MADAGASCAR Food Security Outlook June 2018 to January 2019

Poor rainfall will likely lead to below-average main staple harvests in Southern Madagascar

KEY MESSAGES

- National rice production will likely be 3.6 Million MT which is 17 percent higher than last year and near the 5-year average. Overall national maize production will likely be 264,000 MT which is 6 percent lower than last year and 21 percent below the 5-year average. National cassava production will likely be 2.6 Million MT which is 3 percent higher than last year but 7 percent below the 5-year average.

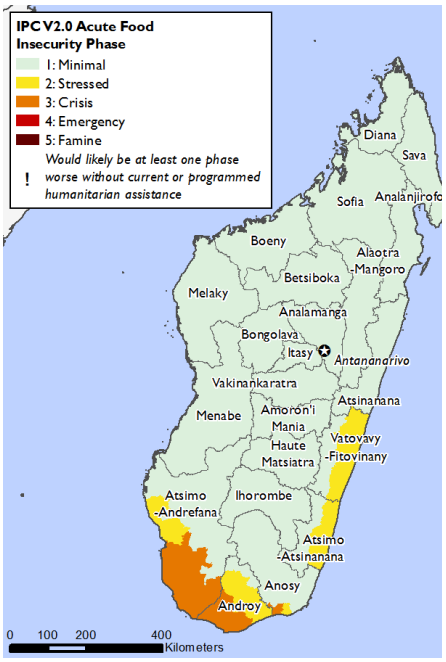
- Surprising rain fell in Southwestern Madagascar during the first week of June although the rainy season usually ends in May. Between 10 and 30 mm fell in Tulear II, Betioky and Ampanihy which allowed farmers to prepare lands and plant off-season crops of sweet potatoes and pulses in localized communes.

- Prices for most staple food prices stabilized in April/May. Imported rice prices remain the same as last year at the same period but are 23 percent above the 5-year average. Local rice prices are 11 percent higher than last year and 31 percent above the 5-year average. Maize prices are 15 percent lower than last year but remain 17 percent higher than 5-year average.

- Most humanitarian assistance ended in May 2018 despite continued needs in the south. Planned humanitarian assistance is minimal for the outlook period of July 2018 to January 2019 and is expected to cover less than 19 percent of the population living in areas of concern.

- The current food security situation is improved compared to previous months due to ongoing harvests, but areas of Crisis (IPC Phase 3) remain in the District of Beloha (part of Livelihood Zone 24) and in the Mahafaly Plain (Livelihood Zone 23). Other parts of the country including the Southeast of Madagascar (Livelihood Zone 19) and in the part of the Southwest included in Livelihood Zone 20 are currently in Stressed (IPC Phase 2).

Current food security outcomes, June 2018



Source: *FEWS NET*

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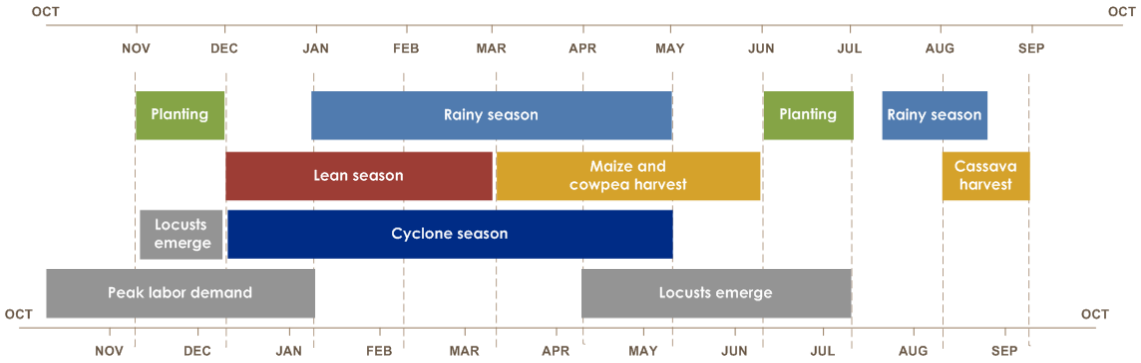
SEASONAL CALENDAR FOR A TYPICAL YEAR



