wet season production (starting from October/November 2005). So far there has been rehabilitation of estimated 29 108 hectares of farmland. Based on the Ministry of Agriculture data this report estimates for Nanggroe Aceh Darussalam (NAD - Province of Aceh) rice production for the 2005/06 marketing year at 933 000 tonnes or about 7 percent below the revised estimate of average production of the previous two years. This implies an anticipated surplus of about 200 000 tonnes for 2005/06 marketing year. In spite of the overall surplus of rice in Aceh, many farmers in heavily affected areas have lost two 2005 consecutive seasons (2004/05 main season and 2005 secondary season) of paddy production. Few of them are expected to recover one paddy production in 2006 while about half of the heavily affected areas are lost for good.

Fisheries Sector:

In the fisheries sector, 2005 fish output is estimated to decline by 41 percent for marine fishing and 26 percent for brackish water culture, better than the March forecast given the progress made in fishing assets restoration. Based on the calculation that 15 percent of the fishermen were lost, the sustainable fisheries plan worked out by BRR with technical advice from FAO calls for rebuilding of only 6 000 new boats to replace some 10 800 damaged/lost boats. So far 4 073 boats have been distributed. Reportedly boat building programme faced a setback initially due to the poor quality of boats built by untrained local

carpenters. It is anticipated that most of the damaged and lost boats will be replaced by early 2006 and much of the fishing industry can return to almost normal as per the sustainable fisheries plan. Reconstruction of tambaks for shrimp and fish, however, is likely to take much longer to re-establish itself due to large capital requirements, ownership complications, issues of labour/mechanization and other complex issues.

Markets:

Food markets, disrupted with loss of physical infrastructure and most commodity stocks in most coastal areas during the tsunami disaster, have resumed their activities. Rice and most other food items are readily available in most markets at fairly competitive prices. The average 2005 (Jan-Sep) rice price was lower by 12 percent than the corresponding price in 2004. This is mainly due to the reduced purchasing power, reduced effective demand this year following the tsunami disaster and the decline of the rice quality. However, based on the official data, the farm gate prices of rice have remained higher in 2005 compared with prices in 2004 mainly due to the higher support price by Bulog (the Government procurement agency). The mission also found that the average price of rice on the east coast in 2005 was slightly higher, by about Rp. 200/kg (about US 2 cents), than the corresponding price on the west coast, primarily due to an easier access by road and higher demand on the east coast from the main trading centre of Medan.

Although the impact of food aid on the rice price is ambiguous because of the government intervention, it may have resulted in the decline of the market share of traders, among other factors such as the decrease in population due to the high death toll, loss of infrastructure that has caused traders to abandon their former activities, and lack of any assistance programmes for traders.

According to BRR by November 2005, some 121 fish markets were built. There has been a decline in supply which was accompanied by a decline in demand due to the loss of purchasing power. Consequently prices of fresh fish have remained stable with a small positive trend in line with the general price inflation. Shrimp prices on the other hand have risen significantly this year (currently almost double the pre-tsunami level) on account of reduced supplies and increased demand particularly by relief workers.

With respect to the labour market, wage rates on the west coast under most cash-for-work programmes are about Rp. 35 000/day or almost double the pre-tsunami rates. Wages are slightly lower on the east coast owing to less construction activity and slower progress on re-construction of fish and shrimp farming (tambaks). Major reconstruction and other investment projects by various donors, ADB, the World Bank, and the Government are expected to provide employment opportunities over next five years. Impact of this on farming and fisheries, however, is rather uncertain and would depend on the relative profitability of these traditional sectors vis-à-vis the new employment opportunities.

Recovery in other sectors (as reported by BRR):

- The current number of IDPs according to the official list published on 12 October 2005 shows 371 691 persons as IDPs, down from about 700 000 at the peak of the crisis in January 2005.
- A total of 10 119 housing units have been built (including temporary shelters) and 3 804 are under construction.
- In all 119 schools have been built and 132 health facilities completed. School enrolment and attendance have recovered, and
- Some 3 640 micro-finance loans have been made.

Nias Island:

The islands of the northwest coast of Sumatra, such as Nias and Simeulue, suffered relatively fewer casualties but actually bore the greatest economic brunt of the disaster. The destruction of housing, fishing boats and gear, cropland and plantations, and even fresh water supply, was most widespread; it also affected particularly impoverished populations, with little support from outside relief and reconstruction supplies. Consequently, the overall recovery process is slower than in NAD. The functioning of rural markets is more constrained by poor infrastructure (roads) conditions on the island.

Nutrition:

The nutrition status of the affected areas (Aceh Province and Nias), continues to lag far behind the national average. Before the tsunami, almost 30 percent of the population in Aceh Province (NAD) lived below the poverty line, compared with a national average of some 18 percent. Among tsunami and earthquake affected

districts, the highest numbers of poor (poverty rates) are located in Pidie (44 percent), West Aceh (38.1 percent), Sabang (36.7 percent) Aceh Besar (33.2 percent) and the islands of Simeulue (38.1 percent) and Nias (31.4 percent). Over 35 percent and 58 percent of children under 5 were underweight, in NAD and Nias, respectively, compared to 25 percent for Indonesia.

Recommendations:

The findings of this assessment have to be interpreted with care as they are not based on a representative statistical sample survey. The results are based on secondary data/information and earlier studies/surveys such as the Food and Labour Market Analysis by ICASERD¹/WFP, the Follow-up Emergency Food Security Assessments undertaken by WFP and the discussions and interviews with numerous key informants and the conclusions may not be easily generalized. Nevertheless some recommendations for future food aid and agricultural sector support programmes are made and may be considered for implementation.

In spite of the progress made especially in the recovery of agriculture and fisheries, the recovery of livelihoods of the most affected people residing in TLCs still depends on the progress made in the reconstruction (particularly housing and assets) sector. People still depend on food aid, as their livelihoods are not sustainable yet and will need assistance in 2006. In view of this, the following recommendations are made:

1. Given that the food is readily available in most markets, and markets function relatively well in the province of Aceh, and the beneficiaries of the current food aid programme rely on markets for selling and buying food, it is recommended that market based options (cash/voucher) in combination with cash-for-work programmes be examined for implementation during 2006 whenever resources are available.
2. Targeting of the food distribution is a major challenge but a thorough scrutiny of beneficiary lists is recommended to minimize the large inclusion error pointed out by some NGOs in the field, to ensure that the aid goes to those who need it the most.
3. Given the chronic malnutrition status of children in the tsunami and earthquake affected areas and the need to revitalize the village level integrated health posts (Posyandu), the expansion of Mother and Child Nutrition (MCN) projects to areas with high level of child malnutrition be considered.
4. Given the rice surplus situation in the region, it is recommended that local purchases be pursued whenever possible in order to meet food aid requirement in the province so as to prevent domestic food market distortions.
5. Farmers typically incur heavy losses at drying and milling stage of paddy due to lack of good facilities. In addition, if the paddy is not dried up to the standards required by Bulog, the state procurement agency, farmers do not benefit from the Government's support price. Hence, feasibility, modality and effectiveness of assistance/financial facility be examined.
6. Small traders seem to be the only group adversely affected by the tsunami that fell through the cracks of various assistance programmes. Assistance to small and petty traders whose livelihoods were destroyed by the disaster should be considered. This would also help strengthen marketing/economic activity and improve general marketing efficiency.

2. SOCIO-ECONOMIC CONTEXT

2.1 Indonesia

The Indonesian economy remained sound over the last five years due to restored macroeconomic stability, restrained budget stance and improved management of state banks. As a result, the economic growth has gained momentum year by year, increasing from 3.8 percent in 2001 to 5.1 percent in 2004. After several sluggish years, investment grew by about 15.8 percent in 2004, up sharply from previous years. In the meantime, private consumption has been buoyant. Growth strengthened further in the first quarter of 2005, when real GDP increased by almost 6.5 percent (year on year basis). Inflation declined from 12.5 percent at end-2001 to 6.4 percent at end-2004 but has since climbed to 9 percent in September and 18 percent in October 2005. This sharp rise was caused by the 126 percent increase in the regulated fuel prices on 1 October 2005.

Despite progress made in poverty reduction compared to the pre-financial crisis levels of 1996, Indonesia's widespread poverty and unemployment remains a key policy challenge in order to place the economy on a sustained high growth path. While 6.7 percent of the population lives below US\$1 per day, over 53 percent of

¹ Food and labour market analysis and monitoring system in Nanggroe Aceh Darussalam (NAD) province. Indonesian Centre for Agro-Socio-Economic Research and Development (ICASERD), Ministry of Agriculture, July 2005.

the population lives on less than US\$2 per day, and about that many remain highly vulnerable to falling under Indonesia's poverty line². Indonesia's steady pickup in growth in the last few years, averaging some 4.5 percent since 2000, has not been accompanied by increases in employment levels. While the government focused on improving working conditions, the labour force has expanded in line with population growth, with the participation rate around 67-68 percent. Registered unemployment has edged up every year since the 1997 crisis, increasing from 4.8 percent in 1997 to almost 10 percent in 2005.

The value of total damage and losses from the disaster adding up to 2.2 percent of national GDP, it is unlikely to pose a serious threat to the national economy, as opposed to affected areas. Macroeconomic projections imply a possible reduction of 0.1 to 0.4 percentage points in GDP growth rates for 2005, relative to baseline forecasts before the disaster. Some of this, however, should be compensated by positive stimulus to the economy from rehabilitation and reconstruction activities. In the end, the overall impact on the national economy is expected to be very small.

2.2 The Aceh Province and Nias Island in North Sumatra

In the northernmost province on the island of Sumatra, Aceh has a population of about 4.2 million, divided into 21 districts. Oil and gas together is the single most dominant sector in NAD, accounting for about 43 percent of Regional Gross Domestic Product (RGDP). Aceh's RGDP growth rate in 2003 was 3.4 percent, about 1 percentage point below the national growth rate. The manufacturing sector relies on a relatively small number of capital intensive industries with high output per labour ratio.

Aside from oil and gas, agriculture (including fisheries, livestock, etc) accounts for about one-third of RGDP. Oil, gas production and manufacturing being quite capital-intensive, at least half of the active population is employed in the agricultural sector. Compared to the rest of Indonesia, the manufacturing, finance and services sectors are much less developed in NAD.

The province of Aceh has long had a net trade surplus with the outside. In 1992, the ratio of exports to imports, in value, was about 25/1. However, between 1992 and 2003, the current value of exports fell to one-half of its original amount, from US\$3 billion to US\$1.4 billion. By then, the ratio of exports to imports was slightly higher 28/1. The composition of trade, however, is highly skewed; exports of mineral fuels and mineral oil products amounted to US\$1.378 billion in 2003, out of a total US\$1.44 billion of exports (nearly 96 percent). Other main export categories include fertilizer (3.6 percent), articles of apparel (0.2 percent)³. These numbers are somewhat misleading because they under-represent primary sector exports, most of which flow unrecorded into the Province of Sumatra Utara, for local consumption or export via Medan.

