



Title: MADAGASCAR: FAO/WFP MISSION TO ASSESS THE IMPACT OF CYCLONE GRETELLE ON FOOD ...

FAO GLOBAL INFORMATION AND EARLY WARNING SYSTEM ON FOOD AND  
AGRICULTURE  
WORLD FOOD PROGRAMME

## SPECIAL REPORT

# MADAGASCAR: FAO/WFP MISSION TO ASSESS THE IMPACT OF CYCLONE GRETELLE ON FOOD AND AGRICULTURE

**23 April 1997**

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## 1. OVERVIEW

Following the cyclone "Gretelle" on 23-24 January 1997, the Government of Madagascar requested assistance from FAO and WFP to evaluate the loss and damage caused to food production and agricultural infrastructure by the cyclone, to estimate the food supply situation for 1997 and identify the actions needed to rehabilitate the agricultural infrastructure. An FAO/WFP Mission was fielded from 10 to 29 March 1997 and visited the six sub-prefectures affected by the cyclone, namely, Befotaka, Farafangana, Midongy-Sud, Vangaindrona, Vohipeno and Vondrozo. The Mission met with concerned senior government officials at the national and local level, farmers, the business community, representatives of NGOs, UN agencies and bilateral donors. The results of socio-economic impact surveys and evaluation reports on the nutritional status in the

affected areas were also reviewed.

The Mission estimated the total crop loss caused by the cyclone at 7 000 tons of rice, 123 500 tons of cassava and 8 000 tons of cash crops (mainly coffee). Despite a potential fall in yields as a result of the delay in transplanting the second season rice, a good overall harvest for 1997 is forecast mainly due to good climatic conditions following the cyclone. The aggregate cereal production in 1997 is estimated at 2.7 million tons, about the same as in 1996.

In view of the good production prospects, the bulk of the shortfall could be covered locally. However, during the current inter-season period, emergency food aid will be required for the malnourished children and pregnant and nursing mothers in the affected area, and for the people living in the sub-prefecture of Farafangana (all rural municipalities), 5 municipalities in the sub-prefecture of Vohipeno situated in the lower Matitanana, 10 municipalities in the sub-prefecture of Vangaindrano and 3 municipalities in the sub-prefecture of Vondrozo, totaling 274 172 people. The total emergency food aid requirement is estimated at 4 754 tons of rice, 791 tons of pulses, 92 tons of vegetable oil, 65 tons of sugar, 38 tons of powdered milk and 154 tons of corn and soybean blend (CSB). Three hundred tons of rice and 300 tons of CSB are already available in the country, and the balance has yet to be covered.

The Mission identified urgent measures to rehabilitate the agricultural sector: these include seed distribution and programmes to rehabilitate cash crops, irrigation schemes and access roads.

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## 2. AGRICULTURE IN THE MACRO-ECONOMIC CONTEXT

[ Sources of data and information for this section include: Rapport économique, 4ème trimestre 1996 : Banque Mondiale, Mission Résidente de Madagascar; Madagascar: Country Information Brief, 1996 , Food and Agriculture Organization of the United Nations, Country Representation Mission and FAO/WFP Mission Report , 1994 ]

The economic stabilization programme which began in 1995 continued through 1996 with some positive results: the annual inflation rate fell from 37 percent in 1995 to 8 percent in 1996, and the real base lending rate applied by the Central Bank fell from 33 percent to 17 percent during the same period. With the slowdown in inflation, the real base lending rate became positive in 1996. Overall public debt fell from 6 percent of GDP in 1995 to 4.5 percent in 1996. The trade balance improved slightly by 2.5 percent over 1995 mainly due to increased exports from duty-free corporations and shrimp exports. Following the increase in net external assets, which almost doubled between December 1995 and December 1996, official foreign exchange reserves almost reached three months' worth of imports by the end of 1996.

Agriculture plays a predominant role in the economy of Madagascar, contributing about 35 percent to GDP and employing over 70 percent of the active population. It accounts for 60-65 percent of the national export

revenues. The Economic Policy Framework Document (1996-1999) stresses increased producer participation in the process of establishing the market economy in order to enable them to gradually take over the animal health support services, water management, credit and input marketing.

Only 3 million of the potential 32.8 million arable hectares are farmed each year because of the many constraints on agriculture, mainly the following: insufficient rural credit; a shortage of basic infrastructure needed to develop production, particularly roads and irrigation systems; poor soil fertility aggravated by serious environmental degradation due to deforestation and erosion; and the low technological level of the farms. The main food crops are rice, which is the main staple and covers 61 percent of the farmed areas and 82 percent of the irrigated areas, maize, cassava and potato. The industrial crops are sugar cane, ground nuts and cotton, while export crops are coffee, cocoa, pepper, vanilla, cloves and sisal.