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FEWS NET Madagascar
fewsinquiry.madagascar@fews.net
www.fews.net/madagascar

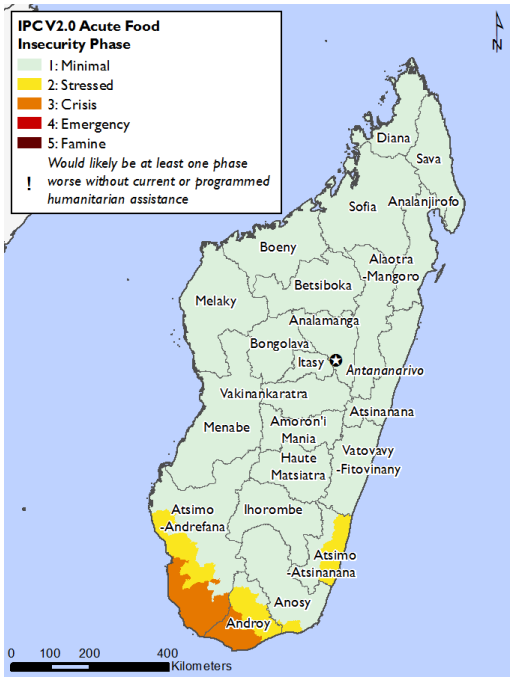
NATIONAL OVERVIEW

Current Situation

Seasonal progress

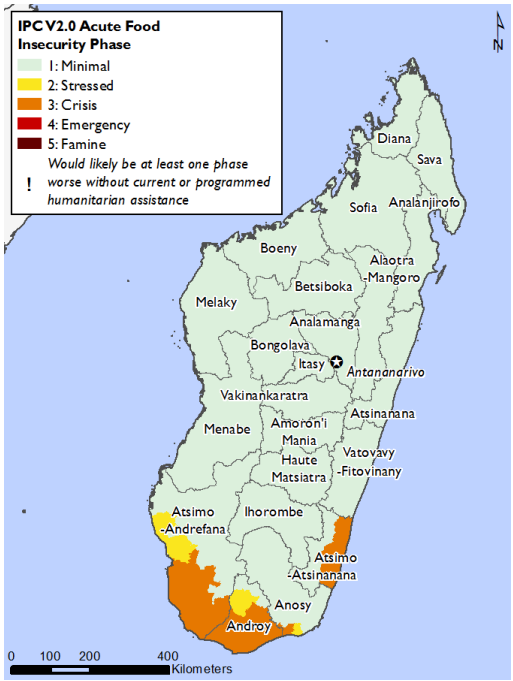
- **2018 rainy season:** The CHIRPS Anomaly since October 2017 shows that northern Madagascar received 126 to 150 percent above average rainfall. This was favorable for agriculture, particularly for rice and cash crops for export. The Southeast also received acceptable rainfall this year an improvement from the rainfall deficit of last year. Agroclimatic patterns seemed to return to in the central highlands as well. However, the southwest and the far south suffered from another year of below normal rainfall. The least rainfall was observed in Morombe district with only 50 percent of normal rainfall. In the south, recorded rainfall in Anosy region was just below 600 mm since January, which is lower than a normal year and near to rainfall totals from 2015-2016 during the El Nino drought. Androy region received acceptable rainfall between November and April except in Beloha. Following the usual end of the rainy season, between 10 to 30 mm of rain unexpectedly fell in Atsimo Andrefana region during the first week of June. This provided water to planted cassava and allowed farmers to prepare their land for off-season crops.
- **Export cash crops**: Vanilla, Madagascar's most important export cash crop, was severely damaged by Cyclone Enawo in March 2017 and the main production area was damaged again during its recovery period by Cyclone Ava in January 2018. The resulting drop in exports from Madagascar, which is the largest producer of vanilla in the world has led to a global vanilla shortage and a drastic increase in prices. Vanilla exports were valued at USD 202 million in January/January 2018 compared to USD 135 million in January/January 2017. Vanilla exports typically account for 40 percent of total export revenues for Madagascar but since end 2017 this has increased to 50 to 60 percent. Coffee exports are minimal (less than one percent) but domestic sales provide important income to smallholder farmers in the Southeast. Coffee production is decreasing in Madagascar because of decreasing productivity as most of the plants are old and less productive and the area in which coffee is grown has been impacted by successive cyclones. Domestic coffee prices have continued to increase since last year due to increased domestic demand while supply is low. However, export revenue from coffee is decreasing from MGA 4,498 million in January 2017 to MGA 445 million in October 2017 and near zero in 2018 (*Source: TBE INSTAT*).
- **Staple production:** Maize is mainly produced in the Southwest, Central Highlands and Middle West of Madagascar. Rainfall conditions were favorable to maize development in Central Highlands and Middle West. However, Fall Army Worm (FAW) damaged 15 to 65 percent of crops according to FAW Prevalence Assessment in Madagascar Mission Report by FAO in April 2018. In the Southwest, the combined effects of rainfall deficit and insects' infestation also drastically reduced production. By contrast, maize crops in the southeast received sufficient rain and were less infested by FAW so production is expected to increase compared to last year.