Remittances to and from the Province also give a sense of Aceh's relative wealth compared to other regions of Indonesia. In 2003, US\$3.8 million were sent out through the post office, compared to US\$3.15 million received. The largest difference between money sent and received was in Meulaboh, where outgoing remittances added up to US\$213 000 compared to inflows of US\$39 000.

Together with the eastern-most province of Papua, Aceh has special autonomy status. Because of this, NAD has been granted a greater share of government revenue from its natural resources, including oil and gas, than have other provinces. Because regional and local governments have been receiving revenue sharing from Aceh's gas wealth, in addition to block grant transfers from the central government, the combined budget of Aceh's provincial and district governments grew six times between 2000 and 2002.

In spite of this, the relatively poor state of Aceh's power, transportation and irrigation networks is a reminder of the lack of economic development in a province otherwise endowed with an abundance of natural resources. Due to concerns over conflict and security in the Province, domestic and foreign investment – especially in the primary sector—has dried up. Economic activity declined by 20 percent between 1997 and 2001. According to 2003 Bureau of Planning estimates, almost 30 percent of the population in Aceh Province were living below the poverty line, compared to the national average of 17.4 percent. The share of food in total private consumption is estimated at 64 percent. Among tsunami affected districts, Aceh Utara, Bireuen and Pidie had the highest numbers of poor people, closely followed by Aceh Besar and Aceh Barat.

The peace deal signed on 15 August 2005 between the Indonesian Government and the GAM rebels is holding and the security situation and the climate for economic development in the province have improved significantly. However, the 28-year conflict has taken the lives of some 10 000 people and led to the

² World Bank (2004): Indonesia, Country Assistance Strategy 2004-2007.

³ Aceh in Figures - 2003, BPS, Provinsi Nanggroe Aceh Darussalam, with BAPPEDA.

destruction or serious damage of infrastructure, including 900 schools, some dispensaries, etc. Aceh has no lack of education or health personnel, but people often refuse to work in rural areas for security reasons. In past years, bus burning and widespread extortion on Aceh's roads seriously impeded transport and transactions. It is estimated that 35 000 people were displaced by the conflict. Some of them have migrated to post-tsunami refugee camps or TLCs, but the extent to which they will benefit from rehabilitation and reconstruction activities is unclear.

Nias Island is a chronic poverty zone as compared to the other affected areas in Aceh Province. About 32 percent of its population lives below the poverty line (against 16 percent in North Sumatra and 18 percent at national level), with 77 percent of per capita expenditure allocated to food expenditure (Table 1). Some 87 percent of Nias population is engaged in smallholder agriculture including farming, fishing and work on plantations.

Table 1: Key Livelihood Indicators in Nias, before the Tsunami and Earthquake

Indicators	Nias	North Sumatra	Indonesia
Real GDP per capita in 2000 (Rp. 1 000) (constant, 1993)	1 236	2 357	-
People below national poverty line in 2003 (%)	32.2	15.9	17.4
Share of food in total per capita expenditure in 2002 (%)	76.7	66.8	58.5
Under-nourished children under five in 2002 (%)	57.7	33.0	25.8
Household access to safe water in 2002 (%)	58.0	58.2	55.2
Household without sanitation in 2002 (%)	30.3	16.8	25.0
Infant mortality rate in 2002 (per 1 000)	40.9	40.0	43.5
Adult literacy rate in 2002 (%)	82.9	96.1	89.5
Number of village without access to road in 2003 (%)	48.0	-	-

Source: Indonesia/BPS Special Compilation of 2002 Poverty Survey and WFP, Food Insecurity Atlas (2005).

2.3 Overall Economic Impact of the Tsunami and the Earthquake

Paradoxically, islands and archipelagos off the northwest coast of Sumatra (Nias, Simeulue, Nyak, Singkil) suffered relatively fewer casualties but bore the economic brunt of the disaster. Due to proximity to the epicentre of the earthquake, the destruction of housing, fishing boats and gear, cropland and plantations, and even fresh water supply, was most extensive; it also hit severely impoverished populations⁴, with little access to outside relief and reconstruction resources.

Waterfront urban areas and coastal settlements in or near Banda Aceh and along the West coast were also devastated. On the Northeast coast, damage was significant, but more limited to the estuarine areas of Pidie, Bireuen and Aceh Utara Districts. Further details of damages due to tsunami are provided by Special Report of the Joint FAO/WFP published in May 2005.

The impact on the local economy of NAD was very large. Total damage and losses are reckoned to be equivalent to about 100 percent of the Province's RGDP. The disaster impacted primarily the private assets and revenues of a mostly low income population, with a few exceptions such as urban businesses located at or near waterfront markets in Banda Aceh, or Meulaboh, for instance.

In NAD the transportation sector was affected both in public and private asset terms: 316 km (10 percent of total) of provincial roads, 1 900 km of local roads and 400 bridges were destroyed or heavily damaged. There was also significant loss of and damage to vehicles⁵. Much of the primary transportation infrastructure in the province is located in coastal areas, since inland areas tend to be steep and high mountains, with a concentration of population and economic activity along the coast. Destroyed road networks resulted in a surge of transport costs by 24 percent during the first 8 months of 2005. The combining impact of this transport price increase and the fuel price increases of March and October, 2005 are reported to have increased the price of basic goods by 40 percent in Aceh Province. The year on year inflation rate accelerated to about 23 percent in Aceh Province (up to 20 percent in Nias) in November, 2005, compared with 17.9 percent national average.

⁴ Nias was already the poorest Kabupaten in Northern Sumatra.

⁵ 30 000 vehicles, over 7 percent of total registered.

It is estimated that over 600 000 people in Aceh and Nias, about one-fourth of the total working population, have lost their jobs as a result of the disaster. The single most affected sector is that of fisheries and aquaculture (130 000 jobs before the disaster), which accounted for almost 70 percent of coastal employment⁶. For the agricultural sector as a whole, about 300 000 people are likely to be unemployed or underemployed. Labour demand for rehabilitation activities at relatively high daily wages (Rp. 35 000/day as opposed to the minimum daily wage of Rp.20 000) is strong, but there is often a gap between the skills required for rehabilitation work and those available locally, which means that the most unskilled and poorest members of the labour force may have little or no access to the rehabilitation-related jobs. However, as the housing construction and other work projects get underway the employment situation is improving rapidly. For example, on any given day a visit to an IDP camp reveals that over 75 percent of the IDPs are gone for casual labour activities.

2.4 Overall Rehabilitation/Reconstruction Status Nearly One Year Later

As shown in Table 2, progress has been made in the reconstruction/rehabilitation process but needs to be speeded up. However, very little progress has been made in Nias since the earthquake in March 2005.

Table 2: Rehabilitation/Reconstruction Progress Status in NAD and Nias

Aceh Province (as of October, 2005)			
Housing	10 119 housing units built and 13 804 under construction (87 395 needed)		
Education	119 schools built		
Health	132 health facilities completed		
Religion	141 religious facilities constructed		
Livelihood	4 073 boats distributed		
	121 fish markets built		
	29 108 hectares of farmland rehabilitated (37 500 ha damaged)		
	3 640 micro-finance loans made		
Nias Island (as of September, 2005)			
	Estimated Damage	Reconst./rehab. Target	Progress, as of September 2005
Housing	12 000-16 000 units destroyed	March 2006	150 houses
	29 000-32 000 units damaged at over 50 percent of their value	March 2007	
Infrastructure	12 ports and piers destroyed	March 2008	
	403 bridges un-passable	March 2008	
	800 km of local roads un-passable	December 2008	
	266 km of provincial roads un-passable	March 2007	
Public Institutions	1 052 Government buildings were partially or totally damaged	March 2007	
Education	755 schools were partially or totally damaged	December 2006	10 primary schools
Health	The only 2 hospitals damaged	December 2006	
	173 health centres partially or totally damaged	December 2006	
	307 village clinic damaged	December 2006	
Markets	219 markets, shops and kiosks damaged	December 2006	7 markets
Social	1 938 religions building were partially or totally damaged	December 2007	

Source: BRR.

3. RECOVERY PROGRESS IN AGRICULTURAL AND FISHERY SECTORS

Agriculture represents a major share of the local economy in Ache Province and Nias both affected by the tsunami and the earthquake. It is estimated that 465 coastal villages in Aceh province and as many as 92 000 farms and small agricultural enterprises have been partially or wholly destroyed. Prior to the disaster,

⁶ Indonesia: Notes on reconstruction, BAPPENAS, 2005.

these enterprises provided employment for approximately 160 000 people. Unlike Aceh Province, Nias Island suffered more from the earthquake than the tsunami. The tsunami hit 20 percent of the western coast line, resulting in the destruction of many fishing villages and livelihoods, while the earthquake struck the entire Island.

The estimates of damage and longer-term losses to agriculture and irrigation⁷ were approximated at some US\$285 million, almost 80 percent of which in estimated losses to future crops⁸ (43 percent), damage to irrigation infrastructure (22 percent), and permanent land losses (13 percent). In the fisheries sector, direct damage was estimated at about US\$94 million, almost half of which is in the brackish water pond sub-sector. The value of losses in future fish production was assessed at some US\$381 million.

Overall, the recovery of productive assets is much slower in Nias compared to Aceh Province, due to poor road conditions, lack of construction materials and lack of assistance for livelihood activities.

3.1 Agricultural Sector

Rice is the major food crop for farming and staple food for the people of NAD. Paddy cropping pattern and seasonal production are mainly determined by irrigation system and rainfall. Rainfall varies considerably, with generally more rainfall on the west coast than the east coast. In drier areas, there is only one crop per year without irrigation, but 2-3 crops with irrigation. Overall, the east coast has better irrigation facilities than those on the west coast.

Based on the pattern of the monsoon winds, there are two main seasons in a year, referred to as "wet" and "dry" seasons. The wet season normally runs from October to March and produces some 60 percent of the annual rice crop and half of the annual maize, soybean and groundnut crops. The dry season covers the period of April to September when the remainder of the annual crop is produced.

Total wetland area in NAD before the tsunami was around 391 000 hectares, with paddy harvested area increasing in the last decade from 300 000 hectares in 1990 to 370 000 hectares in 2004. Many coastal rice growing areas were devastated by seawater inundation and marine deposits. The total damaged/lost paddy land was estimated at 37 500 hectares (equivalent to some 60 000 ha of harvested area), accounting for some 16 percent of paddy land. Among the total damaged/lost land, 18.9 percent was lightly damaged, 26.7 percent moderately damaged, and 46.7 percent highly damaged. Some 2 900 or 7.7 percent was totally lost to the seas or have become completely unsuitable for farming (see Table A.1). Based on FAO, normal agricultural production can start immediately in lightly damaged field, but it requires simple interventions in moderately damaged area and more complex interventions in heavily damaged area.