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## 3. CYCLONE GRETELLE

### 3.1. Intensity

Cyclone Gretelle hit the Madagascar coast near Farafangana on 23-24 January 1997. It reached the coast on 23 January and the eye of the cyclone hit Farafangana, in the south-east on 24 January. Winds were recorded at over 220 km/h. It was more violent than the cyclone Bonita which hit the country in 1996.

Cyclone Gretelle caused extensive flooding due to overflowing of three main rivers: Manambatra (3 meters flood) in Farafangana; Mananara (10 meters flood) in Vangaindrano; and Matitana (4.50 meters flood) in Vohipeno. It also caused flooding in Midongy-Sud in the Itonampy Valley through most of the tributaries and streams which drain the watersheds.

In addition to these main basins and the flooding by many rivers in the region, virtually all the lowlands throughout the affected area were flooded for varying periods.

### 3.2. Crop Damage

Crop damage varied from one region to another, being greatest in Farafangana, followed by Vangaindrano. Within each region, crop damage was unevenly distributed. The most serious damage was caused by (i) wind in the Farafangana region, where damage to perennial crops was greatest (uprooted trees, split trunks, total defoliation, fruit losses) and (ii) prolonged flooding in Vangaindrano. The crop damage is detailed below.

#### Rice

In the affected area there are three main types of rice: (i) first season rice (vary hosy) which is sown in June and harvested in November/December; (ii) second season rice (vary vatomandry) sown in December and harvested in May and (iii) upland rice which is planted in November and harvested in May.

The relatively small output of first season rice, largely harvested before the cyclone, was seriously reduced by drought in the last quarter of 1996. This low output was compounded by severe damage to stocks that remained when the cyclone struck, mainly by flooding in the most seriously affected areas, especially in Vangaindrano. In these areas, the output of the first season is not available for the affected populations. However, in a few less severely affected zones, there are still some very small stocks of first season rice.

For second (main) season rice, about 60 percent of the area was already transplanted when the cyclone struck. However, virtually all the transplanted crops and the nurseries were destroyed as a result of prolonged submersion and the siltation of the paddy fields. Nevertheless, due to the frequency of floods, rice farmers have learned to set up dry nurseries and the availability of the rice seedlings has helped to restore the areas planted with vatomandry to their normal level. The main consequence of the cyclone is the delay in the rice-growing calendar, whose peak harvesting period will be pushed to mid-July instead of mid-June, depending on the timing of transplanting. Since the plants used for the new transplanting are older, this may affect yields slightly at the next harvest. However, current good climatic conditions for rice should lead to a large harvest in mid-June to mid-July. The Mission estimates the second season rice harvest reduction in the affected areas at about 10 percent.

Upland rice damage was limited to the land-slips on the cropped slopes within the affected areas. However since the current rainfall situation is good, this season's upland rice output should be satisfactory. The total loss of the two seasons' (1997) rice output is estimated at 7 000 tons.

### **Cassava**

The damage caused by the cyclone to cassava was mainly to the fairly young plants, where the roots were undergoing tuberization or where the tubers were still underdeveloped. The outcome was total destruction of plants in the flooded areas (particularly the lowlands but even at medium altitudes, due to the exceptionally high floodwater), and wind damage compounded by the effect of the rainwater on the roots. In addition to the substantial reduction in cassava output, estimated at 60 percent, the cyclone has shifted the harvesting calendar in the affected areas. Except for the plots in the interior, harvesting cannot begin before July-August and will be spread over the fourth quarter of the year. The total loss of cassava's output is estimated at 123 500 tons.

### **Coffee**

Damage to coffee production was caused mainly by winds and to a lesser degree by floods, which mostly affected the plantations in the lowlands and on the lower parts of the hillside coffee lands in the severely flooded areas. Even though coffee production has been seriously affected throughout the area, the greatest loss and damage was in the region of Farafangana, where output will be drastically reduced in 1997.

The greatest long-term damage to coffee was caused by falling shade trees in the plantations. In the

Farafangana region, the total production loss for the 1997 season is estimated at 85 percent. In the other affected areas (Befotaka, Midongy-Sud, Vangaindrano, Vohipeno and Vondrozo), production loss is put at between 30 and 45 percent. For the entire affected area, the aggregate loss in the 1997 output is estimated at about 6 600 tons, or 60 percent of total output in the affected zone, and between 8 and 10 percent nationwide.

