

National Overview

Situated in the Indian Ocean, Madagascar is the largest island in Africa and the fourth largest in the world. With a size of 587,040 sq km, it is approximately twice the size of Arizona and limited fresh water resources covering only about 1 percent of land area surface. Due to its unique geographic location, Madagascar has an impressive biodiversity. It is home to over 20 percent of the world's known species, of which 80 percent only exist in Madagascar. It is also highly exposed to extreme weather events. Between 1980 and 2010 alone, the country was hit by 35 cyclones causing extensive flooding and 5 periods of severe drought. Madagascar is also vulnerable to earthquakes. The frequency of these hazards is growing, and so is the impact on livelihood assets, irrigation systems, drinking water supply, health systems, and road infrastructure. In 2008 alone, three consecutive cyclones affected 17 of Madagascar's 22 regions.

Demographics

The National Institute of Statistics reports population being 20,696,070 in 2011 with a growth rate of 2.95 percent. Thirty percent of the population lives in urban areas, which are growing at 3.9 percent per year, versus 1.9 percent growth in rural areas. The population is most dense in the Central Highlands and least dense in the Northwest.

The child mortality rate is 6 percent (58 deaths per 1,000 births) for < 12 months and 9 percent (94 deaths per 1,000 births) for <60 months, higher than world average but better than other countries in Southern Africa. Life expectancy at birth is higher in Madagascar (66 years) than in the rest of southern Africa (54) or in low income countries (59). Prevalence of HIV/AIDS is contained to 0,2 percent, lower than in other southern Africa countries.

The entire Malagasy population speaks Malagasy, a Malayo-Polynesian language. The Malagasy can be further subdivided into 18 ethnic groups, of which the largest is the Merina. The Merina governed the kingdom before colonization and is nowadays concentrated in the Central Highlands. There is some sense of marginalization of other ethnic groups.

Macro-economy

Madagascar's key exports include vanilla and clove, petroleum, and gold. Its main export partner is France, while its main import partners are Bahrain, France, South Africa, the US and India.

There have been a number of structural changes in the economy since the 2009 political crisis. Despite the suspension of Madagascar's membership in a number of organizations (e.g. African Union, Southern Africa Development Community (SADC)), trade continues. Madagascar had been a member of the US's African Growth and Opportunity Act (AGOA). The suspension of Madagascar's access to AGOA at the end of 2009 had a dramatic impact on the national textile industry and resulted in the loss of 50,000 jobs. According to the International Labor Organization (ILO), the 2009 political crisis, combined with the international financial crisis, destroyed some 336,000 jobs. It also resulted in a significant increase in corruption. Madagascar is operating under a trade deficit, which appears less than in 2008 due to a contraction in imports. It was relatively stable between 2010 and 2011 at between 1.2-2.3 billion USD.

At the same time, however, mining productivity jumped significantly because of a QMM project in Fort Dauphine that started extraction of [ilmeneite](#) in mid-2009 and continued despite the crisis. In addition to job creation, the mining company has also facilitated construction of a new port at Ehoala (completed in 2009) and has made investments in local, rural development.¹

¹ Report of the International Advisory Panel of Rio Tinto, August 2011, http://www.riotintomadagascar.com/english/cai_QMMRegDev.asp (Accessed 8 October 2012).

Inflation rates range between 5-10 percent per year in relatively typical years, but variability in the rates is high in the medium to long term. Rates reached 18 percent in 2005, and 19-49 percent between 1994-1996 (see Annex). Relatively significant inflation rates with high variation indicate that inter-annual comparison of nominal prices may not be a strong proxy indicator of relative changes in purchasing power; real price comparisons should be used where possible.

Socio-economy

Madagascar is a low-income country with 430 USD per capita in 2011, below the average low-income estimated at 537 USD for same year. Although official unemployment is quite low (3.8 percent), more than 70 percent of the workforce report being either unemployed or under-employed.² Madagascar ranks 151 over 183 countries in the Human Development Index 2011.

According to the National Institute of Statistics, poverty increased between 2005 and 2010. The 2010 National Household Survey, which set the poverty line at 468 800 ARY per person per year, classified 77 percent of the population as poor.^{3, 4} According to this survey, approximately 50 percent of urban populations are poor, while approximately 80 percent of rural populations are poor. By these measures, approximately 90 percent of the population of Atsimo Atsinanana and Vatovavy regions in the southeast is poor.

The 2010 national household survey also assessed extreme poverty, defined as annual consumption (including non monetary transactions) less than 328,162 ARY per person year.⁵ In 2010, about 57 percent of the population (approximately 11 million people) met this definition of extremely poor.⁶ Primary livelihood activities for these households tended to be small farms, casual labor, and fishing.

Political context

Protests against the government led to the ouster in March 2009 of the former President Marc Ravalomanana, who had been in office since 2002. Andry Rajoelina assumed power with military support. The majority of the international community does not recognize the new President. Madagascar's memberships in a number of regional associations, including the African Union and SADC, have been suspended.

Due to mediation efforts by the African Union, the Southern African Development Community (SADC), the United Nations, and the International Francophone Organisation (OIF - Organisation Internationale de la Francophonie), the parties agreed in September 2011 on a roadmap for a transitional unity government and for organizing elections, now fixed for May 2013. The transitional authority is highly dependent on the military support.⁷ At the end of July 2012, Ravalomanana and Rajoelina engaged in another round of talks without progress. After the talks, the former prime minister's wife was deported after attempting to re-enter the country, further increasing tensions among the parties.⁸

The former President had been a prominent businessman in the country, whose company TIKO was deeply involved in food commodities and markets. It held a vast majority of the market share in rice collection and processing and some dairy production.⁹ During February 2009 protests, many TIKO facilities were looted and destroyed. With the ouster and subsequent sanctions, the former President's personal and company bank accounts were frozen and production suspended.¹⁰ Other actors entered into these sectors, though many had little previous experience working with these commodities and markets.

The majority of the international community does not recognize the new government and have interrupted development funds, maintaining only humanitarian interventions. Due to sanctions, the country registered a fall in total exports of 50 percent and a reduction in public investment of 30 percent between 2008 and 2010. The government budget, which had

² INSTAT, Enquête Périodique auprès des Ménages (EPM) 2010, 2011.

³ around 207 USD on 1st of August 2012.

⁴ EPM 2010.

⁵ around 145 USD on 1st of August 2012.

⁶ EPM 2010.

⁷ Peace and Security Council Report, Issue 33 2012, <http://www.iss.co.za/pgcontent.php?UID=31424>

⁸ AFP, Madagascar deports ousted leader's spouse to Thailand (AFP) –27 July 2011.