Almost everywhere along the west coast and Simeulue, the direct effects of the earthquake and the tsunami on agricultural land were both more extensive and more severe, with most damaged paddy-fields categorized as being severely damaged; while on the east coast, damage is more limited to the estuarine areas of Pidie, Bireuen, Aceh Utara, and Aceh Timur, with most paddy-field damage categorized as light or moderate.

On the west coast, the February/March harvest - lost to the tsunami in affected areas - represents a greater share of annual paddy production. Many rural communities in the affected areas lost not only most of their farm assets, but also important agricultural infrastructure such as drainage and irrigation systems, rice mills, processing plants, agricultural markets, trader shops, research and training institutions, and government extension services.

As for Nias, the impact of the tsunami on rice farming is small. Only 1.3 percent (200-300 ha) of the total rice land area (15 800 ha in 2003), is reported to be affected (both districts). Paddy production suffered more from the damage caused by the earthquake on the irrigation system than the tsunami but the overall impact on rice production is limited, given that only 12 percent of fields are irrigated.

Recovery status in NAD:

Table 3 provides a summary of the rehabilitation progress so far as well as the prospects for 2006 for the rice fields in NAD. Almost one year after the tsunami, more than 90 percent of lightly damaged and more than 80 percent of the moderately damaged paddy fields have been cleaned and restored for 2005/06 main wet

⁷ Damage Assessment, CGI, January 2005.

⁸ Apparently not expressed in net present value of future flows.

season starting from October/November, primarily through cash for work programmes. Most of both categories of affected paddy fields had one harvest since the tsunami, with unexpectedly good yield on the east coast. However, some of the severely damaged paddy fields need major rehabilitation including recovery of irrigation infrastructures and removal of sediments from drainage systems or creeks mouths which is expected to up to 5 years; some 3 000 ha is lost permanently. Some areas may be planted with rice, but other areas may be more suitable for aquaculture or planting of salt-tolerant tree crops, particularly in the low areas near the sea.

The deterioration of soil fertility due to the salt pollution of agricultural fields was a major concern during our March Mission. However, surveys and research by FAO and Australian Centre for International Agricultural Research (ACIAR) in collaboration with the Indonesian Soil Research Institute in Bogor and Balai Pengkajian Teknologi Pertanian (BPTD: Assessment Institute for Agriculture Technology) in Banda Aceh suggest that soil salinity is no longer a major threat to crop production in areas that have good irrigation facilities or those that receive good annual rainfall in the west. Based on a FAO survey, heavy precipitation along the severely damaged west coast in the spring had already leached out most of the contaminated lands. Along the drier east coast, farmers and local government officials interviewed also confirmed that the fields with salt contamination were well-watered by rain and the situation has returned to normal. However, crop failures had been reported in low-lying areas near tidal creeks due to much more extensive inundation with seawater.

Farmers on the east coast reported that they have unexpectedly good yield (5.5 tonnes/ha) from the lightly damaged fields. The farmers also attribute the good harvest to the seeds, fertilizer, tools, and hand-tractors provided by FAO, government and other organizations.

Table 3: Rehabilitation Progress in 2005 and Prospect for 2006: Paddy Fields in NAD

Damage by Degree	Area Damaged (ha)	Rehabilitation and Production in 2005			Prospects for Rehabilitation and Production in 2006		
		Rehabilitated	Production	Assistance received	Rehabilitation	Production	Assistance Needs
Minor damage	7 070	>90% as normal	1 harvest in irrigated area; good yield	seeds, fertilizer, hand tractor, thresher, water pump, Cash for work	100% recovery	Normal	Seeds, fertilizer, fuel
Moderate	10 000	>80% cultivated, but irrigation system not recovered	1 harvest in irrigated area with salt tolerant rice varieties; normal yield	Same as above	>90% recovery in cultivation and irrigation system	Normal with change of cropping pattern	Cash for Irrigation system, seeds, fertilizer, fuel
Severe	17 500	>50% cultivated, irrigation system not repaired	Most areas no harvest	Same as above	>70% recovery in cultivation and irrigation system	Some area for paddy, some for aqua-culture or tree crops	Cash for Irrigation system, Support to diversification, inputs
Lost	2 900						
Total	37 500	>29 000 ha					

Source: BRR and Mission's assessment.

Recovery status in Nias. The recovery pattern of agriculture in Nias is less encouraging. Agriculture was and still is the most important means of livelihood in Nias. The paddy production in 2005 on affected areas is 40 percent below a normal two-season cropping year. It is expected that, the paddy cropping and production will recover to a normal pattern in 2006. As the yield from rice production in Nias is low (3 tonnes/ha for irrigated paddy and about 2.5 tonnes/ha for rain-fed paddy) compared to the rest of Indonesia, the Island will remain rice deficit, with a year average of approximately 21 000 tonnes of rice imported from other areas such as Medan.

In general, rice farming and smallholder rubber gardening are the major sources of income in Nias. The rubber collectors reported a decrease in the amount of rubber that can be tapped per tree, though recovering slowly. On average, a tree will typically produce 5 kg of rubber per tree. It is believed that the root systems of the trees were affected by the earthquake and that they are in some type of shock. Right after the earthquake, findings indicate that this has reduced to 2 kg per tree. Although rubber trees are recovering slowly, the farmers' income declined significantly as a result of the decrease of rubber production and the decline of the real farm gate prices. The nominal purchase price of rubber remained unchanged before and after the earthquake (Rp. 4 000-6 000/kg) while market access difficulties increased due to the earthquake as well as the increase in transport cost after the fuel price increase.

In order to help the affected farmers of Aceh and Nias, various donors/organizations including ADB, FAO, USAID, among others, are developing various projects. ADB is providing more than 30 million dollars in its Earthquake and Tsunami Emergency Support Project (ETESP) agriculture component alone. FAO has already distributed seeds (rice, maize, soybean and groundnut), seedlings, vegetable kits, fertilizer and hand tractors, rice threshers and other motorized cultivators.

Prospects for crop rehabilitation and production in 2006 are favourable both for Aceh Province and Nias Island. Paddy in lightly and moderately damaged fields has been transplanted in October/November. Discussions with the farmers indicated that most of them are optimistic, but express their continuing need for seeds of good quality, fertilizer, and fuel. The cash-for-work programme is still the key factor in restoring the damaged irrigation systems and village roads, especially in the severely damaged areas.

3.2 Fisheries Sector

The fisheries sector was a major economic activity in Aceh, contributing to 6.5 percent of RGDP and providing direct employment for over 80 000 people, or 16 percent of the total coastal population. Fish output was estimated at 158 578 tonnes in 2003, comprising 133 976 tonnes captured from marine fishery and 24 602 tonnes harvested from aquaculture. Due to the lack of canning facility, most of the fish were consumed locally or exported unprocessed overseas or to other parts of the country. The sector is relatively more important in terms of household income and food consumption in the following districts, where production per capital ranges from 98 to 62 kg/year: Sabang, Aceh Singkil, Simeulue, Aceh Timur, Aceh Selatan, Aceh Barat and Bireuen.

Marine Fishery

Most of the fishing communities applied inshore waters with artisan craft and gear. A large number of canoes, small planked boats (almost 15 000), and inboard motor fishing boats are found along all coastal areas. Commercial fleets are located on the north and east coast in Aceh Utara (Lhokseumawe), Aceh Timur (Langsa) and Bireuen, and on the west coast in Aceh Barat (Meulaboh) and Aceh Selatan (TapakTuan).

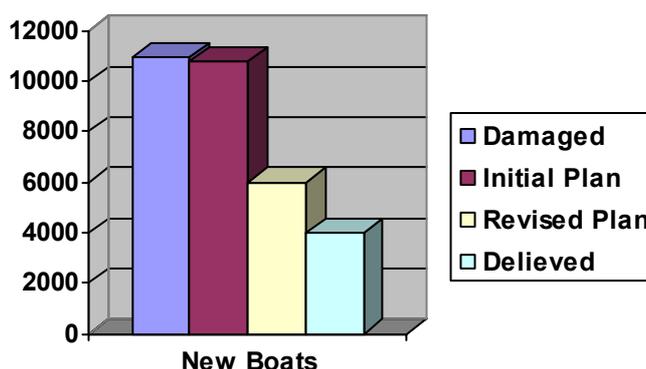
In the fishery sector, 19 units (0.37 percent) of TPI (places of fish auction) were damaged⁹, and 32 out of 72 units of Fish Landing Base (PPI) scattered in 8 *kabupaten* experienced the impact of the tsunami¹⁰. A total of 10 961 out of 17 732 units of the fish-catching fleet in Aceh was reportedly damaged. Of the total population of 750 000 in Nias Island, some 4 000 to 5 000 persons are directly involved in fishing, including the fishers, wholesale fish sellers, small-scale fishmongers, processing specialist for salting/drying fish, and marketing of fish and other ancillary activities (FAO June Assessment). FAO estimates that 1 026 new boats would be required, with 917 in Nias district and 145 in South Nias district.

Recovery status. FAO estimated that some 10 800 boats were damaged or lost (Figure 1). Based on the calculation of that 15 percent of the fishermen died, the sustainable fisheries plan worked out by BRR with a technical advice from FAO calls for rebuilding of only 6 000 new boats. So far 4 073 boats have been distributed. Reportedly boat building programme faced a setback initially owing to the poor quality of boats built by untrained local carpenters. It is anticipated that most of the damaged and lost boats will be replaced by early 2006 and much of the fishing industry can return to almost normal as per the sustainable fisheries plan.

⁹ Data from UNSYIAH for Aceh Reconstruction, 7 March 2005.

¹⁰ Five in Kabupaten Aceh Besar, 6 in Kabupaten Pidie, 10 in Kabupaten Aceh Utara, and 8 in Kabupaten Aceh Barat.

Figure 1: New Boats Building Programme: Needs, Planned, and Delivered in NAD



In Nias, fishing activities have not yet recovered significantly due to the heavy damage caused both by the December tsunami and the March earthquake to the fishing communities. Reports from the field indicate that the actual geology of the island has changed, and in some areas corral reefs have risen by up to 2 metres. In some areas, the fishermen can no longer take their fishing boats to sea due to the amount of coral they have to navigate before reaching the deeper waters. The harbours used previously for docking ships are no longer operational for larger boats as the water levels are much reduced. The reduction in fishing was reflected also in loss of productive assets (fishing boats, nets, etc). So far, the fishing community did not benefit from any significant assistance to recover the lost assets. As a result, most of the fishermen are unemployed in the absence of new job opportunities.