Projected food security outcomes, June to September 2018



Source: *FEWS NET*

Projected food security outcomes, October 2018 to January 2019



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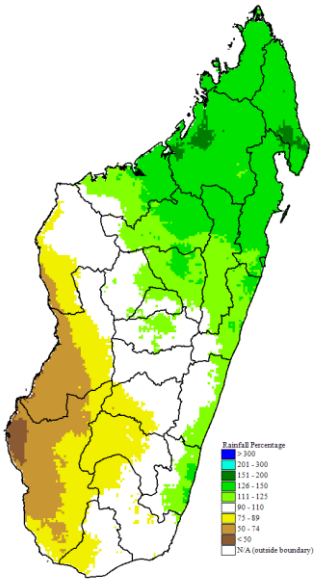
Markets and trade

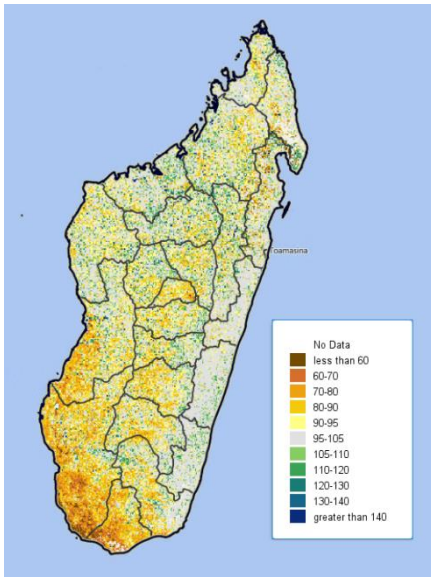
- **Rice imports:** Around 87,000 MT of rice have been imported between March and June 2018, which is half of last year and 30 percent below the 5-year average, likely due to expected near normal local rice production that reduces the amount of rice that is imported.
- **Market supply:** Despite the expected increase in rice production, the quantity arriving in markets is lower than expected and is not enough to return prices to normal levels. Traders are currently trying to gather rice as much as possible to prepare for the lean season when demand will increase.
- **Prices:** In mid-May 2018, OdR data showed that the average price of imported rice remained the same as April and last year at the same period. Nevertheless, it is 23 percent above the 5-year average. High rice prices persist because of general inflation in Madagascar from the depreciation of the local currency (Ariary) and the increase of fuel prices despite good supplies of staple foods such as maize, local rice or dried cassava at the markets. Prices for local rice remained the same as last month, 11 percent higher than last year due to less arriving on markets than expected, despite the increased production. Maize prices are 9 percent higher than in April because of the end of the harvest, though it is 15 percent lower than last year in some markets of eastern South and Southern Central Highlands due to higher supply. Overall prices are 17 percent higher than the 5-year average because supplies were not higher enough in the Southeast and in some cities like Antananarivo, Antsirabe I and Mahajanga I to have returned prices to normal after last year's rainfall deficit. Average dried cassava prices stabilized in April. Availability of sweet potatoes slightly improved and prices were stable compared to previous month but lower than last year in Ambovombe and Amboasary which suggests a better supply. It also remains 17 percent above the 5-year average.