⁹ Unclassified report from the US Embassy of Antananarivo, <http://www.leakoverflow.com/questions/550756/09antananarivo266-ravalomananas-tiko-group-under-pressure>

¹⁰ Tiko interrupted declaring to be forced by the Haute Autorité de Transition to do so <http://www.topmada.com/2009/04/communique-du-groupe-tiko/>; the HAT contested TIKO to have evaded over 800million USD of taxes, and a negotiation started to reduce the amount.

previously been heavily supported by development assistance, was slashed by 70 percent in 2010.¹¹ The decline in economic activity contributed to reduced and rising unemployment.¹²

International donors have ensured the continuation of some public services such as supporting teacher and health workers' payrolls through UNICEF.¹³ The aid-related sanctions seem to be having a strong impact on accessibility of education and on school attendance through the introduction of school fees to finance school maintenance. Only recently, at the beginning of August 2012, did the European Union decide to reopen development funding to the government for education and health.¹⁴

Sub-national geography

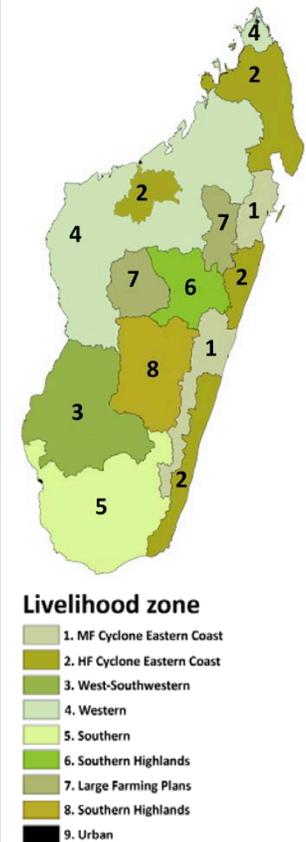
Since 2007, Madagascar's administrative zones are defined as follows: 22 regions (*faritra*), 119 districts, (107 rural and 12 urban), 1,579 municipalities, 17,485 *fokontany*, and 121,679 localities (see Annex X).¹⁵

The highest population density is found in the central highlands: in the Analamanga region, which contains the capital Antananarivo, followed by Vakinankaratra, where is the second largest town, Antsirabe. The lowest density region is Betsiboka, which is in the northwest.

WFP has identified 8 rural livelihood zones¹⁶ which are used as strata in survey samples (Figure 1). Their essential features are:

- **Medium Frequency Cyclone Eastern Coast:** high average rainfall, medium elevation, medium frequency of cyclones, medium sized farming, producing mostly rice, low production of cereals and tubers.
- **High Frequency Cyclone Eastern Coast:** high average rainfall, low elevation, very high cyclone frequency, medium sized farming areas, medium production of rice and cassava, low of other staple crops.
- **West-Southwestern:** low elevation, low rainfall, high frequency of cyclones, medium percentage of livestock, medium size farming plots; medium cassava and maize production, low production of rice, sweet potatoes, potatoes. The highest concentration (33 percent) of small farmers can be found in the in the West-Southwestern livelihoods zone.
- **Western** - Low elevation, medium average rainfall, medium cyclone frequency; medium high percentage of Households relying on livestock, medium sized farming areas, medium rice, cassava and maize production, low sweet potatoes, potatoes and tarots.
- **Southern:** medium elevation, low average rainfall, medium frequency of cyclones; high percentage of HH relying on livestock, medium farm size, very high cassava, high maize, low rice production.
- **Central Highlands:** high elevation, high rainfall, low frequency of cyclones.
- **Large Farming Plains** – medium elevation, low rainfall, medium frequency of cyclones; high level of livestock, high sweet potatoes, potatoes and tarots, high production of cassava and maize, medium rice production.
- **Southern highlands** – high elevation, medium average rainfall, low frequency cyclones; medium percentage of population reliant on livestock, small size farming, medium production of rice, high production of cassava and maize, high production of sweet potatoes and tarots.

Figure 1. Livelihood zones identified by WFP in 2010.



Source: CFSVA+N 2010

¹¹ IrinNews, *Madagascar: Food insecurity tightens its hold*, 3 February 2011 <http://www.irinnews.org/Report/91822/MADAGASCAR-Food-insecurity-tightens-its-hold>

¹² See the US Embassy in Madagascar page on investing in country <http://www.antenanarivo.usembassy.gov/root/english/business/investing-in-madagascar.html>

¹³ <http://www.unric.org/en/madagascar/27072-madagascar-the-untold-crisis>

¹⁴ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/12/890&format=HTML&aged=0&language=EN&guiLanguage=en>

¹⁵ INSTAT, *Présentation des résultats de la cartographie numérique du 3e Recensement Général de la Population et de l'Habitation* (RGPH), March 2010. www.instat.mg/pdf/cartographie_poly.pdf (Accessed 6 September 2012)

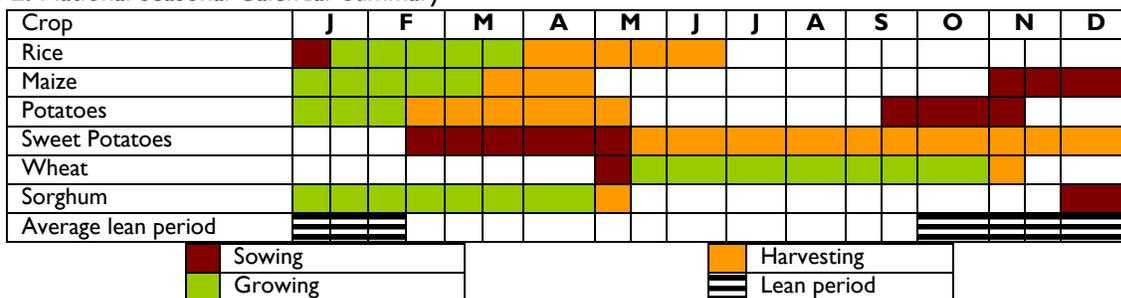
¹⁶ WFP previously developed other formulations of Madagascar livelihood zones, with a classification on 16 zones; in 2003 it was applying livelihoods zones at district and community level, while in 2009 the need to reduce the number was expressed within WFP. FAO uses 13 livelihoods zones to classify areas within countries in all Sub Saharan Africa, see <ftp://ftp.fao.org/docrep/fao/010/i0132e/i0132e06.pdf>

The North, the East coast, and secondarily the West coast are particularly exposed to cyclones from January to May. The South (Southern Highlands and lower part of West-Southwest) is particularly exposed to drought from April to June and locusts from February to July. Flooding also occurs at the peak of seasonal November to April rains, between January and April.¹⁷ The highest concentration of food-insecure households is reported to be in the Southern and West-Southwestern areas.