Aquaculture (Tambaks)

There were about 44 883 ha of brackish water shrimp/fish ponds (*tambaks*) in 2003, with a greater concentration in the eastern coast districts (Aceh Utara, Bireuen, Pidie) as indicated in Table 4. Some 15 531 hectares of these are estimated to have been damaged. Nearly 50 000 households and over 200 000 family members used to depend on these *tambaks* for their livelihood. The damage to the brackish water culture ponds is relatively dispersed, the worst affected districts being along the Northeastern coast: Aceh Utara, Bireuen and Pidie.

Table 4: Area (ha) of Brackish Water Ponds Pre-Tsunami and Damaged in NAD

	Pre-Tsunami ^{1/}	Damaged ^{2/}	Rehabilitated ^{3/}
Banda Aceh	667	726	
Aceh Besar	1 006	823	
Pidie	5 013	4 025	500
Bireuen	5 147	2 289	400
Aceh Utara	9 564	6 537	500
Aceh Jaya	317	317	
Lhokseumawe	1 028	726	
Total NAD	44 883	15 531	

^{1/} BPS NAD 2003.

^{2/} Based on the estimation done by Dinas Perikanan Prov, NAD, 28 January 2005.

^{3/} As of November 2005, Mission estimates.

Recovery Status. Compared to the recovery/rehabilitation in paddy production and fishing sector, the recovery situation in Tambak sector has been much slower due to large capital requirements, ownership complications, use of labour/mechanization issues and other set of complex issues. Only some 20 percent of damaged areas in Aceh Utara, Bireuen and Pidie are estimated to have been rehabilitated. Although cleaning out the ponds and repairing embankments in minor damaged areas could be done by local labours under cash-for-work programmes, much of this repairing work could be done quickly and easily with more equipment which needs to be purchased.

For ponds that were not affected and for ponds that have been cleared and repaired, there is a lack of initial capital for feed and restocking material. Most of the hatcheries and feed making units damaged have not

been repaired. The rehabilitation of the canals and irrigation system for aquaculture has been identified as another challenge.

With respect to the recovery salt ponds all of the salt pond owners in Pidie have reportedly restarted their business after UNDP Cash-for-Work projects cleared their salt fields.

4. OVERALL 2005/06 FOOD PRODUCTION AND SUPPLY SITUATION IN NAD

4.1 2005/06 Paddy Production and Supply Situation in NAD

Forecast of Paddy Production in 2005

Most affected areas lost the 2004/05 main season paddy crops (planted in October 2004 and harvested mostly from February to April 2005). The secondary crop is relatively small in affected areas, and paddy was planted in the area with irrigation schemes. During the mission's field visits in the province, team members observed the standing crop in the coastal areas and discussed with local government officials and farmers who were working in the field for paddy harvesting. The yield is estimated to be close to normal.

In non-affected areas, few changes are expected for dry season paddy production. The profitability of paddy production in Aceh has been reported as very good. A ban on imports of rice, which was imposed by the central government in order to protect farmers' prices and income for paddy production in early 2004 (except for a brief period immediately following the tsunami disaster), was extended to the end of 2005. However, the Ministry of Trade recently lifted the rice import ban by issuing an official license for Bulog to import 70 050 tonnes of rice from Vietnam due to low stock and high price in the country. The paddy and rice prices at the farm gate have been good (wet paddy at Rp.1 330/kg and dry paddy at Rp.1740/kg). Rice prices have largely been determined by private traders and rice millers operating in an open local market situation.

Rainfall/irrigation conditions and input supply are normal in non-affected areas.

As shown in Table 5, the Mission estimates 2005 aggregate paddy production in NAD at 1.43 million tonnes, some 7.5 percent below that in the previous year (1.552 million tonnes). This would result in reduction in rice production of about 75 000 tonnes. The new estimated paddy output is lower than that forecast in March Mission (1.47 million tonnes), reflecting the lowered harvested area estimated by government. The major reduction, compared to the previous year, takes place in the western costal districts, including Aceh Jaya, Nagan Raya and Aceh Barat Data.

Table 5: Forecast of 2005 Paddy Production in NAD

District	Area (Ha)				Production (MT)			
	2003	2004	2005	Percent	2003	2004	2005	Percent
	A	B	C	Cx2/ (A+B)	A	B	C	Cx2/ (A+B)
Sabang	34	10	39	177	73	21	86	183
Banda Aceh	174	312	19	8	664	1 183	73	8
Aceh Besar	37 334	40 979	36 202	92	161 711	176 600	157 459	93
Pidle	40 953	42 897	42 428	101	178 882	186 433	185 372	101
Bireuen	40 675	31 849	33 111	91	175 157	136 828	142 766	92
Aceh Utara	43 639	47 602	45 128	99	188 679	205 129	195 143	99
Lhokseumawe	1 417	1 473	914	63	5 430	5 684	2 582	46
Aceh Tengah	11 725	12 085	12 000	101	43 884	44 191	44 607	101
Aceh Timur	30 477	36 504	32 867	98	128 960	153 538	139 029	98
Langsa	2 273	1 732	2 157	108	8 766	6 627	8 376	109
Aceh Tamiang	21 943	18 060	20 622	103	91 920	75 691	87 133	104
Aceh Jaya	13 342	13 302	4 906	37	54 514	54 089	20 056	37
Aceh Barat	17 079	23 580	19 380	95	70 115	96 543	76 194	91
Nagan Raya	29 506	26 511	21 382	76	122 384	109 660	79 327	68
Simeulue	8 456	7 334	627	8	32 445	27 749	2 383	8
Aceh Selatan	14 153	17 018	17 600	113	59 610	71 274	74 406	114
Aceh Singkil	4 613	4 950	4 981	104	17 038	17 478	16 612	96
Aceh Barat Daya	22 253	11 267	13 730	82	93 781	46 600	57 832	82
Aceh Tenggara	13 909	17 937	21 269	134	57 296	73 237	87 628	134
Gayo Lues	13 681	15 566	14 000	96	56 227	63 527	57 568	96
NAD	367 636	370 968	343 362	93	1 547 536	1 552 082	1 434 632	93

Source: 2003 and 2004 data are from BPS; 2005 area and production are estimated by this mission based on the information provided by MOA of Aceh Province.

Rice Supply/Demand Balance in 2005/06 (April/March)

The Mission's forecast of the rice supply/demand balance for 2005/06 by district is summarized in Table 6. The rice surplus in 2005/06 is estimated at some 200 000 tonnes, slightly lower from a normal year¹¹. Therefore, in spite of local crop losses, overall food availability even in the affected areas is more than adequate to cover food needs. Given the relatively large rice supply available in the region, it is recommended to pursue local purchases whenever possible in order to meet food aid requirements in the province to prevent domestic food market distortions and protect paddy farmers' interest. The estimated balance is based on the following assumptions: population to grow at annual rate of 1.26 percent; half of missing persons due to earthquake and tsunami actually died in the disaster; and a milling rate of 65 percent from paddy to rice. Requirement levels from past years are assumed as: for food consumption 150 kg/caput of rice, feed and seed use 40 kg/ha, post-harvest losses 7 percent, and buffer stock 5 percent of consumption.

¹¹ Rice surplus for previous years is not calculated explicitly since the production figures for 2003 and 2004 have been revised.

However, given that the drop in rice production in 2005/06 marketing year is calculated at about 75 000 tonnes and the surplus of about 200 000 tonnes, the average surplus for the previous two years would be about 275 000 tonnes, assuming that the local consumption was about the same.

Table 6: Rice supply and demand balance (tonnes) in marketing year 2005/06 (April/March), by district

District	Production	Food Use	Total Use	Balance
Sabang	56	3 767	3 975	-3 919
Banda Aceh	47	28 610	30 480	-30 039
Aceh Besar	102 348	8 753	30 894	82 569
Pidie	120 492	78 874	96 789	23 729
Bireuen	92 798	55 405	68 510	24 312
Aceh Utara	126 843	80 103	98 503	28 374
Lhokseumawe	1 678	25 707	27 170	-25 490
Aceh Tengah	28 995	41 906	47 282	-18 287
Aceh Timur	90 369	51 009	63 736	26 633
Langsa	5 444	18 864	20 370	-14 926
Aceh Tamiang	56 636	34 609	41 816	14 820
Aceh Jaya	13 036	11 247	14 399	-969
Aceh Barat	49 526	27 596	34 369	15 478
Nagan Raya	51 563	21 932	28 614	22 953
Simeulue	1 549	9 088	10 480	-8 931
Aceh Selatan	48 364	30 400	37 036	11 331
Aceh Singkil	10 798	19 189	22 047	-11 249
Aceh Barat Daya	37 591	17 743	23 815	13 776
Aceh Tenggara	56 958	23 191	29 295	27 663
Gayo Lues	37 419	10 220	15 253	22 166
NAD	932 511	598 213	744 835	199 995

Source: Estimated by this Mission.

4.2 Prospect for Fisheries Production and Consumption in 2005/06

Fish output in 2005 is estimated at 73 687 tonnes from marine fishing and 18 205 tonnes from brackish water culture, 45 percent and 26 percent below normal, respectively from the year before. Based on this output and the projected population, per capita fish output will be reduced from some 38 kg in a normal year to some 22.6 kg in 2005. The worst-affected districts in fisheries sector include Sabang, Aceh Barat, Aceh Besar and Banda Aceh.

In a normal year, per capita fish consumption is estimated at some 27 kg and total consumption at some 114 000 tonnes, with the surplus of some 45 000 tonnes for selling in Medan or international export (Table 7). In 2005, per capita consumption is estimated to have been reduced to some 24.8 kg including WFP food aid, as a result of both reduced production and reduced purchasing power. The net fish import, mainly through WFP food aid, is estimated at 9 021 tonnes.

Table 7: Forecast of Fish Production, Consumption, and Balance in NAD, 2005

	2003		2005	
	Total (tonnes)	Per Capita (kg/person)	Total (tonnes)	Per Capita (kg/person)
Fish Output	158 578	37.6	91 892	22.6
Marine Fish	133 976	31.8	73 687	18.1
Brackish Water Fish	24 602	5.8	18 205	4.5
Consumption	113 899	27.0	109 973	24.8
Export (+) or import (-)	+44 679 ^{1/}		-9 021 ^{2/}	

Source: Estimated by this Mission.

^{1/} Export to outside of NAD.

^{2/} WFP imports.

4.3 Prospect for Supply and Demand for other Major Food in 2005/06

Prospect for Supply and Demand for other Cereals in 2005/06

In addition to paddy production, the province produced 67 386 tonnes of maize, 75 286 tonnes of cassava, and 18 697 tonnes of soybeans in 2003. Some 70 percent maize is produced in the district of Aceh Tenggara and production is very limited in other districts and mainly used for feed. The damage from the tsunami is estimated to be very small (571 hectares in Aceh Besar, 451 hectares in Nagan Raya, 350 hectares in Pidie, 331 hectares in Bireuen, 331 hectares in Aceh Utara). The maize supply and demand situation in 2005/06 is expected to be unchanged from the situation before the disaster. Damage to cassava and soybeans was also very limited (1 000 hectares of soybeans and 300 hectares of cassava). Soybeans are mainly used for food as tempe/tofu.