Figure 1. CHIRPS Anomaly October 2017 – June 2018



Source: *USGS/FEWS NET*

Figure 2. NDVI Anomaly Dekadal June-10, 2018



Source: *USGS/FEWS NET*

Other key factors

- **Humanitarian assistance**: Between March and May 2018, humanitarian assistance was mostly allocated to Southern Madagascar where food needs were expected to be the greatest since the beginning of the year. Globally, more than half of the population living in that vulnerable part of the country received food aid and cash, and 40 percent received agricultural supports. These proportions may overlap. More than 9 million dollars of cash and more than 2.5 million MT of food were distributed.

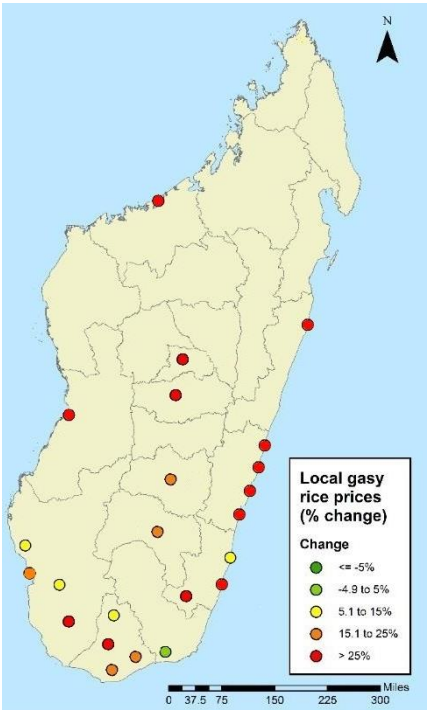
  Humanitarian assistance contributed to alleviate food gaps of poor households in some places where its coverage was widespread such as in Tsihombe. Post-cyclonic responses after Cyclones AVA and Eliakim in the northeast and southeast were sporadic because responses came late and and did not have important impact on food security in the targeted zones, except in Mananjary.

Assumptions

The most likely scenario for the July 2018 to January 2019 period is based on the following national level assumptions:

- **Agroclimatology:** According to NMME probabilistic forecasts for Africa and the Madagascar National Bureau the rainy season is expected to be normal between July and September 2018 in many parts of the country except in Eastern Madagascar where below normal rainfall may compromise the development of cash crops such as litchis at their flowering stage and cloves at their maturation stage. Between October and December 2018, better rainfall is also expected in most of the country which will allow for the timely planting of cereals and legumes in the South and main rice planting in North and Central areas. Nevertheless, deficit rainfall is forecast for Northeastern Madagascar during the period when vanilla crops are at their flowering stage.
- **Rice Production:** Main harvests of staple foods such as rice, maize, cassava and sweet potatoes will likely continue until July 2018 throughout Madagascar. Rice production will likely increase in Vakinakaratra region, the largest rice producing region in Madagascar in recent years. Despite the floods that affected this area at the beginning of the year after Cyclone AVA, rice production will likely be above the 5-year average of 715,000 MT due to the expanded planting areas and the intensification of rainfed crops. Meanwhile, production will also likely increase in other main producing areas such as Itasy, Alaotra Mangoro and Boeny regions which received sufficient and favorable rainfall and were not affected by any severe shocks. Southeast regions also recovered from the severe rainfall deficit of 2017 and a slight increase is expected in their rice production despite the low availability of seeds at the beginning of the season. Rice production in the Southwest will likely be below-average because the area only received 40 percent of normal rainfall. Urban production around Antananarivo will also decline because of reduced cultivated areas due to flooding after Cyclones Ava and Eliakim. Overall national rice production will likely be 3.6 Million MT which is 17 percent higher than last year and near the 5-year average.

Figure 3. Local rice prices (percent change of May 2017 compared to 5-year average)