Agriculture

Agriculture accounts for 26 percent of national GDP, and 78 percent of the active population works in agriculture. National cereal production does not cover the national needs in full, except in rice, which has consistently exceeded national consumption needs since 1999 (except in 2004). Rice imports are generally less than 5 percent of the national rice grain production. The Southern Highlands and Large Farming Planes are the two surplus cereal-producing livelihood zones.

Figure 2. National Seasonal Calendar Summary



Staple food production

Cereal production has been increasing, in general, since 2005. Improved, hybrid seed use is not widespread due both to the high cost and poor market infrastructure for sale. With the cessation of subsidies since the political crisis, fertilizer use is also not widespread.

WFP reports that 52 percent of Malagasy households primarily cultivate rice in the first season. In addition, 30 percent cultivate primarily rice in the second season, particularly in Central Highlands. The regions where most of the rice is produced are: Sofia (produces 13 percent of total national rice production), Alotra Mangoro (11 percent), Analamanga (9 percent) and Vakinankaratra (7 percent).

Rice production in particular was reported to be very high in 2009, the year of the political crisis, although FAO data are less favorable than the World Bank. The 2011/12 harvests, however, fell slightly by about 10 percent (4.3 million MT compared to 4.76 million MT in 2010/11) due to damages (about 300,000 ha) caused by locally poor rainfall, damages from cyclone Giovanna in the eastern coastal regions and cyclone Irina in south-eastern areas; - locust infestation in several areas.

Wholesalers, who deal in both imported rice and locally produced rice, benefit from a buyers’ market. They “...have been accused of using their import capacity as a bargaining chip to negotiate low prices from local producers. This further explains why imported varieties of rice tend to follow the seasonal trend observed with domestic varieties, rather than the behavior of the international wholesale market.”¹⁸

National average rice price trends generally present strong, seasonal intra-annual variability of +/- 30 percent in a typical year and inter-annual variability relatively on-par with inflation rates. In a crisis year where a shock affects production (e.g., 2006), prices increased by 85 percent between the start and finish of the consumption year. The price of imported rice acts as a ceiling for local rice prices, even though imported rice is normally lower in quality than local rice. Imported rice shows slightly less seasonal variation compared to local rice. The rice price peak in 2008 is not reflected in Madagascar’s rice prices.

¹⁷ See the hazard calendar from Humanitarian Early Warning Service (HEWS WEB), <http://www.hewsworld.org/hazcal/>, in pdf format at <http://www.hewsworld.org/cache/shc/exp/450.pdf> (Accessed 6 September 2012).

¹⁸ UNICEF WFP, CFSVA + N 2011.

Figure 3. National average retail rice prices from April 2005 through June 2012

Source: FAO/GIEWS, Observatoire du Riz

Other crops

Cassava is the second most-produced crop for a total production of almost 3 million MT. Cassava is an important component of the diet, particularly during the lean season. However, the production and consumption of cassava is closely related to the geography (soil and climatic conditions) particular to the South.¹⁹ Increases in cassava production in recent years are likely due to increased area planted.

Cash crops destined primarily for export are vanilla, coffee and clove,²⁰ which are most important in the High Frequency Cyclone Eastern Coast; litchi, coffee, and sunflowers are prevalent in the Medium Frequency Cyclone Eastern Coast.²¹

Sugarcane and groundnut are the main cash crops cultivated by the highest proportion of households. About 40 percent of these crops are consumed by households. Beans, groundnuts, onions, fruits, and vegetables are also produced for sale and have short growing cycles. The highest concentration of production of these crops is in the Central Highlands and on the West coast.

Agricultural Programs

In 2006 the Madagascar Action Plan (MAP) was launched, and in 2007 the government started a program (the Sustainable Green Revolution), aiming to double rice production compared to 2007 by 2009 and triple it by 2013. The rice sector received input subsidies, including fertilizers, seeds, tools, and technical assistance. As stated earlier, rice production in 2009 did increase dramatically, though that increase was not sustained after the political crisis.

The World Bank was able to reclassify its *Projet de Soutien au Développement Rural* (PSDR) and *Bassins Versants Périmètres Irrigués* (BVPI) as humanitarian interventions, enabling it to restore financing and operations since in July 2010 after an 18-month hiatus.

Markets and Trade

Data from 2002 reported 34 percent of the 1,385 communes having a daily market. About 60 percent of communes have markets at least weekly. However, almost 30 percent of the 1,385 communes have only a seasonal market (a collection market), where producers sell their crops at harvest time.

In 2003 there were a total of 83 markets in the country, with highest share in the province of Toliary (19), followed by Mahajanga (17), and lowest presence in the province of Antsiranana (6). Electricity was available to less than a third of the markets, and only 41,4 percent had drinkable water available.²² Markets would be at an average distance of 15 km of national roads (more for Mahajanga with 34,7 km and Fianaratsoa with 23,8 km), about 11 km down on provincial roads, and slightly over 2 km of communal road.²³

¹⁹ Ibidem.

²⁰ EPM 2010.

²¹ UNICEF WFP, CFSVA + N, 2011.

²² INSTAT, Enquete sure les marchés ruraux, 2003.

²³ Ibidem.

Markets are relatively well integrated by region, but less-so on a national scale. This is particularly the case for tubers and vegetables. Rice is more widely traded nationwide. Local rice markets tend to be better integrated than imported rice markets, showing smaller price variations from one market to another. In general the markets of North and Center are better integrated than those in the South.²⁴

Geographical contiguity is an important determinant of market integration. Transaction costs are very high, particularly for transportation (41 percent of final price in 2004). In addition, many regions have frequent road blocks from local authorities.²⁵ There are also some areas where vendors and brokers do not go at all due to bad road infrastructure; the perception of risks by vendors and intermediaries and the lack of market information exchange also constrain trade.