Prospect for Livestock Production and Consumption in 2005/06

Aceh is one of the few provinces in Indonesia where livestock numbers were increasing until the tsunami. Most of the large and small ruminants (cattle, buffaloes, goats, and sheep) were concentrated on the east and north coasts, with smaller numbers found on the west coast, while in Nias, the major livestock is pig. But poultry (meat and eggs) is popular on the west coast (Aceh Barat and Aceh Besar). Many farmers were keeping a few animals to cater their basic daily subsistence needs (milking cows, chicken, ducks, etc.), and many farmers were also keeping buffaloes as farm animal power. Most of these animals were lost in the most affected areas. Efforts are being made by the Government and FAO in assisting affected farmers and local livestock service authorities to develop livestock production through disease control, livestock breeding and local capacity building. Some 1 000 cattle are also planned for distribution by FAO.

The Jakarta Post Saturday, quoting senior government announced Friday that 109 chickens and ducks are believed to be infected with bird flu in Banda Aceh, the capital of Aceh Province in Indonesia. The poultry was slaughtered after a laboratory test showed that several of them had bird flu. The emergence of bird flu in the late November could add to the local people's hardship. Bird flu has been found in 23 out of the country's 30 provinces and seven infected people died.

5. COMMODITY MARKET ANALYSIS in NAD and NIAS

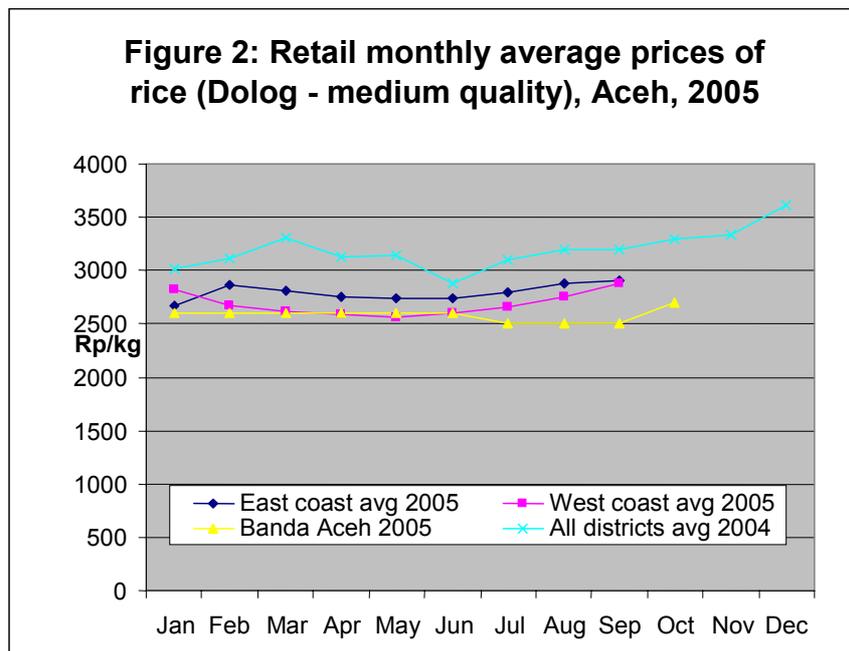
Markets were disrupted in most coastal areas of the province during the tsunami disaster. Although much of the physical infrastructure and most commodity stocks were destroyed, marketing activity quickly resumed primarily in temporary shelters in market areas and open market yards. There is a significant level of competition among millers as well as traders, and relatively good geographic distribution of small and medium size markets. Although, many grain shops are still not properly equipped, trading goes on nonetheless. However, on the island of Nias, the functioning of markets is more constrained by poor road conditions.

5.1 Rice Market

Markets for paddy rice, the principal grain in Aceh province, function through a marketing channel of farmers-millers-wholesalers-retailers-consumers forming a network of small town market clusters throughout the province. Although generally no long distances are involved, transportation costs are substantial due to poor road conditions and the means of transport in the interior (especially during rainy seasons). These costs have risen in recent months due to escalating fuel prices, rising wages and increased delivery time especially on the west coast. Since 1 October 2005 fuel prices increased by 126 percent resulting in a general price rise since then through multiplier effects. Also high level of losses at drying and milling stages of paddy were cited as resulting in high processing and marketing costs. Improvement of drying floors and milling machinery therefore remain a high priority for urgent assistance needs according to the local farmers and millers.

In the immediate aftermath of the tsunami, the price of rice increased dramatically but as a result of the large scale food aid provided, the medium quality rice prices quickly stabilized in almost all districts of the province. Since then, prices have been fairly stable with a slight dip around May/June following the main season harvest in April. Retail monthly average prices for the medium quality (Dolog rice) for 2004 and 2005 are shown in Figure 2 below. It can be noted that prices on the east coast in 2005 were slightly higher, by about Rp.200/kg (about US 2 cents), than the corresponding prices on the west coast. East coast districts are closer to the main trading centre of Medan and face higher demand for rice as compared to the farther away

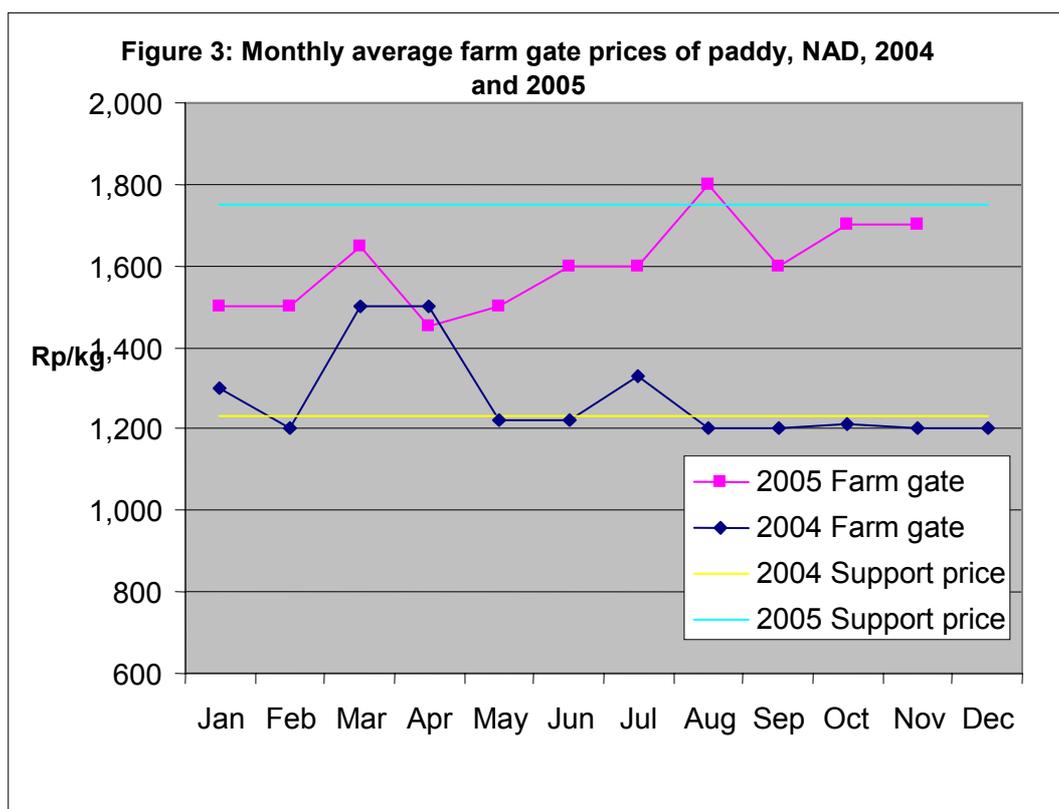
west coast districts. However, in recent months the gap between these two price series is eliminated as prices rose faster on the west coast due to an increase in fuel prices and transportation costs.



Source: Trade and Industry Department, Banda Aceh.

The monthly average prices of rice in 2005 were generally lower than the prices year before. Based on the January-September average for all districts, the 2005 rice price was lower by Rp. 374/kg than the corresponding price in 2004, in spite of the 6-9 percent national consumer price inflation for the January to September 2005 period. This is mainly due to the reduced purchasing power, the reduced effective demand this year following the tsunami disaster and the low quality of rice initially in the year resulting from weak drying conditions.

Farm gate prices in 2005 were generally higher than in 2004 primarily due to an increase in Bulog's procurement price from Rp.1230/kg in 2004 to Rp. 1750 in 2005 (see Figure 4) and possibly due to local purchases of about 40 000 tonnes by Bulog for food aid distributions. Interestingly the farm gate prices remain below the support price. In principle Bulog procures rice from millers, farmers and other traders. In practice, farmers may not necessarily sell directly to Bulog since Bulog buys milled rice or well dried paddy (with certain standard) which farmers are generally unable to provide due to lack of proper/adequate drying facilities. Thus the prices received by farmers from millers and traders can be lower than those paid by Bulog. Early in 2005 the farm gate prices were much below the support price due to the transportation and other disruptions during few months following the tsunami in December 2004. The administered price has been raised to 2 250 for 2006.



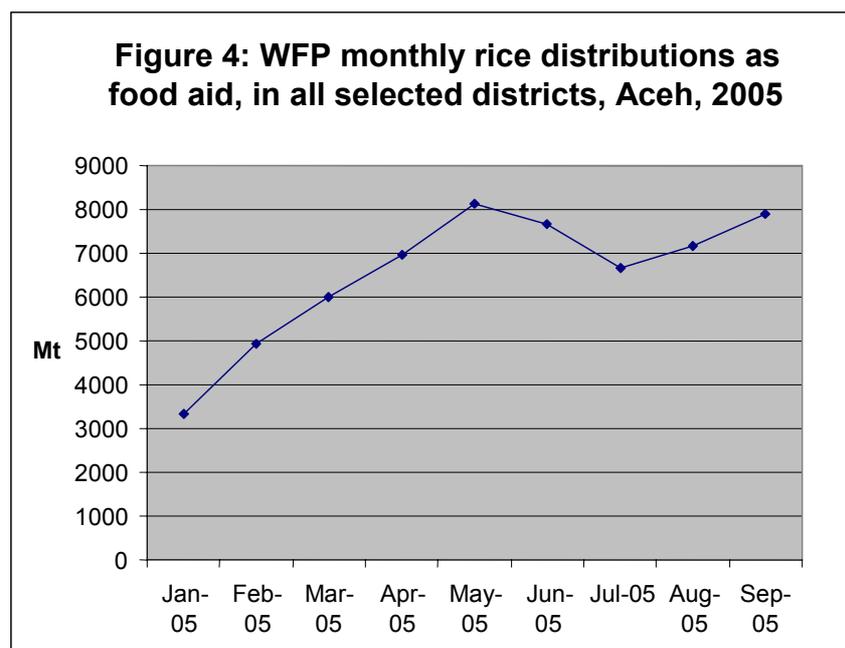
Source: Babad Pusat Statistik (BPS), i.e., National Statistical Office, Banda Aceh, Indonesia.