### **Pepper**

Pepper farming in the affected area is based on the use of the coffee shade trees (Bonara - *Albizia lebeck*, mainly) as supports for the pepper plants. Even though some damage was caused to the pepper plants directly by winds, the worst damage was the effect of the cyclone on the trees used as supports, which were split, uprooted or bowed over.

The harvest of green pepper coincided more or less with the period of the cyclone. It was therefore directly affected by Gretelle but remains marginal in comparison with the main harvest six months later. However, this latter harvest is the result of flowering which occurred during the first quarter of the year, and has therefore been directly influenced by the cyclone. The Mission noted flowering of this kind in the affected plantations. The development of creepers in the coming months will condition the next harvest. The reduction in pepper production due to the cyclone in the Farafangana region, which accounts for over 90 percent of pepper production potential in the affected area, is estimated at 60 percent. The total loss is estimated at 235 tons, or a reduction in national pepper output of 10-12 percent.

### **Cloves**

Most of clove production in the affected area is concentrated in the south of Vangaindrano in the Matanga region. This crop is generally very sensitive to cyclones which can cause substantial post-cyclone mortality (as was the case for Geralda-Bonita cyclones in the Toamasina region). Loss and damage to this crop seem to be average, and it is expected that the vegetation will revive very well, since the main production region was on the southern edge of the part affected by the violent winds. However 1997 output is severely threatened, partly due to the sensitivity of the plant and partly because of the way in which the output of this crop fluctuates (i.e. a good year output is usually followed by a bad year), since the 1996 harvest was better than average. Damage to production in the affected zone is estimated at 1 050 tons (85 percent) which will result in an overall loss at the national level of 7 to 10 percent.

### **Litchi**

The most damage was concentrated in Farafangana and the south of Vohipeno. This perennial crop was the most seriously affected of all by the cyclone because of the large number of trees destroyed, estimated at about 40 percent in the Farafangana region. The overall fall in production in the whole of the affected area is put at 85 percent. However, the fall in production will not affect the regional and national export potential because the affected zone accounts for only a very small part of exports.

The estimated losses of the main crops grown in the area affected by the cyclone are summarized in Table 1.

#### **Table 1: Estimated main crop losses by Cyclone Gretelle (in tons)**

<b>Crop</b>	<b>Estimated loss</b>
Rice	7 000
- first season rice	1 400
- second season rice	5 600
Cassava	123 500
Coffee	6 600
Pepper	235
Gloves	1050

### **3.3. Damage to Livestock**

The national herd comprises over 10 million head of cattle (mainly zebus), 2 million sheep, 900 000 pigs, and 20 million poultry birds. Livestock losses were relatively small compared with crop losses. The highly flooded areas suffered more losses. Damage to poultry was more serious, but difficult to quantify.

### **3.4. Damage to Forestry**

The most serious losses were in the primary forests, particularly in the coastal zone. They were very serious in the No. 8 Special Reserve at Manombo (ANGAP - Association Nationale pour la Gestion des Aires Protégées). Judging from the 1956 experience, it should take about twenty years to regenerate the forest.

### **3.5. Damage to Fisheries**

The main physical damage relates to the loss of canoes and the nets along the coastline caused by the flooding of the rivers. Traditional fishermen in the regions of Farafangana and Vaingaindrano make up about 5 percent of the total population. The losses of the fishing population are substantial, and could reach around 450 000 FMG for "canoe-net" equipment. As a result of this, some of the people working in this trade are now unemployed because of a lack of equipment.

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## **4. FOODCROP PRODUCTION**

## **4.1 Food Production Trends: 1990-1996**

Total production of the main foodcrops increased by 3.4 percent between 1990 and 1996, at the rate of 0.5 percent a year, while the paddy rice and cassava outputs increased by 3.3 percent and 2.7 percent, respectively, during the same period (table 2). The annual growth in output of the main foodcrops remained far below the population growth rate, which is estimated at 2.8 percent per year.