In 2006, a WFP study found that prices in the Large Farming Plains were well correlated with almost all market regions, particularly the Central Highlands. It seems that the reference markets in the Large Farming Plains influence prices in Western and Upper Eastern Coast and Southern Highlands, which in turn affect prices in Southern and Lower Eastern Coast. The markets of Ambatondrazaka, Antananarivo, Fianarantsoa and Ambositra play a major role for forecasting wholesale prices and for influencing trade across the country.²⁶

On the other hand, the West-Southwestern markets are mainly correlated with the Southern and Southern Highlands markets, and influence each other's prices. Antalaha, Maroantsetra, and Sainte Marie (the latter only accessible by boat) markets are also relatively isolated, as well as suburban markets on the east coast (Toamasina II and Vatondry). Fianarantsoa and Tulear are well correlated with each other but are not correlated with other urban markets. Also Antsiranana shows little integration with other district markets, but good with markets in Toamasina, Fianarantsoa and Sambava.²⁷

WFP found that rice prices for Toamasina and Alaotra markets were very well integrated with the markets in the capital Antananarivo, as well as the markets of Mahajanga. On the other side, markets of Toliara and Fianarantsoa are weakly integrated.

Informal trade is most prevalent in the supply chains of roots, tubers, vegetables, fruits, and nuts. Barriers to entry in these markets are lower, with lower stocking requirements, and sufficient local demand. Formal trade is more common for imported goods (require large capital investments and access to credit) or specialized processing or storage facilities (rice, sugar, powdered milk). There are few actors in the formal trade markets.

In the country food supply chains, there are three typical configurations:²⁸

- a. Producers directly sell to consumers or a local vendor connects the two locally. This is the most prevalent in peri-urban areas and for fresh produce. There are also Associations of producers, particularly in Mahajanga, Toamasina, and Tolagnaro.²⁹ This type of transaction is most common.
- b. A wholesaler connects producer and retailer in part by adding the value of stocking and transportation. This is frequent at the regional level and primarily concerns roots, tubers, and maize.
- c. The supply chain includes intermediaries for financing, transportation, stocking, processing, and retailing. This is the typical supply chain for rice sales. This industry has the fewest number of actors and the highest amount of vertical integration. Access to credit has been cited as a key limiting factor.

Infrastructure: agricultural land, irrigation, roads, electricity, and communications

Estimates differ widely with regard to the total amount of **agricultural land** in Madagascar. According to the World Bank, 70.2 percent of total land (about 40 million hectares)³⁰ is arable, while FAO puts the number at 15-20 million hectares

²⁴ WFP, Madagascar: Rapport sur l'analyse de marchés et la faisabilité d'une intervention basée sur le transfert d'espèces/coupons, 2009.

²⁵ Catholic University of Louvain, *Madagascar: Profile des marchés pour les évaluations d'urgence de la sécurité alimentaire*, WFP SENAC, 2006.

²⁶ Catholic University of Louvain, *Madagascar: Profile des marchés pour les évaluations d'urgence de la sécurité alimentaire*, WFP SENAC, 2006.

²⁷ UNICEF WFP, CFSVA + N, 2011.

²⁸ Catholic University of Louvain, *Madagascar: Profile des marchés pour les évaluations d'urgence de la sécurité alimentaire*, WFP SENAC, 2006.

²⁹ Ibidem.

³⁰ World Bank 2009.

(2007), and the Ministry of Agriculture estimates only 8 million hectares (2008).³¹ Regardless of the amount of land available, estimates suggest that only 2 million hectares of land are actually cultivated by households.³²

However, cultivated lands are unequally distributed. Over 70 percent of agricultural households cultivate less than 1.5 hectares of land,³³ and 52 percent of households cultivate less than 1.2 hectares.³⁴ According to WFP, 82 percent of cultivated land is currently allocated to food crops.³⁵ Land access is an issue: during the 2009-2010 agricultural season, only 28 percent of farmers considered their lands sufficient for cultivation.³⁶

The largest average land area per household is found in West-Southwestern and in the Southern zones, where almost the 30 percent of households own more than 2 hectares, while the highest prevalence of small plots is in the Central Highlands, with 44 percent of households having less than 0.5 hectares. Coastal lands are overall those where the concentration of larger landholdings is greater due to high investor demand, primarily for cash-crop or bio-fuel production.

A land reform initiative to assign private property rights to land began in 2005 but was halted by the political events of 2009. Several issues remain unresolved, including treatment of pasture land and some foreign investment projects.

Irrigation infrastructure is very limited (<5 percent of arable land), and some of what does exist no longer functions or needs maintenance.

Roads and transportation – Of Madagascar's 65,663 km of roads, only 11 percent are paved. Formerly existing roads have not been maintained and have been exposed to extreme and recurrent weather hazards. There are only 854 km of railroads in Madagascar in two, disconnected lines. One line links Andsirabe and Antananarivo with Ambatondrazaka and the port city of Tomasina. Another line links Ranarantsoa and Manakara. By contrast, there are 82 airports, 26 of which have paved runways.³⁷ The region with highest level of availability of mechanical transportation are Analamanga, Alaotra Mangoro, Amoron I Mania, while the least served are Atsimo Atsinanana, Atsinanana, Vatovavy Fitovinany.³⁸

Electricity – On the average, only 2.5 percent of *fokontany* are connected to the electrical grid. Analamanga region has the highest coverage, with 34.8 percent of *fokontany* served, while the least connected is Vatovavy Fitovinany, with only 2.8 percent connected.

Communication and information – Access to communication technology is growing quickly. Ownership of mobile phones increased from 4 percent to 25 percent between 2005 and 2010. In urban areas, one in four households has at least one mobile phone, while in rural areas the rate is almost one in five.³⁹ In 2010 a pilot project for transferring money and reimbursing vouchers to service providers via mobile SMS for reproductive health counseling was successfully created and documented.⁴⁰

Livestock and fishing

Livestock-raising is important for households, both for meat production and as a savings mechanism. The most common form of savings is cattle (zebu), followed by pigs and chickens.⁴¹ Livestock is particularly important in Southern and South-Southwestern zones. In particular, there are concerns about the relationship between the cultural funerary practice of in the South of killing zebu to honor the dead and long-term wealth depletion.

Fishing employed about 100,000 people prior to the 2009 political crisis. However, private, particularly foreign companies,

³¹ Rivo Andrianirina Ratsialonana, Landry Ramarojohn, Perrine Burnod and André Teyssier, *After Daewoo? Current status and perspectives of large-scale land acquisitions in Madagascar*, ILC, January 2011.

http://www.landcoalition.org/sites/default/files/publication/905/CIRAD_OF_Mada_ENG_web_16.03.11.pdf

³² *After Daewoo?* Op.cit., p.11.

³³ EPM 2010.

³⁴ UNICEF WFP, CFSVA+N 2011.

³⁵ WFP, Madagascar: Profil des marchés pour les évaluations d'urgence de la sécurité alimentaire, January 2006.

³⁶ UNICEF WFP, CFSVA + N 2011.