Role of Bulog – The National Marketing Agency

Bulog in Aceh Province maintains a security rice stock of around 30 000 tonnes. Bulog's current stock in Aceh is approximately 24 000 tonnes. Its warehouse capacity is 64 000 tonnes. Main off-take channels are RASKIN (6 500 tonnes/month), the Indonesian Army (TNI, 2 000 tonnes/month), WFP (5 300 tonnes/month) and Social Department (2 000 tonnes/year). Although Bulog is a key stakeholder in stabilizing the rice prices in Aceh Province, its capacity of intervention depends on the rice supply from other provinces and its market power is contained by the competition with private traders on local markets. Bulog buys rice or dry paddy against a set price of Rp. 2 790/kg and Rp. 1 725/kg, respectively. However, high demand in Medan drives the price of paddy up to Rp. 1 800/kg on local markets, reducing Bulog's capacity to meet its needs. Planned local procurement for 2005 was 78 000 tonnes. Of this amount, 34 000 tonnes was realized. The remaining was imported from Java. Roughly 50 percent of WFP local procurement from Bulog, therefore, originates from outside Aceh.

Impact on Trade and Traders

Food aid among other factors may account for part of the decline of the market share of traders. WFP's monthly rice distributions are shown in Figure 4. Since January 2005, average food (rice) aid distributions amounted to about 15 000 tonnes per month (with WFP 6 500 tonnes, RASKIN 6 500 tonnes, plus smaller quantities by NGOs, and the Social Welfare Department). This would suggest that the total projected rice aid distribution would amount to about 180 000 tonnes for 2005. In addition to food aid other factors such as the decrease in population due to the high death toll, loss of infrastructure which has caused traders to abandon their former activities and lack of any assistance programmes for traders may have caused this decline in business. The focus of the rice trade has shifted to Medan in North Sumatra. The seaside town of Maleuboh for example used to have 70 rice traders before the tsunami. Now there are only 5 traders left. A trader in Maleuboh reported that he used to sell around 100 tonnes of rice per month before the tsunami but now has a turn-over of only 5 tonnes.



Source: WFP, Banda Aceh Office.

Food Aid Sold/Exchanged in the Markets

Similar to the findings of earlier studies/reports by ICASERD and WFP, this mission also learned from traders that beneficiaries sometimes sell or trade their rations, particularly of low quality rice and canned fish. In Nagan Raya district on the west coast, for example, some beneficiaries especially those with a higher income status, trade a 20 kg bag of poor quality (Dolog) rice for a 15 kg of better quality local rice at a local shop. In Meulaboh, according to one trader, many beneficiaries trade at a well establish rate of 60 kg of their allocated rice for 30 kg of good quality rice plus Rp. 24 000.

In general, the beneficiaries do not like canned fish and they would prefer a commodity high in economic value such as sugar and coffee to replace the canned fish. People are used to eating fresh fish. Sales of canned fish to traders do therefore take place. The price offered is low and ranges between Rp. 500 to 2 000 per can. The mission also found a small quantity of WFP noodles and canned fish on the central market in Lhoksumawe, sold at Rp. 2 000/can.

It is evident, therefore, that for some beneficiaries, who are able to earn income from cash-for-work programmes, or working on construction or other jobs, food rations represent an income transfer. Under these circumstances, the challenge for international donor community is to come up with appropriate assistance programmes in order to re-build the livelihoods of these victims of the natural disaster.

5.2 Prices for Other Major Commodities and the Impact of Fuel Price Increase

Prices of major commodities have remained stable from January to September in 2005 (Table 8). Recent slight price increases in September could be due to the preparation of Ramadan. Generally, food demand is higher than normal situation during Ramadan. As shown in the table below, the aftermath of the earthquake in Nias resulted in a rapid increase of prices then stabilized over the period preceding the fuel price increase in October 2005. The limited impact of the earthquake on the price of commodities is due to the fact that the majority of commodities sold on Gunung Sitoli markets are provided by Sibolga and Brastagi (North Sumatra). This trade flow was not disturbed by the earthquake and was able to mitigate the potential price increase due to the reduction of the internal supply and reduced access to markets. From a food basket perspective, the stable price of commodities (including rice, vegetable oil and sugar), suggests that the living conditions of the households of Aceh province and Nias, are unlikely armed further by the price decline from 2004 to 2005, as they are net buyers.

In October and November, the prices of key commodities (including rice) at several food markets increased, as a result of one time increase of 126 percent in fuel prices on 1 October 2005, affecting especially remote areas mainly due to increases in transportation costs. The inflation rate reached 12.4 percent in Banda Aceh

and 8.6 percent in Lhoksumawe in October (up from 0.1 and 1.1 percent in September, respectively). With higher market prices of most of the commodities, people would have to spend more to maintain the same quantity and quality of consumption.

Table 8: Changes in Prices of Major Commodities in Selected Markets (Rp)

District		Commodity						Inflation rate (%)
		High quality rice (kg)	Medium quality rice (Bulog, kg)	Sugar (kg)	Brand vegetable oil (Btl, 620 cc)	Local vegetable oil (l)	Eggs (unit)	
Banda Aceh	Jan.	4 600	2 600		6 500	5 000		7.02
	May	4 600	2 600		6 000	5 000		0.59
	Sept.	4 500	2 500		7 500	5 500		0.12
	Nov.							12.45 ^{1/}
Lhoksumawe	Jan.	4 200	2 300		8 000	4 800		2.66
	May	4 200	2 300	5 500	8 000	4 800	700	-0.29
	Sept.	5 500	2 700		8 000	5 300		1.08
	Nov.	5 500		6 500		5 000-5 500	600-800	8.58 ^{1/}
Meulaboh	Nov	5 000	2 400		8 000		600	
Gunung Sitoli, Nias	Pre-earth	3 500			7 000	5 000	500	
	April	4 000			8 000	6 000	700	
	Pre fuel	4 700			7 000	5 000	500	
	Nov	5 700			7 000	6 000	600	

Source: Trade and Industry Department, Banda Aceh and Mission's Assessment

^{1/} Inflation rates as of October 2005. November figures are not available.

5.3 Fish Market

Aceh province is a surplus fish producer even with the estimated reduction by more than half in the annual fish catch from the usual level of 160 000 tonnes (ICASERD estimates). Although fish markets are functional, the reduction in total volume has reduced marketing and processing activities substantially. The estimated surplus of about 40 000 tonnes in 2005 is marketed to other regions or exported. ICASERD study conducted in May indicated that the flow of fish for marketing had switched from Medan to smaller coastal towns due to disruption in road network. By November, the east coast fish was beginning to flow back to Medan but west coast flow remained restricted to Calang, Meulaboh, Blang Pidie and Medan. Also the significant rise in fuel and transport cost is likely to promote trading at local centres rather than transport to Medan.

Prices of fresh fish have remained within the range of Rp.10 000 to 15 000 per kg before and after tsunami with a small positive trend in prices in line with the general price inflation. The decline in supply was seen to have been compensated by the decline in demand due to loss of purchasing power in the area. Shrimp prices on the other hand have risen significantly this year on account of reduced supplies and increased demand particularly by the relief workers. Currently the price of tiger shrimp is almost doubled from the pre-tsunami level of about Rp. 20 000/kg. It is anticipated that much of the fish markets can return to almost normal in 2006. Shrimp market, however, is likely to take much longer to return to its formal size due to medium term problems of tambak recovery.

6. LIVELIHOOD AND VULNERABILITY ASSESSMENT in NAD and NIAS

Despite the significant recovery operation there are still many people living in tents and temporary living shelters. Provision of permanent housing is necessary for re-establishment of livelihoods. However, this is not an easy task since many issues such as land titles, loss of land, availability of construction material and skilled workers, as well as social jealousy and community tensions need to be overcome.

6.1 Livelihood and Labour Movements

More than half of the affected people have regained some form of livelihood, as shown in Table 9 below. This may be their old profession such as farming or fishing or they may be engaged in new opportunities that have arisen such as cash for work programmes and construction work. The Emergency Food Security Assessment (EFSA) survey conducted by WFP in Aceh Province in October 2005, revealed that approximately 15 percent of those who were engaged in fisheries as their main occupation before the tsunami have shifted to casual labour. Similar percentage shift has affected former farmers as well as traders. Currently, unemployed range from 8.5 percent of former farmers to 20 percent of former traders, while almost all unemployed people before the tsunami remained unemployed.

Table 9: Aceh Province, Changes in Livelihoods after the Tsunami (percent)

Current livelihoods	Livelihoods – before the Tsunami (percent)						
	Fishing	Farming	Employed	Trade	Casual labour	Business owner	Others ^{1/}
Fishing	68.0	0.0	0.0	1.9	1.6	0.0	1.5
Farming	4.0	72.6	0.0	5.6	0.0	2.3	0.0
Employed	0.0	0.0	96.6	0.0	1.6	0.0	0.0
Trade	1.3	1.9	0.0	53.7	1.6	4.7	3.0
Casual labour	14.7	15.1	0.0	14.8	79.4	4.7	3.0
Business owner	1.3	1.9	0.0	3.7	0.0	72.1	1.5
Others ^{1/}	10.6	8.5	3.4	20.4	15.9	16.3	90.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: WFP, Follow-up EFSA in Aceh Province, October 2005.

^{1/} Including unemployed.

With loss of businesses and usual livelihood activities such as farming, fishing, etc. due to tsunami the labour market was disrupted following the disaster in December 2004. But field visits by the ICASERD team in May indicated that on the east coast economic activity began to recover within 2-3 months following the tsunami. This FAO/WFP mission field visits and interviews in November indicate that on the west coast wage earning activities have begun to re-establish after about 6 month period following the tsunami. Visits to IDP camps and barracks indicated that about 70 to 75 percent of the inhabitants are out working earning cash incomes. Most of these, however, have not re-established their former livelihoods yet. About 50 percent of the farmers and little less than 50 percent of fishermen have gone back to their usual work activities. Thus, although daily irregular job opportunities exist, re-establishing their former livelihood activities would take much longer.