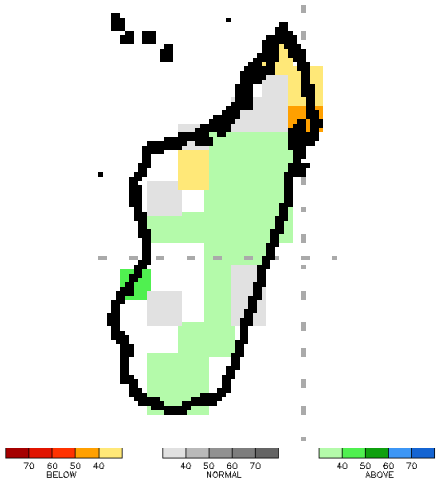
Source: *OdR/FEWS NET*

- **Other main staple production**: Overall national maize production will likely be 264,000 MT which is 6 percent lower than last year and 21 percent below 5-year average. As for cassava, the main producing areas in the South was also affected by 40 percent rainfall deficit. Nevertheless, production may increase in other parts where conditions were more favorable like in Haute Matsiatra Region. Therefore, overall national cassava production will likely be 2.6 Million MT which is 3 percent higher than last year but 7 percent below 5-year average.
- **Imports**: Rice imports will be at lowest in June because of the peak of main rice harvests, then it will slightly increase between July and October and will drastically increase during the lean season. Normal quantities of rice will likely be imported in 2018 because of expected near normal local production. A total of 260,000 MT is expected for 2018 of which 66,000 MT from July to October and more than 136,000 MT from November to February 2019. Nevertheless, the pre-electoral period may lead to more rice imports which will be distributed by candidates to vulnerable populations. Rice imports serve to alleviate below normal staple production in deficit areas such as the Southwest, the Southeast and the main cities with high demands. The exchange rate of Ariary/USD will slightly improve during the first part of the outlook period which will slow down imports, then it will decrease at the current level which will allow more rice imports.
- **Staple food prices:** According to FEWS NET price projections, prices of maize in the Extreme South of Madagascar will be near normal due to the slight increase of production. It will likely decrease in March with the coming harvests to be around 640 Ariary/kilo in June. Prices of cassava will continue increasing until January and start decreasing in April when the fresh harvest will start. Prices of imported rice will likely be stable between January and April although the first harvest of rice and other staple food. Then, it will decrease starting in May with the coming harvest of local rice but will

remain above normal at 1,500 Ariary the kilo. Overall, prices of local rice will likely remain above normal. In the southeastern, it will likely be stable at the above 1,850 Ariary/kg until May 2018 because of below normal and irregular supply in the area. In Antananarivo, the reference market of urban cities, it will likely decrease slowly starting January but will remain at above normal level over 2,250 Ariary/kg up to June.

- **Cash crop production**: Vanilla production is expected to be near normal this year (1,500 MT) as it was less affected by cyclones. Prices may decline due to loss of quality last year, as immature beans were combined with the vacuum packing of semi cured beans, but it will remain at historically high levels. Coffee prices will likely increase starting July and will continue increasing within the outlook period (*Source: SISAV data).* Revenue from exports will likely continue to remain at near zero. As for cloves, prices are going down and production will also likely below normal due to the many hazards to recently affect the producing areas.

Figure 4. NMME Forecast October to December 2018



Source: *NOAA*

- **Labor demand and income**: Labor demand is likely to increase between July and October compared to the current period because of upcoming harvests of many staple foods as well as cash crops such as coffee. As the area planted and the expected production is lower than normal in south, labor income will also be below normal. The period of November to February corresponds to the main rainy season in Madagascar and is typically a period of relatively higher demand for casual labor work, particularly within agriculture but also within cash crop export processing. Labor demand will likely be higher for land preparation with the expected near normal rain. The majority of workers will likely both work more hours and earn more income than they currently do. Nevertheless, the use of unpaid family labor may also be important because of limited ability of richer households to engage workers, thus limiting the opportunity for casual labor employment.
- **Livestock:** With the below normal rainfall in the South, pastures will likely deteriorate earlier than normal, and animal conditions will worsen during the dry season. Transhumance to northern districts such as North Amboasary, Tulear II or Bekily will be intensified. Livestock sales at below normal prices will increase and will be above normal given the below normal expectations for agricultural production. As a result, livestock herd sizes will likely continue to decrease, even though they had not yet recovered to their normal size following the El Nino drought years from 2015-2017. Insecurity has decreased because most herds are very reduced or are composed of only younger animals.
- **Humanitarian Assistance**: Humanitarian assistance will likely concentrate in the South following the poor agricultural production due to rainfall deficits this year. Less assistance will likely be focused on other vulnerable areas such as the Southeast where the situation has been near normal in recent months and where no specific shock is expected to occur within the outlook period. Nevertheless, humanitarian assistance in the South will remain below normal and below the El Nino years because of lack of timely declaration of emergency and difficulty to mobilize resources. Less than 20 percent of the population in Ambovombe and Tsihombe are planned to continue receiving food from WFP up to end July and half of population in 5 Communes of Taolagnaro will likely receive full ratio food up to September.