³⁷ Central Intelligence Agency

³⁸ INSTAT, RGPH, March 2010.

³⁹ EPM 2010

⁴⁰ Marie Stopes International, *Using mobile finance to reimburse sexual and reproductive health vouchers in Madagascar*, 2011 www.mariestopes.org/sites/default/files/12pp_Marie%20Stopes_Mobile_Money%20FINAL.pdf

⁴¹ EPM 2010

hold the largest share of the fishing market. The UN Special Rapporteur on the right to food considers⁴² the current allocation of commercial fishing rights as below market value, environmentally unsustainable, and conducted without sufficient transparency. Literature on fishing in Madagascar includes:

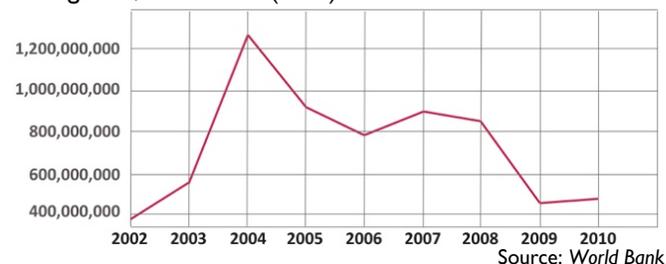
- FAO, *Profil de la pêche*, Madagascar, 2008.
- WFP, Madagascar Comprehensive Food Security and Vulnerability Analysis, 2005.
- UN General Assembly, Human Rights Council, Report of the Special Rapporteur on the right to food, Olivier De Schutter Addendum Mission to Madagascar, A/HRC/19/59/Add.4, 26 December 2011.

Food and Official Development Assistance

The level of Official Development Assistance (ODA) for Madagascar has been inconsistent over the past 10 years (Figure 4).⁴³ ODA declined significantly with the political crisis of 2009 as the international community has not recognized the Transitional Authority.

Total food aid in 2011 amounted to 37,508 MT. Approximately 65 percent of this assistance was the result of direct transfers of food commodities from the US. Twenty-five percent of the assistance was through UN purchases, and almost 10 percent was from local purchases (mostly France, partially from WFP, minor part from Germany). Recent food aid trends are irregular with a peak in 2007 of 57,521 MT and a minimum assistance in 2009 with 22,233.3 MT.⁴⁴

Figure 4. Official Development Assistance (ODA) in Madagascar, 2002-2010 (USD)



WFP estimates Madagascar's 2012 needs for school meals, supplementary feeding, food-for-work, and food-for-asset programs at 38,666 MT. Food-for-work and food-for-asset programs are commonly used for building and repair of irrigation systems. WFP conducted a study assessing the feasibility of cash and voucher programs in 2009.⁴⁵

Household food security

Food consumption

Rice is the main staple food in both rural and urban areas, accounting for 42 percent of Dietary Energy Supply (DES). The annual per capita consumption of rice amounts to 97 kg for domestically-consumed rice, rising to 115 kg considering rice consumed outside the home.⁴⁶ After rice, tubers and roots are the most consumed foods, with an annual average of 62 kg consumed per capita. These numbers hide significant discrepancies in food consumption sub-nationally, particularly between the South and the North.

Meat, fish and poultry are scarcely present in diet, with an average of 9,3 kg/person/year. Average annual dairy intake is 17 kg, but there is a high disparity in consumption based on wealth class: consumption for the wealthiest households is 16-fold that of the poorest.⁴⁷

The Southern region has the least-diverse diet: cassava is eaten almost every day (6.1 days per week), followed by cereals, and vegetables (2.8), and finally animal proteins (milk not included) and oil. This high cassava consumption is related to the comparatively higher production of cassava in the zone compared to rice and its lower price. It was not clear from this desk review whether or not households in the south prefer cassava to rice or other staples.

⁴² UN General Assembly, Human Rights Council, *Report of the Special Rapporteur on the right to food, Olivier De Schutter Addendum Mission to Madagascar*, A/HRC/19/59/Add.4, 26 December 2011.

⁴³ OECD ODA Database, <http://stats.oecd.org/qwids>.

⁴⁴ INTERFAIS data, <http://www.wfp.org/fais/quantity-reporting>

⁴⁵ WFP, *Rapport sur l'analyse de marchés et la faisabilité d'une intervention basée sur le transfert d'espèces/coupons - Madagascar*, 2009.

⁴⁶ UNICEF WFP, CFSVA + N, 2011

⁴⁷ INSTAT, EPM 2010.

According to WFP's 2011 Food Consumption Score (FCS) observations (data collected in 2010)⁴⁸:

- 11.8 percent of households have poor food consumption (cassava 5.5 days/week, cereals 3.5 days/week and vegetables 2 days/week with proteins virtually absent from their diet);
- 41.1 percent have borderline food consumption
- 47.1 percent have acceptable food consumption

It should be noted that the results of the CFSVA + N differ from the CFSAM 2009, which instead reports the following national averages:

- 14 percent poor consumption
- 32 percent borderline
- 54 percent acceptable⁴⁹

The highest concentration of poor food consumption scores was found in:

- Southern (55.6 percent),
- West-Southwest (19 percent) and
- High Frequency Cyclone (11.6 percent)

The highest food consumption scores are concentrated in the Central Highlands.⁵⁰

Among different income groups, those with the poorest FCS are casual laborers, followed by small farmers.⁵¹ The FCS seems to be negatively affected by age of head of household (it gets lower with the increase of the age), but slightly positively affected by the size of household (higher with the increase of number of members in the household).⁵²

Household income

The vast majority of households practice subsistence agriculture; very few of them produce higher-value products, such as fruits, vegetables, or cash crops. For many, agricultural production and food consumption are also not highly diversified, a characteristic that makes them more vulnerable to weather hazards and market fluctuations. Small farmers cultivating less than 1 hectare of land comprise nearly 20 percent of the population, as do informal laborers and casual laborers each. Casual laborers and small farmers are found in the two poorest quintiles.

The lean season is characterized by a shortage of cash as casual labor tends to be paid in kind during that time of year. Food access is reportedly most constrained between October-February in the Southern and West-Southwest zones and in urban areas (peak in January-February), and March-April in the Eastern Coast, HF and MF Cyclone Eastern Coast, and Large Farm Plains.^{53, 54} June is the peak month for agricultural labor and livestock sales.

Household food expenditures

Households in rural areas allocate a higher percentage of their budgets (71 percent) to food expenditures than do households in urban areas (66 percent).⁵⁵ In the poorest households, rice purchases account for the largest share (32 percent) of food expenditures. Market purchases are the main source of rice for 62 percent of the households, and of cassava for 47 percent of households.