As per the UNDP statistics construction industry in Aceh used to invest about US\$50 million a year before the tsunami. Now about US\$200 million is invested per month. This and various cash-for-work programmes have created significant employment even pulling labour from other regions outside Aceh such as North Sumatra and Java. Wage rates for unskilled labour, on the west coast, under the cash-for-work programs are currently as high as Rp.35 000/day (equal to the Government's indicative rate) plus many NGOs provide lunch; while the wage rate is Rp 25 000 for people building their own houses. The pre-tsunami wage rates were about Rp.20 000. Wage rates are slightly lower on the east coast owing to less construction activity and slower progress on re-construction of fish and shrimp farming (tambaks). Major investment projects such as the maintenance of the current road link on the west coast by Japan, building of the west coast highway by USA and reconstruction projects by the Asian Development Bank among others are expected to provide employment boom over next five year period. Impact of this on farming and fisheries, however, is rather uncertain and would depend on the relative profitability of these traditional sectors vis-à-vis the new employment opportunities.

Impact of Peace Agreement

Although it is too early to assess the impact of the peace agreement, the mission noted an optimistic feeling that the peace accord signed on 15 August, will contribute to speed up the post-tsunami recovery and ease labour movement. Aceh has been an area of civil conflict between the Government of Indonesia (GoI) and the Free Aceh Movement (GAM), in cases involving other actors such as anti-GAM militias, for the last 30 years. The conflict has resulted in almost 15 000 deaths. Prior to the tsunami, infrastructure was limited; poverty widespread and approximately 48 262 internally displaced as a result of the armed conflict, as of

June 2003. Reportedly, the peace agreement has improved the security environment. According to the World Bank, conflict levels dropped immediately after the tsunami, but then steadily increased until June 2005. In mid-September, incidents of conflict have continued to fall¹². The improved security environment will enable thousands of ex-combatants and conflict-displaced people to return to their home communities and their livelihoods including in the conflict areas the mountainous hinterland. In addition, the peace agreement is expected to facilitate access to resources (construction materials) needed to build houses and infrastructure. But the peace itself compounds the recovery programme and challenges remain in consolidating the outcomes. The mission was informed that conflict related IDPs are enrolled under a separate assistance programme implemented by the Government.

6.2 Vulnerable Population Groups and Dynamics

The current estimates of Internally Displaced People (IDP), range between 200 000 and 700 000. This wide range in estimates is mainly due to differences in definitions used for IDPs. By some organizations, the number reflects the estimate of people affected by the tsunami and March earthquake, irrespective whether they reside in temporary shelters such as tents and barracks, at host families, families hosting IDP, and people badly affected by the tsunami. In addition, many people have set up makeshift shelters near or on their land but remain connected to temporary living centre in order to qualify for humanitarian assistance programmes. In the strict sense of the word they are not IDPs but are living in temporary shelters. The proximity to their lands will facilitate their livelihood recovery.

The current estimate of IDPs according to BRR are 371 691. The BPDE (Badan Pengelola Data Elektronik) data from August 2005 estimates the number of IDPs at 477 416. According to these data, the majority of IDPs are living with host families, namely 250 874. A total of 65 580 IDPs reside in TLCs or public buildings and 58 366 are categorized as IDPs in self settlements. It records, 109 860 IDP households consisting of 36 397 children under five year of age, 193 304 male and 181 516 female. The highest number of IDPS are recorded in Simeulue, Banda Aceh and Pidie and Aceh Besar, which have more than 40 000 registered IDPs each. However, it is generally agreed that the BPDE list is not up-to-date and contains incorrect listings of IDP families. Co-operating partners for the General Food Distribution Programme of the WFP have been using a list which includes host families and people affected by the tsunami. The WFP is currently reducing the number of beneficiaries in line with the BPDE data and has requested co-operating partners to review their caseload in order to take account of the progress achieved in livelihood recovery and the re-establishment of functioning markets. Several criteria are used for reducing the number of beneficiaries in line with the BPDE data: (i) all people living in temporary shelters; (ii) people who lost their homes and are living with host families, (iii) single female or children headed households and; (iv) handicapped as a result of the tsunami.

Total requirement of new houses is estimated at 100 000 to 120 000 (including Nias and Simeulue). Of this requirement about 30 000 houses need to be relocated due to unsuitability of land. It's likely that these people will remain in temporary living centers during 2006.

The reasons for leaving the TLCs are mainly to search for better settlement or work opportunities elsewhere. Approximately, 67 000 people are still living in tents in Aceh Province (excluding Nias). Apart from lack of better alternatives, reasons for staying in tents include: proximity to place of business, protection of property (land), conflicts with other residents in barracks, better access to water sources and unwillingness to move unless to permanent housing. The government aims to have all people out of tents by the end of 2005.

In general water, sanitation and environmental hygiene are problematic in all temporary accommodations. Often there are no separate washing facilities for men and women and places are crowded.

More women than men died in the tsunami. An Oxfam report says that in 4 villages in Aceh Besar, male survivors outnumbered female survivors by a ratio of 3 to 1. In 4 villages in Aceh Utara, the female death toll made up 70 percent of all fatalities. This of course has great social implication. Traditionally, women are responsible for the housekeeping activities, retail trade, salt production, fish drying activities, brick making and labour on rice farms. Their source of income has been reduced significantly because they are currently jobless or part time workers. Accordingly, this limits their capacity to contribute towards household income and expenditure. For instance, as part time labourers in rice fields, women of Kuta Beuringen barrack, reported that they currently earn Rp.10 000/day as compared to Rp.20 000/day in salt production fields, pre-tsunami.

¹² From the beginning of this year until the end of August, 179 deaths and 172 injuries have resulted from 111 GAM-Gol conflict incidents. From mid-August to mid-September, only three cases, one resulting in a death, were reported in local media.

Currently, the most vulnerable population groups can be classified as follows:

- IDPs who have lost their access to land or main income source (fishing and *tambaks*, for example)
- Single female and child headed households.
- Handicapped and elderly.

6.3 Food Availability and Market-based Interventions

Markets are functioning relatively well and remain the main source of food as it was before the tsunami, except on the west coast. The west coast is currently relying more on food aid than on the market since full rations are provided as free food aid to the beneficiaries. According to the October EFSA conducted by WFP, the large majority of IDP households in the urban and peri-urban areas acquire more than 50 percent of their food from the market, against 40 percent in rural areas, despite substantial food rations from WFP, Government Raskin programme and other food donors.

Given that markets are functioning well through much of the affected areas and are well stocked with rice, beans, fresh vegetables, fish, and meat, some NGOs are exploring a more market based approach to food aid. CARE is piloting a cash/voucher system. IDPs are provided with food vouchers and Rp.50 000 in cash. The CARE vouchers can be handed in at selected traders for a maximum of 12 kg of rice, 1 kg of sugar, and 0.6 kg of vegetable oil on a monthly basis. Once a week the vouchers are collected from the traders and they are subsequently reimbursed. Food vouchers are a form of local procurement and WFP as a key stakeholder should use this opportunity to gain experience in providing food assistance in a situation of food surpluses and functioning markets. This CARE pilot project should provide an excellent learning opportunity and an institutional challenge to WFP to explore a more market based approach to food aid.

6.4 Food Access and Impact of Food Aid

As described in the previous section, the problem of food security in Aceh is not on the supply side. It is a problem of access to food. The affected people have suffered near total loss of household and productive assets and their traditional livelihoods have literally been washed away. This in turn has affected their income opportunities, and their ability to purchase sufficient food on the market. Although the livelihood recovery is encouraging, income opportunities of households remain below pre-tsunami levels and their ability to purchase sufficient food on the market is reduced accordingly. Recent price increase since October 2005 has further reduced their purchasing power. Food relief therefore will continue to be important beyond end-December 2005 as low purchasing power continues to be a major food security constraint at IDPs level.

Food aid has played an important role in preventing large scale food insecurity, malnutrition and epidemics, in stabilizing food markets, and in promoting livelihoods recovery. Eleven months after the tsunami, it can be said that most of the population in affected areas are no longer in a situation of food insecurity with possible exception of Nias and Simeulue. Most of the food insecure households can be found along the west coast, Nias and Simeulue followed by Northern Aceh. The population in the east coast is relatively better off.

The current food ration provided by WFP per person per month consists of 12 kg of rice, 0.6 kg of oil, and 1 kg of canned fish. Most people supplement their monthly ration with daily market purchases of fish and vegetables. People interviewed reported that their main concern was not food but support in terms of housing, equipment, start-up capital and agricultural inputs such as seeds and fertilizer. Their relative sense of food security may be due to the consistent supply of food aid during the past 11 months. Besides providing the important role of an economic transfer, food aid, as some beneficiaries interviewed responded, provides a sense of security. This indeed may be a very important function of food aid as many people have heard many promises but seen little delivered. The delivery of food aid over the last eleven months has enabled people to concentrate on recovering their livelihoods instead of worrying where their next plate of food was coming from.

Despite food aid, the main expenditure item remains food. The WFP/EFSA estimates that around 45 percent of all expenditure goes to food. People interviewed by the Mission ate fish and vegetables on a daily basis. These were purchased on the market. Skipping of meals does not happen on a large scale however some people may have to reduce their consumption. People seem to rely more on non-food coping strategies such as borrowing from relatives and searching for work further a field. It can be said that the humanitarian food aid during the past year has prevented people from adopting negative coping strategies, such as sale of productive assets and taking children out of school.

6.5 Nutrition and health situation in Aceh Province and Nias

Pre-tsunami poverty indicators and current malnutrition data indicate that the effected area is a chronic poverty zone. Approximately one-third of the population lives below the poverty line as compared to 17.9 percent for the whole of Indonesia. Almost three quarters of total expenditure is spent on food. Table 10 provides some selected poverty and nutrition indicators at district level.

Table 10: Pre-Tsunami Poverty and Nutrition Indicators

District	Population below the poverty line	Share of food in total per capita expenditure	Underweight children below 5 years of age	Household without access to clean drinking water
Simeleu	35.0	64.8	52.5	48.2
Aceh Singkil	29.5	71.8	30.6	70.9
Aceh Selatan	29.4	70.5	30.6	67.6
Aceh Tenggara	24.2	74.7	35.2	37.7
Aceh Timur	31.6	70.2	37.3	37.5
Aceh Tengah	28.9	69.1	20.8	47.6
Aceh Barat	36.1	69.9	52.5	67.6
Aceh Besar	30.5	70.6	48.9	48.3
Pidie	38.9	76.0	41.2	49.1
Bireuen	30.0	71.7	33.2	54.4
Aceh Utara	38.2	66.1	33.2	30.1
Nias	32.2	76.6	57.7	42.0
Indonesia	17.9	58.5	25.8	44.8

Source: WFP Food Security Atlas, 2005.

Malnutrition in Aceh Province is estimated at 20.7 percent. Severe malnutrition is 3.4 percent. According to the Department of Health 113 cases of severe malnutrition were identified during the past months of which 13 have died. Main causes of malnutrition can be identified as poor water and sanitation facilities in many of the camps visited by the Mission, infections, limited nutrition awareness of care providers, poor caring and hygiene practices, insufficient food intake due to poverty, and lack of access to health facilities.