**Table 2: Trends in national production of main food crops, 1990-96 (in thousand tons)**

	1990	1991	1992	1993	1994	1995	1996
<b>Cereals</b>	<b>2581</b>	<b>2496</b>	<b>2588</b>	<b>2723</b>	<b>2519</b>	<b>2634</b>	<b>2734</b>
Rice (paddy) <sup>1</sup>	2421	2342	2450	2550	2357	2450	2550
Maize	155	145	130	165	155	177	180
Wheat	5	9	8	8	7	7	4
<b>Other crops</b>	<b>3080</b>	<b>3097</b>	<b>3005</b>	<b>3160</b>	<b>3218</b>	<b>3155</b>	<b>3169</b>
Cassava	2292	2307	2280	2350	2360	2400	2353
Sweet potato	486	488	450	498	560	450	500
Irish potato	272	273	275	280	270	275	280
Groundnut	30	29	22	32	28	30	36

**Source:** Ministry of Agriculture and Rural Development, February, 1997.

1 The crop shown under the calendar year refers to the first season crop harvested at the end of the previous year together with the main second season and the upland crops harvested in the year shown.

## **4.2 Production Outlook for 1997**

Despite a slight decline in yields as a result of the late transplantation of the second season rice, the Mission expects a good harvest for 1997, mainly due to favorable climatic conditions. The Mission forecasts cereal production in 1997 at 2.7 million tons which is about the same as in 1996, and includes 2.5 million tons of paddy rice, 180 000 tons of maize and 5 000 tons of wheat.

## **4.3 Agricultural Rehabilitation Needs**

Cyclone Gretelle caused damage to the agricultural sector in the south-east, particularly in Farafangana and Vangaindrano. Urgent and medium-term measures to rehabilitate the sector have been identified; these include seed distribution and the revival of cash crops. The serious damage to the rice irrigation schemes is the combined consequence of disastrous unstream degradation and the poor state of the hydro-agricultural

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combined consequence of disastrous upstream degradation and the poor state of the hydro-agricultural infrastructure. Midongy-Sud and Befotaka were landlocked due to landslips, the destruction of bridges and gulleying. Urgent actions should be taken to safeguard the next first season rice, with programmes to rehabilitate irrigation schemes and access roads.

The Mission's findings and proposals for agricultural rehabilitation are being finalized and will be communicated to donors by FAO's Special Relief Operations Service (TCOR). While it is possible to implement "food-for-work" programmes for the rehabilitation of some hydro-agricultural infrastructures and feeder roads, this approach appears to be difficult for certain types of rehabilitation which require a high level of technical skills.

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## 5. FOOD SUPPLY SITUATION

The food situation for the people in the affected area is precarious, particularly during the inter-season period, due to the loss and damage to crops and the low output of the first season rice. Cassava, which is eaten during the inter-season period, is now being harvested 5 to 6 months after planting in the coastal areas where population pressure is highest, in order to help solve food problems. Yields are very low because the crop is being harvested before maturity, and because of the damage to this plant by the cyclone (root rotting). The output of other inter-season crops (breadplant, taro and banana) has also been drastically reduced due to the cyclone damage. The food situation has become so tight during the current inter-season period that, in most severely affected areas, people are increasingly eating wild plants (tavolo, hofika, and viha).

Following the cyclone, the prices of certain staples rose sharply in the areas most affected by the disaster. The price spiral has been highest in Midongy-Sud and Befotaka, mainly because they were inaccessible due to the destruction of bridges and gulleying during the passage of the cyclone. In Midongy-Sud, the price of rice at the beginning of January 1997 was 1 750 FMG per kg, but by March it had risen to 3 240 FMG per kg, an increase of 85 percent. At Befotaka, the price of rice which was 1 050 FMG per kg at harvest in December 1996, rose to 2 700 FMG in March 1997, a 157 percent increase. Conversely, livestock prices have fallen by at least 20 percent in most markets in the affected area, which suggests that the demand has slumped as a result of the deteriorating purchasing power of potential purchasers. Many farmers are selling substantial numbers of livestock (mainly poultry) in order to meet their subsistence needs during this difficult inter-season period. Fish prices in the affected area have also slumped drastically, mainly due to a weak demand, making them unprofitable for the fishermen. Lobster fishing, which is a major source of income, will open on 1 May 1997. If this product fetches good prices, the fishermen should improve their economic situation. However, those who have lost their fishing gear and equipment will not benefit from it. Prices of selected main foodcrops and non-food items are summarized in Table 3.