Most Likely Food Security Outcomes

For households throughout Madagascar, no major recent climatic, economic and social shocks have been identified to drive atypical impact that would suddenly worsen food insecurity situation to change the classification phase although some rainfall deficit rainfall, high food prices, Fall Army Worm, and temporary high Global Acute Malnutrition were reported in some areas. **Minimal (IPC Phase 1)** acute food insecurity is likely outside the areas of concerns.

In the **Mahafaly Plain: Cassava, Goats and Cattle (MG 23)**, reduced consumption of own-produced tubers, supplemented by expensive purchased foods and/or high consumption of wild foods continue to make it difficult for poor household to meet their food needs. About a 14 to 18 percent food gap was recorded for poor and very poor households in the area in May 2018. Higher proportions of households continue to migrate or oversell animals at low prices. The prevalence of GAM in the area is in Crisis phase with some pockets of severe undernutrition. Most humanitarian assistance ended in May and its

coverage reduced beginning in June. Considering this, poor and very poor households in MG23 are experiencing **Crisis (IPC Phase 3) acute food insecurity in June 2018.** Below normal production of cassava, sweet potatoes and maize is expected in the coming months. Stocks from own production will deplete earlier than normal and households will continue to atypically rely more on markets. Staple price increases will slow down because of harvests in source zones and livestock prices will stabilize. GAM prevalence will likely vary between 7 and 12 percent according to past reference years so the zone may remain in **Crisis (IPC Phase 3) between July and October 2018.** From November onwards, the area will likely be in its lean season. Staple consumption will deteriorate with the depletion of stocks from harvests. Staple prices will increase again, and livestock prices will decrease again. More agricultural labor opportunities are expected because of the beginning of the next cropping season and the expected near normal rainfall between October and December 2018. This will slightly improve household food access. Therefore, the zone will likely remain in **Crisis (IPC Phase 3) between November 2018 and January 2019.**

Androy Semi-Arid Cassava, Maize and Livestock (MG 24) Many households have depleted their own stocks and are currently relying more on markets. Staple prices remain at above normal levels. Adopted coping strategies include animal over-sale, non-mature crop consumption and wild food consumption, practicing unusual activities. Income reduced due to lower than usual prices for livestock on firewood sales. Food gaps are greater in the western part of the zone, which will experience **Crisis (IPC Phase 3) acute food insecurity situation in June 2018** while the eastern part of the zone will be in **Stressed (IPC Phase 2).** Between July and October, food access will improve because of cassava harvests in July-August, but food consumption gaps will persist due to below normal production. Very poor and poor households will remain in **Crisis (IPC Phase 3) between July and September 2018.** From October onwards, food consumption will deteriorate again because of own stock depletion. Households will be able to access other sources of food such as yellow cactus and other wild food, in addition to markets. Poor and very poor households will remain in **Crisis (IPC Phase 3) between October 2018 and January 2019.**

In the **Southeast: coffee, litchis, cassava (MG 19)**, the main rice harvest is ongoing allowing many households to access food from their own production, while prices of rice, sweet potatoes and cassava remained high but are decreasing. Income is excepted to increase from cash crop sales, like coffee. GAM prevalence is less than 10.4 percent in the area. Post cyclonic humanitarian assistance ended in May 2018. The poor and very poor are in **Stressed (IPC Phase 2) acute food insecurity in June 2018.** Between July and October, prices will likely to start to increase following normal seasonality patterns and food consumption gaps will also be minimal due to better availability and access to food in the northern parts of the zone. Households in southern areas will experience **Stressed (IPC Phase 2) acute food insecurity**, while northern areas will likely experience **Minimal (IPC Phase 1) acute food insecurity.** From November onwards, populations in the south will likely remain in **Stressed (IPC Phase 2)** due to the lean season and in **Minimal (Phase 1) acute food insecurity** in the rest of the zone.