Nutrition assessments undertaken immediately after the tsunami indicate an increased malnutrition particularly among children under five. However, a survey undertaken by UNICEF in March 2005, found that the prevalence of wasting in children under five was 12.2 percent, underweight 43.0 percent and stunting 38.1 percent, and thus comparable to pre-tsunami rates. To a great extent this can be attributed to the large scale food aid interventions. In October 2005, UNICEF and MoPH undertook a second surveillance survey in 18 districts. The results of the survey are still being analyzed and were not available to the Mission. As an integral part of this surveillance survey, CARE carried out a baseline nutrition and health survey in 3 districts, Banda Aceh, Aceh Besar and Simeulue). Some key results from this survey are summarized in Table 11.

Table 11: Nutrition Status in Selected Districts (percent)

	Banda Aceh	Aceh Besar	Simeleu
Food assistance			
- Receive food ration	62.0	41.5	90.0
- Entire ration consumed within Household	62.0	91.5	87.7
- Eat 3 or more meals a day	85.0	85.5	94.3
Malnutrition			
- Acute malnutrition children under 5	8.7	9.1	16.6
- Acute malnutrition among IDP children	12.5	8.3	17.6
Health			
- Anaemia, Children under 5	45.9	50.8	57.1
- Anaemia in pregnant women (mild and moderate)	51.2	50.8	70.6
- Child ill during past 2 weeks	42.0	47.2	37.1

Source: CARE, Nutrition Survey, October 2005.

Interestingly, this table shows that prevalence of wasting (acute malnutrition) is above acceptable (>10 percent) levels in Simeulue and IDP children of Banda Aceh and Simeulue. The prevalence of anaemia in children and mothers is also high across the three districts. Although these recent results cannot be generalized to all Aceh Province, they confirm at some extent that malnutrition in these districts continues to be a chronic and long term problem as revealed by previous assessments. They also suggest exploring more the issue of possible difference of nutrition status between IDP and non-IDP children in some districts, contrary to previous findings. As for IDPs living in tents, the health situation is more concerning with regard to the poor water and sanitation situation. The weak quality of tents, the large size of household per tent (up to 8 family members) and the rainy season increase the exposure of IDPs to diseases.

In North Nias, the local department of health conducted a quick nutrition survey covering 2,932 children (3 villages per sub-district) in June, 2005. The survey revealed that malnutrition rate is 25.1 percent while severe malnutrition rate is 8.7 percent in the district. Severe malnutrition figures were particularly high in some sub-districts: Alasa (20.5 percent), Olora (11.3 percent) and Hiliduho (11 percent).

Attendance to village level integrated health posts (*Posyandu*) is limited. The CARE survey found that between 38 and 46 percent of children under five did not visit a *Posyandu* during the previous three months of the survey. Pre-tsunami there were a total of 6,247 *Posyandu* in the 13 affected districts of Aceh province. According to the department of health, only 25 percent of the *Posyandu* are currently active. *Posyandu* play a key role in immunization campaigns, growth monitoring, nutrition education, and as a referral system for malnourished children. Revitalizing the *Posyandu* system is therefore a key in early detection of malnutrition. Elsewhere in Indonesia, WFP has been successful in revitalizing the *Posyandu* activities through the introduction of a mother and child nutrition activity in which children under five and pregnant women and nursing mothers receive monthly rations of fortified food. The MCN programme has been piloted in Aceh on a small scale. In collaboration with UNICEF and CARE the MCN programme should be enlarged with the dual objective of nutrition rehabilitation and reactivation of the *Posyandu* system.

6.6 Recommendations:

Continued targeted food assistance

With the shift from relief operation towards recovery and reconstruction, food aid has still an important but limited role to play as an income transfer and as nutrition support to the most vulnerable where access to markets is constrained. Food and non-food aid remain necessary as long as the livelihood recovery programmes are not well established. Phase out should therefore go hand-in-hand with the livelihood recovery. Possible indicators for livelihood recovery need to be developed. In this process the negative affects of food aid such as market distortions and creating dependencies should be taken into account.

As of September 2005, the WFP caseload for General Food Distribution was 635 190 beneficiaries. It includes people affected by the tsunami and earthquake and IDPs living in temporary living centres and with host families. WFP is in the process of reducing the caseload in line with the government estimation of the number of IDPs. Although it is generally recognized that the IDP list maintained by BPDE is fraught with inconsistencies and names appearing on the list are not correct, the estimated total number per sub-district is used as a guideline to strengthen the targeting of the food assistance. Current criteria used for targeting include, IDP as defined by Governor's decree (includes people on their original land but in makeshift shelters), people who lost their homes and are living with host families (this category is no longer included in the Gol list of IDPs) and specific vulnerable groups such as single female headed households, and disabled people as a result of the tsunami or earthquake. The November caseload was 586 000 and for December the caseload will be further reduced to 518 000. The official IDPs list, published by BRR as of 12 October 2005 shows only 371 691 names on it.

The Mission suggests changing the emphasis of the WFP activity from General Food Distribution to Targeted Food Distribution for Livelihood Recovery. This should include improved targeting and avoid general food distribution. Strengthening the targeting of the general food distribution is one of the main challenges. Currently distribution is characterized by a high inclusion error with people receiving food aid who should no longer be eligible for receiving aid, for example, host families whose guest IDPs have left long time ago. Reducing the numbers based on the BPDE data is a first step. However, more is needed to focus the aid to those that really need it. Thus an improved targeting of the beneficiaries to minimize the inclusion error indicated by some NGOs in the field to ensure that the aid goes to those who need it the most.

The WFP Food Security Assessment provides some indication of groups most in need of food aid. A possible, but simple and rough, approach to improved targeting and a basis for phase-out strategy could be to organize a perception based study in which food distribution points are classified into four categories ranging from best to worst based on perception of UN and NGO staff and local government officials on livelihood and recovery indicators, and access and nutrition indicators. Summing the scores of these indicators provide a subsequent ranking of all food distribution points and as such may provide a basis for a phase-out strategy.

There is a real opportunity for WFP to explore the possibility of a market-based food assistance approach. In most areas, markets are functioning and there's no constraint in food supplies. CARE with support from WFP is currently implementing a three month pilot project in which beneficiaries are provided with cash and food vouchers which can be exchanged for rice, vegetable oil and noodles at selected traders. The food vouchers could be seen as a form of local procurement. Evaluation of the programme will be available beginning of 2006. Pending these findings and given the market and access environment in Aceh a positive involvement from WFP as a key stakeholder would be recommended as it provides a unique opportunity for WFP as a food aid institution to gain experience with a market based food assistance scheme.

Given the fact that most people are able to procure supplementary food such as fish and vegetables from the market and that people have some form of access to income generating activities, the primary role of food aid is an income transfer that enables people to direct their attention and savings to the recovery of their livelihoods. Provision of canned fish could therefore be phased out. In general, people do not like the canned fish and it has limited economic value in exchange.

The PRRO has an option for full (12 kg) and reduced ration (11 kg) per person per month. The idea is that not all IDPs would require a full ration. However, given the operational difficulties of providing either a full or reduced ration the only way to implement this is to do it on a geographic basis which would undermine the basis for providing a reduced ration. It is therefore recommended to provide a uniform ration to IDPs and develop a phase-out plan based on strengthened selection criteria.

One of the key constraints for more elaborate food assistance programmes is the limited capacity of local co-operating partners. Due to the conflict very few NGOs were operating in Aceh before the tsunami. Co-operating partners therefore have limited long-term involvement with the local communities. Furthermore many staff has been newly recruited and is unfamiliar with the running of humanitarian assistance and recovery programmes.

As there are other cash opportunities available, FFW may not be able to mobilize sufficient participants. As a solution for targeting with the argument that only those that really need it will participate, the FFW should be taken with caution. Within a (sub-) village, there are strong community obligations to participate in a community scheme whether you are poor or better off. The self-targeting element of FFW may therefore not be applicable.

Given the chronic malnutrition status of children in Aceh Province, Nias and Simeulue and the need to revitalize the Posyandu at village level, the Mission recommends the expansion of the Mother and Child Nutrition pilot projects to areas with high level of child malnutrition. These should be determined based on the outcome of the UNICEF nutrition surveillance survey available at the end of December.

Other assistance:

Small traders seems to be the only group that has been adversely affected by the tsunami but fell through the cracks of various assistance programmes. Recent WFP survey found this group facing the highest unemployment rate. Assistance to small and petty traders whose livelihoods were destroyed by the disaster may be considered. This would also help strengthen marketing/economic activity and improve general marketing efficiency.

Farmers typically incur heavy losses at drying and milling stage due to lack of good facilities. In addition if the paddy is not dried up to the standards required by Bulog (the state procurement agency), farmers do not necessarily benefit from the Bulog's support price. Hence, examination of feasibility, modality and effectiveness of assistance/financial facility may be undertaken.

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ANNEX

Table A.1: Summary of wetland and land area (ha) affected by the tsunami, by category

	Total wet land (2003) ^{1/}	Land damaged (by degree of damage) ^{2/}				
		Minor	Moderate	Severe	Lost	Total
West Coast		2 920	5 840	17 520	2 920	29 200
Aceh Besar	30 542	693	1 386	4 158	693	6 930
Aceh Jaya	12 652	885	1 770	5 310	885	8 850
Aceh Barat	54 170	297	594	1 782	297	2 970
Nagan Raya	33 818	396	792	2 376	396	3 960
Aceh Barat Daya	18 249	308	616	1 848	308	3 080
Simeulue	21 480	341	682	2 046	341	3 410
East Coast		4 150	4 150			8 300
Pidie	38 144	1 430	1 430			2 860
Bireuen	22 958	1 055	1 055			2 110
Aceh Utara	39 777	6 10	610			1 220
Aceh Timur	36 168	1 055	1 055			2 110
Total NAD	391 066	7 070	10 000	17 500	2 900	37 500

^{1/} BPS NAD 2003.

^{2/} Ministry of Agriculture, FAO, Agriculture Sector Framework for Rehabilitation and Reconstruction of the tsunami-affected areas of Aceh and North Sumatra, Indonesia.

GLOSSARY

BPS = Babad Pusat Statistik i.e., National Statistical Office, Banda Aceh, Indonesia

Bupati: District level authority

Desa: Village

Dinas Perthanian (Agriculture Service, District level)

Kabupaten: District

Kecamatan: Sub-District

Kota: Municipality Kreung (Kr): River

NAD: Nanggroe Aceh Darussalam (Province of Aceh)

Posyandu = The village level integrated health posts

RGDP: Regional (Province level) Gross Domestic Product

Tambaks = Aquaculture using brackish water, fish and shrimp ponds

This report has been prepared by Kisan Gunjal, Cheng Fang, Siemon Hollema, and Issa Sanogo under the responsibility of the FAO and WFP Secretariats with information from official and other sources. Since conditions may change rapidly, please contact the undersigned for further information if required.

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