**Table 3: Prices of Selected Foodcrops and non-Food Items by Affected Region, March 1996 - March 1997 (Malgashe Francs/kg).**

	Rice			Beans			Peanut			Meat (beef)			Salt			Sugar		
	'96	'97	97/96	'96	'97	97/96	'96	'97	97/96	'96	'97	97/96	'96	'97	97/96	'96	'97	97/96
	%			%			%			%			%			%		
Befotaka	1800	2700	50	950	1440	51	1300	1800	38	-	-	-	1300	2700	107	5000	11500	130
Farafan	1980	2160	9	2100	2500	19	2400	2600	8	7000	4000	-40	900	950	6	3100	3250	5
Midong	1800	3240	80	1260	2160	71	1500	2400	60	-	-	-	1250	3600	188	4000	8000	100
Vangan	1980	2520	27	3000	3200	7	2800	3000	7	6000	5000	-20	900	1000	11	3200	3400	6
Vehipen	2000	2150	8	2880	4500	56	1600	1700	6	5500	3000	-45	1500	1650	10	5400	6480	20

**Source:** Mission's interviews. Midong=Midongy; Farafang=Farafangana; Vangan=Vangaindrano; Vehipen= Vehipeno.

## 5.1 Cereal Supply/Demand Balance for 1997/98

In view of the importance of cereals in the diet of the Malagasy population, which account for over one-half of their calorie intake, the following analysis of supply and demand only relates to cereals.

Given the replanting of the second season rice and if the current threat of locust outbreak is effectively controlled, the Mission forecasts cereal production in 1997 at 2.7 million tons, similar to 1996, which includes 2.5 million tons of rice, 180 000 tons of maize and 5 000 tons of wheat.

Since most of the farmers usually sell the bulk of their output just after harvest, and because of loss of stocks due to cyclone, farm level stocks are estimated to be negligible. In fact, many of the smallholders in the affected area do not even have any seed stocks for the next rice planting. In the commercial sector, following the liberalization of food trade in 1988, which has resulted in the predominance of large private corporations in the market, it is difficult to accurately evaluate the stock situation in the provinces and in Antananarivo. Based on the Trade Ministry figures, the Mission estimated opening cereal stocks at 65 000 tons on 1 January 1997.

The August 1993 population census, published in March 1997, indicated a national population of 12.24 million. With a population growth rate of 2.8 percent [ Estimates of Madagascar's annual population growth rate vary widely. Here, we used 2.8 percent as projected by the World Bank for 1989-2000. ] per year, the population is projected to be 14.01 million by mid-June 1997. Total cereal consumption requirements are based on the annual per caput consumption of 120 kg of rice, 10 kg of maize and 5 kg of wheat. The requirements for maize and wheat are those used by the 1994 FAO/WFP mission while the requirement for rice is lower than the 1994 FAO/WFP mission figure of 125 kg.

Feed use of grains is assumed to be negligible given the nature of livestock husbandry. Other uses of grains include seed retention and losses. Altogether, non-food uses and losses are assumed to account for 8 percent

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include seed retention and losses. Altogether, non-food uses and losses are assumed to account for 8 percent for rice, 13 percent for maize, and 5 percent for wheat.

Based on the Ministry of Trade figures and interviews of private traders, the total anticipated commercial imports are estimated at 125 000 tons, consisting of 65 000 tons of rice and 60 000 tons of wheat.

**Table 4: Madagascar: Cereal Supply/Demand Balance Sheet, 1997/98 (000 tons)**

	Rice (Milled)	Maize	Wheat	Total
<b>A. DOMESTIC AVAILABILITY</b>	<b>1 756</b>	<b>184</b>	<b>10</b>	<b>1 950</b>
Opening Stocks	56	4	5	65
Production 1997	1 700	180	5	1 885
<b>B. TOTAL UTILIZATION</b>	<b>1 831</b>	<b>184</b>	<b>81</b>	<b>2 096</b>
Food Use	1 681	140	70	1 891
Seed, feed and other uses	136	23	1	160
Closing Stocks	14	21	10	45
<b>C. IMPORT REQUIREMENTS</b>	<b>75</b>	<b>0</b>	<b>71</b>	<b>146</b>
Anticipated Commercial Imports	65	0	60	125
Food Aid	10	0	11	21

The above balance sheet reveals a total food aid need of 21 000 tons.

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## 6. EMERGENCY FOOD AID REQUIREMENTS

In view of the food shortage in most severely affected areas (Zone A), the Mission estimates that the rural population, estimated at 274 172 people, will require emergency food aid during the current inter-season period until the second season rice harvest.

It is proposed to provide an individual daily ration of 300 g of rice and 50 g of pulses. This ration will provide a daily intake of 1 248 calories and 31 grams of protein to make up 66 per cent of the WFP recommended calorie intake. The choice of this ration is based upon past experience with emergency food aid in 1994 to the victims of the cyclone Géralda, and it is food which fits in with the dietary habits of that region.