⁴⁸ UNICEF WFP, CFSVA+ N, 2011, See annexes in the report for methodology and food groups.

⁴⁹ Several methodological reasons may account for these differences. The CFSAM was based on a sample on 15 regions with the purpose of assessing agricultural production, while the CFSVA + N intends to provide an accurate picture of food security and nutrition, identifying possible pockets of food insecurity. The sample framework is nationwide, combining administrative divisions and the 9 (8 rural and 1 urban) livelihood zones, which were defined using indicators that reflect the socio-economic and geographical factors in combination with food security and nutrition, demographic characteristics and malnutrition rates. The CFSVA + N strata were validated by the Madagascar food security and livelihoods cluster. Also, the food consumption calculation might depend on different methodologies: CFSVA + N used the Food Consumption Score, which measures diversity – not quantity, and provides criteria (weight for each type of food group), while the CFSAM does not provide details on the methodology used for calculating food consumption.

⁵⁰ UNICEF WFP, CFSVA+ N, 2011

⁵¹ UNICEF WFP, CFSVA + N, 2011.

⁵² Ibid.

⁵³ Ibidem.

⁵⁴ WFP, *Rapport sur l'analyse de marchés et la faisabilité d'une intervention basée sur le transfert d'espèces/coupons – Madagascar*, 2009. The report was intended as a feasibility study to introduce cash and voucher schemes of food assistance, and it focuses specifically on food availability, current and foreseen food prices, impacts of rising food prices on the market, impacts of rising food prices on urban households, and market information and integration).

⁵⁵ EPM 2010.

In the Southern zone, where cassava is primary crop cultivated, 34 percent of the household budget is dedicated to purchase cassava. This may indicate that the zone is not self-sufficient in cassava production, but it may also indicate significant inequalities between household groups in terms of reliance on markets compared to reliance on own production. In the HF and MF Cyclone Eastern Coast, which produces a rice surplus, 35-40 percent of household expenditures is allocated to purchase rice. These data might indicate a lack of storage capacity among most farmers or a preference to monetize part of the crop immediately after harvest.

Nutrition

According to UNICEF's The State of the World's Children 2010 report, Madagascar has the world's sixth-highest chronic malnutrition rate with 46 percent of children under five moderately and severely underweight (11 percent severely underweight).^{56, 57} Higher global acute malnutrition (GAM) rates and chronic malnutrition rates are observed for boys than girls.⁵⁸ Breastfeeding conventions may have a gender dynamic that could also affect malnutrition rates. Eighty-two percent of girls are exclusively breastfed, compared to only 68 percent of boys.

Additional nutrition resources include:

- Demographic and Health Survey (2003-2004) and INSTAT – USAID – ORC Macro, Nutrition of Young Children and Mothers in Madagascar. Findings from the 2003-2004 Madagascar Demographic and Health Survey, 2005. Calculation based on formulas by Pelletier et al. [1994].
- UNICEF SMART surveys

The suspension of development funds due to the 2009 political crisis impacted the country's ability to treat malnutrition. The reported mortality rate in hospitals CRENI (*Centre de Récupération Educationnelle de Nutrition Intensive*) went from 10 to 27 percent between spring 2009 and spring 2010. WFP reported a significant increase in the treatment drop-out rate due to inability to pay for services that had been free prior to the political crisis.⁵⁹

Water and sanitation

Surface waters, such as lakes, rivers and streams, remain the main source of water in all livelihood zones. Wells are also a common source of water in West-Southwest, in the Large Farming Plains and in the southern zones, while tap water (public or private) is more common in the Central Highlands and the Large Farming Plains.

According to a 2010 study by WFP and UNICEF, only about 26 percent of rural households had access to improved water sources. The lowest level of access was reported in the Southern zone (13 percent of households in dry season, and 22 percent in rainy season) and in the Western zone (~15 percent). The highest level of access is in Central Highlands (~40 percent) and in Large Farming Plain (~48 percent). Water treatment practices (boiling or chemical treatment) vary greatly by livelihood zone. Nationally, 38 percent of households employ these strategies, but practice ranges from 60 percent in MF Cyclone East zone to 12 percent in the Southern zone. While no significant association was found between access to improved water and acute malnutrition, there were positive correlation between quality of water accessed and child morbidity.

Access to improved sanitation is very low. Overall, almost 60 percent of the households reported defecating in the open air, and open-air defecation is virtually every fokontany (village).

According to the UNDP, provided that MAP continues to be a recognized framework for agricultural interventions, the water and sanitation sector in Madagascar is designed and aligned at the policy and programmatic levels to meet Millennium Development Goal targets. However, institutional change is needed (a water master plan, reinforcement of technical capacity, sectoral and inter-sectoral coordination) which could be facilitated by the recent creation (in 2008) of a

⁵⁶ UNICEF, *The State of the World's Children 2009* (WHO/NCHS population)

⁵⁷ WFP, *Madagascar Food Security Monitoring Bulletin*, 1st quarter, April 2012.

⁵⁸ UNICEF WFP, CFSVA + N, 2011.

⁵⁹ WFP, *Food Security Monitoring Quarterly Bulletin*, May 2010.

Ministry of Water.⁶⁰

There is resurgence in malaria in South Eastern and Eastern regions, malaria outbreaks in the beginning of 2012 being reported at 10 times the rate as in 2009.⁶¹

Food insecurity distribution

Food consumption is not very diverse. A [2011 FAO/WFP study](#) of food consumption scores found that the majority of the population reported poor or borderline food consumption scores in 2011.⁶² The [2011 CFSVA \(UNICEF/WFP\)](#) combined the food consumption score with the coping strategies index and household incomes and expenditures and concluded that the proportion of food-insecure households was significantly lower than just the proportion of households with poor food consumption scores.⁶³

Coping strategies

Indicators of crisis in the Southern region may include:

- Sale of livestock. This may also be due to livestock ceremonies
- Consumption of seeds
- Consumption of cactus fruits normally reserved for livestock

These indicators should be verified through livelihood zone description workshops.

EARLY WARNING INFORMATION SYSTEMS

The Danish Government funded a WFP [assessment of national food security emergency needs in 2006](#), which summarizes food security systems available at the time.⁶⁴ There is currently no comprehensive, nationwide early warning system in place.

The Early Warning System (Système d'alerte précoce—SAP)

A national SAP to provide early warning and information on the emerging food crises was created in 1996 using the same model as the SAPs in Sahel.⁶⁵ The SAP was coordinated by the Permanent Steering Committee for the National Rural Development Programme, directly reporting to the Cabinet of the Prime Minister. The SAP was only designed to cover the southern part of the country. Prior to the political crisis, the area monitored totaled 104 *fokontany* with over 90 enumerators in nine of the 119 districts.

Data collection for the SAP was performed using questionnaires with sections about structural issues, socio-economic conditions, market conditions, and agricultural production. Indicators on nutritional status were collected between 1996-2005. Some nutrition data may have been collected through 2007. The SAP produced the following information resources:

- A database,
- Monthly reports,
- Draft (in August) and finalized Food Security Outlook (in June), and
- Post-harvest assessment (December)

There was a fundamental shift in food security monitoring in 2009 with the political crisis, as cessation of development and government funding included funding for the SAP. In 2009, WFP volunteered to take over the SAP with EU funds, to assess it, and to improve it. Assessments of the SAP in 2009⁶⁶ and again in [2011](#)⁶⁷ indicated that the system lacked consistency and

⁶⁰ UNDP GoAL WaSH Programme, *Country Sector Assessments – Madagascar. Governance, Advocacy and Leadership for Water, Sanitation and Hygiene*, 2009.

⁶¹ WFP, *Madagascar Food Security Monitoring Bulletin*, 1st quarter, April 2012.

⁶² FAO WFP, CFSAM, 2011.

⁶³ UNICEF WFP, CFSVA + N, 2011.

⁶⁴ <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp173763.pdf>

⁶⁵ For in depth information on the programme see: Paul-Marie Boulanger, Christophe De Jaegher, Denis Michiels, *Systèmes d'information pour la sécurité alimentaire. L'expérience AEDES en Afrique*, L'Harmattan, 2004.

⁶⁶ Sabrina Aguiari, *Community based early warning system in South and South East Madagascar. Technical review and system design*, November 2009.

⁶⁷ Aart van der Heide, *Revision Méthodologique du SAP, WFP Madagascar*, April 2011.

http://semencesdusud.com/concertation/Rapport_rev_SAP_Aart_%2011AVRIL2011.doc Accessed October 31, 2012.

objectivity in data collection. In addition, they suggested that there may have been a conflict of interest between the SAP's early warning function and response delivery function. The SAP ceased to operate in 2011.

Other food security monitoring systems

WFP has produced occasional [Food Security and Monitoring Bulletins](#) since 2010.⁶⁸ The bulletin presents key macroeconomic data, weather and agricultural data, as well as household-level information and updates on natural hazards. WFP also conducts occasional surveys on the state of food security and emergency needs assessments in collaboration with FAO, UNICEF, the Office National de Nutrition (ONN, attached to the Office of the Prime Minister), the National Institute of Statistics (INSTAT) and the relevant departments within the Ministry of Agriculture.

Complementary food security information and analysis for 2004-2009 may be available from the EU-funded SIRSA project. The SIRSA project was intended to complement the SAP, providing additional information on agriculture, as well as technical assistance, and was implemented by the same agency that coordinated the SAP.⁶⁹ In SIRISA II, the food security component was not retained. Also, in 2005 CARE began a project supporting the decentralization of SAP data collection called SNAP, for which complementary information may be available.

The USAID-funded SALOHI project, a multi-year program (MYAP), which intervenes in 120 rural communes in 21 districts and three urban centers in eastern and southern parts of the country, includes a community-based early warning system. SALOHI is a project involving a consortium of NGOs (ADRA, CARE, CRS and Land O'Lakes) and led by CRS. SALOHI launched its reporting process in July/August 2012.

UNICEF has conducted regular SMART surveys since 2009, as well as sentinel site monitoring in select urban areas. In 2005, the *Platform Riz* was established to improve development of the rice sector supply chain. Members of the platform established a Rice Observatory to monitor rice prices,⁷⁰ communicated through a monthly bulletin.

UNDP is leading a country-specific version of the Global Risk Identification Programme (GRIP). This initiative includes a comprehensive risk identification and hazard monitoring assessment of the country, as well as mapping capacities of national institutions, in order to support development of national expertise in this area if needed. The University of Antananarivo is involved together with governmental counterparts.⁷¹ The report is expected to be finalized and distributed by August 2012.

A satellite-based remote sensing tool to observe wildfire has been developed for Madagascar by the University of Maryland, NASA and Conservation International. This system does not track affected area; instead it reflects the number of fires, their location with respect to inside or outside of a forest, and their approximate distance from protected natural areas. Maps and reports are available from <https://firealerts.conservation.org/>.

⁶⁸ <http://www.wfp.org/countries/madagascar/publications/monitoring>

⁶⁹ Equipe Permanente de Pilotage du Programme National de développement Rural (EPP/PNDR).

⁷⁰ The Observatory web site does not seem to work any longer, but information and bulletin are available through the CIRAD initiative, http://madagascar.cirad.fr/recherche_en_partenariat/observatoires_a_madagascar/observatoire_du_riz_odr

⁷¹ Global Risk Identification Programme, Monthly Highlights, January 2012.

<http://www.gripweb.org/gripweb/sites/default/files/monthlynewsletter/GRIPMonthlyHighlightsJan%202012.pdf>

ANNEX I. ESTIMATED POPULATION (2011) BY REGION

Former Province	Region	Estimated Population (2011)	Population Density per km ²
Antsiranana (extreme North)	Diana	663,289	34
	Sava	929,342	36
Antananarivo (Central highlands)	Analamanga	3,173,077	188
	Bongolava	433,369	26
	Itasy	694,381	99
	Vakinankaratra	1,708,685	103
Mahajanga (Northwest)	Betsiboka	278,120	9
	Boeny	757,714	24
	Melaky	274,399	7
	Sofia	1,181,603	24
Toamasina (northeast)	Alaotra Mangoro	973,216	30
	Analanjirifo	980,817	45
	Atsinanana	1,204,006	55
Fianarantsoa (Southeast)	Aoron'i Mania	677,508	42
	Atsimo Antsinanana	851,545	45
	Haute Matsiatra	1,136,260	54
	Ihorombe	295,920	11
	Vatovavy Fitovinany	1,342,135	68
Toliara (South/southwest)	Androy	695,423	36
	Anosy	636,554	25
	Atsimo Andrefana	1,247,663	19
	Menabe	561,043	12