The results of the nutrition survey carried out by CRIC on 24-28 February 1997 in the 6 fivondronana affected by the cyclone Grette, with the cooperation of CARE, MSF, UNICEF and USAID, show that there has been a net increase in overall acute malnutrition among children aged between 6 and 59 months (17.5 percent compared with 10.6 percent before the cyclone). This increase is even more marked in the case of severe acute malnutrition. Severe malnutrition and oedema are equally alarming and show that there is one class of children with a high mortality risk. The results highlight an emergency situation and demonstrate unusual malnutrition during the period preceding the survey. In order to offset this situation, MSF opened a CRENI (Intensive Nutrition Recovery Centre) at Vohipeno on 23 February 1997, and other CRENIs will be opened at Farafangana, Vangaindrano, Vondrozo and Midongy. CARE International will also set up several CRENAs (Outpatient Nutritional Recovery Centres) in order to look after children who are moderately malnourished.

Consequently, the Mission recommends the provision of emergency food aid for the severely and moderately malnourished children, which should number 18 173 according to the aforementioned nutrition survey (the total number of children under 5 years of age in the region is 103 850). The age group 6-59 months, being the one which better reflects the nutritional status of any population, has led the Mission to propose that emergency food aid should also be given to the families of the malnourished children who will be looked after in the CRENAs in relatively less affected areas (Zone B), on the basis of four members per family. Distribution of food aid to the families will also ensure that the food ration given to the children is not consumed by their families. The distribution of food aid to families should stop at the next rice harvest. While food aid for the malnourished children should be extended until September 1997 in order to prevent relapses, each child will be given food aid for six weeks.

The Mission also recommends that pregnant and nursing mothers in Zone "B" should also be given emergency food aid. They are estimated to number 23 809 (4.5 percent of the total population in the area - in the case of pregnant mothers and 7.5 percent nursing mothers according to the rates employed by the Ministry of Health). The following table shows the Mission's estimates of emergency food aid requirements.

**Table 5: Estimated food requirements**

Types of Recipients	Number of recipients	No. of days' assistance	Rice (Tons)	Pulses (Tons)	Oil (Tons)	Sugar (Tons)	Milk Powder (Tons)	CSB (Tons)
Malnourished children, CRENI	7 581	180	-	-	38	38	38	49
Malnourished children, CRENA	18 173	180	-	-	54	27	-	105
General distribution Zone "A"	274 172	50	4 113	685	-	-	-	-
Distribution to families of	18 960	50	284	47	-	-	-	-

malnourished children of CRENA Zone "B"								
Expectant and nursing mothers, Zone "B"	23 809	50	357	59	-	-	-	-
TOTAL			4 754	791	92	65	38	154

The internal transport, storage and maintenance cost is put at US\$ 90 per ton.

The International Federation of the Red Cross and the Malagasy Red Cross have pledged to supply the food aid needed for the whole of the population in the fivondronanas of Midongy and Befotaka, depending on the different targeting criteria of the recipients indicated above. The Mission has calculated that the food aid needed for these fivondronanas for 50 days will be 172 tons of rice, 31 tons of pulses and 14 tons of oil.

CARE International and CRS have also received a donation of 300 tons of CSB from the United States government which will be distributed to the moderately malnourished children through the CRENAs.

WFP has so far supplied a total of 300 tons of rice and 10 tons of edible fats.

Consequently, the balance to be covered will be 4 457 tons of rice, 791 tons of pulses, 82 tons of oil, 65 tons of sugar and 38 tons of powdered milk.

The European Union expects to deliver food aid worth 2.0 million ECU through NGOs.

Since Cyclone Gretelle, 297 tons of rice have been distributed by the Conseil National de Secours (CNS) to all the people in the region affected by the cyclone. However since the quantities available were very small, the rations supplied to the population fell far below the needs of the affected population (285 grams to 1 kg of rice per family per day, for three months).

CARE International has put into place a "Cash/Food for Work" Programme for the rehabilitation of the roads damaged by the cyclone, estimated to cost US\$ 500 000, which should make it possible to rehabilitate 500 km of rural tracks and open up certain sub-prefectures and municipalities that are landlocked. The funds provided so far total US\$ 212 000 of which US\$ 137 000 have already been spent. The balance of the track rehabilitation work will take a total of 44 643 days' work. The Mission proposes that the workmen recruited to carry out this work should receive half of their remuneration in kind, on the basis of 1.120 kg of rice per working day. The total amount of rice required is therefore estimated at 50 tons.

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