Source: INSTAT 2011

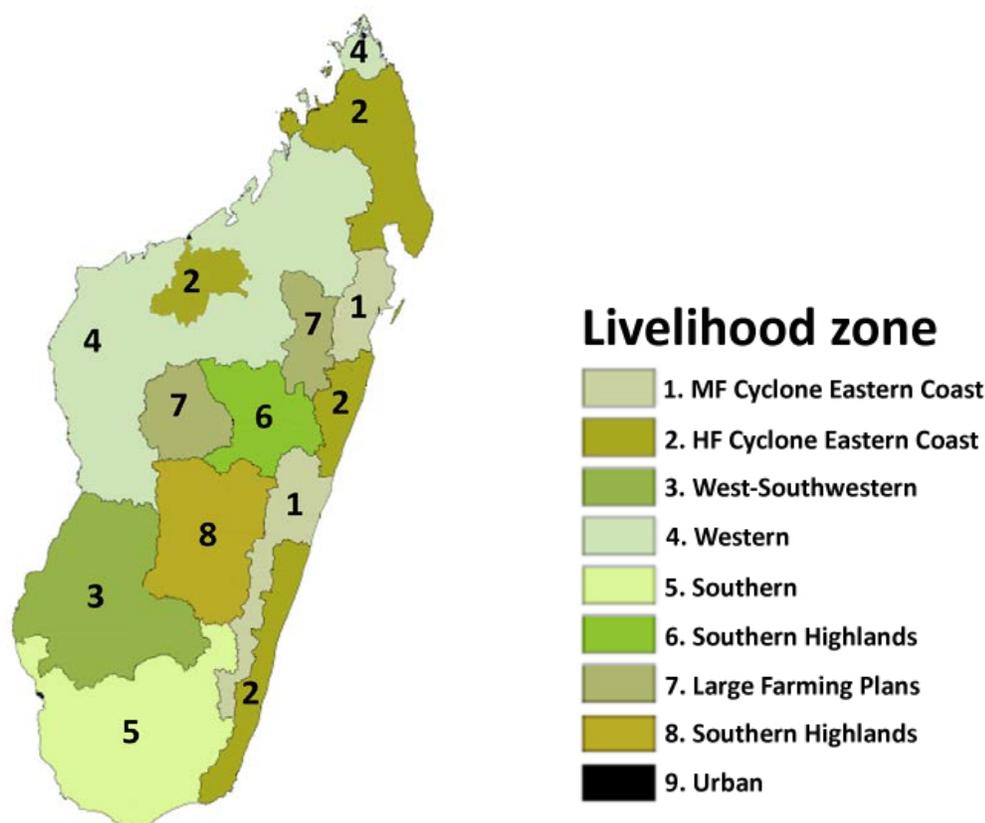
ANNEX II. LIVELIHOOD ZONE CHARACTERISTICS

WFP has identified the following 8 livelihoods zones, used as strata in their sampling model for surveys.

Zone	Geography			Livelihood			Social services		Nutrition		
	Elevation	Rainfall	Cyclone frequency	Livestock reliance	Cultivated area size per household	Staple food production	Proportion of children in primary school	Literacy rate	Proportion of female-headed households	Wasting prevalence	Stunting Prevalence
Medium frequency cyclone east coast	M	H	M	L	M	L	H	M	L	H	M
High frequency cyclone eastern coast	L	H	H	L	M	M	M	M	H	M	L
West-south western	L	L	H	M	M	M	L	L	H	M	L
Southern	M	L	M	H	M	H	L	L	H	H	M
Central Highlands	H	H	L	M	M	M	L	H	L	L	M
Large farming plains	M	L	M	H	H	H	L	L	L	L	M
Southern Highlands	H	M	L	M	L	H	M	H	M	M	H

Note: H = High, M= Medium, L = Low

Source: WFP UNICEF, CFSVA + N, 2010



Source: WFP UNICEF, CFSVA + N, 2011

ANNEX III. CEREAL PRODUCTION BY LIVELIHOOD ZONE

LIVELIHOOD STRATA		2005	2007	2008
MF Cyclone Eastern Coast	Cereal available for human consumption (mt)	184,944	193,973	203,756
	Total population (urban + rural)	1,816,657	1,920,187	1,962,901
	C.E requirement Needs	326,998	345,634	353,322
	Cereal Equivalent Net Balance (mt)	-142,055	-151,661	-149,566
HF Cyclone Eastern Coast	Cereal available for human consumption (mt)	422,032	443,065	431,089
	Total population (urban + rural)	3,762,686	3,977,118	4,065,588
	C.E requirement Needs	677,283	715,881	731,806
	Cereal Equivalent Net Balance (mt)	-255,252	-272,816	-300,716
West-Southwestern	Cereal available for human consumption (mt)	165,153	173,158	185,339
	Total population (urban + rural)	784,129	828,816	847,253
	C.E requirement Needs	141,143	149,187	152,506
	Cereal Equivalent Net Balance (mt)	+24,010	+23,971	+32,834
Western	Cereal available for human consumption (mt)	371,673	395,104	443,398
	Total population (urban + rural)	2,282,690	2,412,779	2,466,450
	C.E requirement Needs	410,884	434,300	443,961
	Cereal Equivalent Net Balance (mt)	-39,211	-39,196	-563
Southern	Cereal available for human consumption (mt)	366,471	378,213	393,172
	Total population (urban + rural)	2,018,455	2,133,485	2,180,944
	C.E requirement Needs	363,322	384,027	392,570
	Cereal Equivalent Net Balance (mt)	+3,149	-5,815	+602
Central Highlands	Cereal available for human consumption (mt)	379,709	398,886	387,741
	Total population (urban + rural)	4,926,482	5,207,239	5,323,072
	C.E requirement Needs	886,767	937,303	958,153
	Cereal Equivalent Net Balance (mt)	-507,057	-538,417	-570,412
Large Farming Plains	Cereal available for human consumption (mt)	557,108	586,650	621,850
	Total population (urban + rural)	1,721,748	1,819,869	1,860,351
	C.E requirement Needs	309,915	327,576	334,863
	Cereal Equivalent Net Balance (mt)	+247,194	+259,074	+286,987
Southern Highlands	Cereal available for human consumption (mt)	683,085	709,981	771,468
	Total population (urban + rural)	1,287,153	1,360,507	1,390,771
	C.E requirement Needs	231,688	244,891	250,339
	Cereal Equivalent Net Balance (mt)	+451,398	+465,090	+521,129
NATIONAL LEVEL	Total Cereal available for human consumption (mt)	3,130,176	3,279,031	3,437,814
	Cereal Equivalent requirement Needs	3,348,000	3,538,800	3,617,519
	CEREAL EQUIVALENT NET BALANCE (mt)	-217,824	-259,769	-179,706

Source: WFP UNICEF, CFSVA + N, 2011