In **Rice and lima bean - Tulear II (MG20):** Households in the area are currently facing **Stressed (IPC Phase 2) acute food insecurity** and will likely experience the same phase within the outlook period because of below normal production between July and October, and of near normal rainfall for normal agricultural labor demand and lower availability of seeds.

AREAS OF CONCERN

Androy Semi-Arid Cassava, Maize and Livestock (MG 24) - Beloha district

Current Situation

- **Staple crop production**: Households should have harvested maize in April but the majority of fields failed due to well below normal rain. The maize harvested was below normal and lasted less than one month for households that harvested, otherwise many households harvested nothing. Maize production was affected by erratic rains and mid-season dry spells although conditions were better at the beginning of the cropping season. Some cassava is being harvested green but most is still in the field awaiting harvesting in July-August. Nevertheless, production is also expected to be below normal and less than last year as crops were affected by drought at their development stage. Cassava leaves and fresh pulses are available but below normal.
  In Beloha District, the average yield for dried cassava in the reference year was an estimated 5 cart-loads, or about 1,000 kg/hectare. This year, less than one cart per hectare is expected. Maize harvests expected in March/April failed and as a result household have depleted their cereal stocks. They currently are harvesting some pulses and non-mature cassava. This in addition to fruits and green vegetables like cassava leaves or cucurbitaceous allow them to have less than 20 percent of their food from their own production.

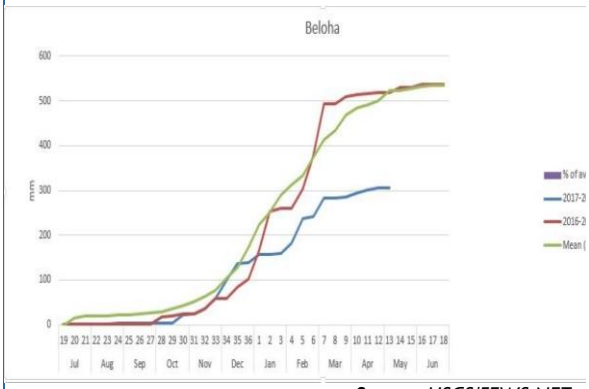
- **Market supply**: Food is largely available at the markets but less diverse. Dried cassava, maize, local and imported rice are the most common staples currently found on the markets. Dried cassava dominates more than cereals, despite being the normal maize harvest period. The markets for cassava are being supplied mainly by traders from outside the district. Low supplies of maize are due to low production this year.

- **Prices of staple foods:** Prices of cassava are higher than last year, nevertheless, it is below the 3-year average because market availability is better than during El-Nino years. Cereal availability is very low but prices of imported rice have not changed significantly and remained near the 3-year average because of the regular supply from Tulear Market. Prices of maize slightly decreased compared to last year and are also near the 3-year average as maize comes from surrounding districts which had better harvests in March/April.

Figure 5. Map of Livelihood Zone 24: Androy Semi-Arid Cassava, Maize and Livestock

Source: *FEWS NET*

Figure 6. Cumulative Rainfall in Beloha



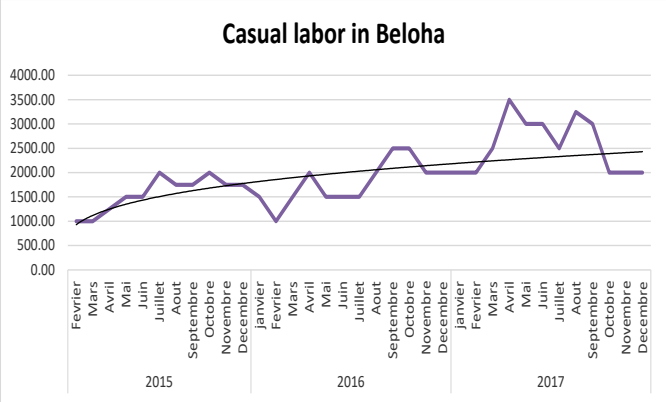
Source: *USGS/FEWS NET*

Livestock herds and prices: Livestock is one of the most important income sources for households in this zone. However, households have not recovered from the series of droughts between 2015-2017 and livestock herds were not restored. Households are now depleting their herds at very low prices, half of last year's prices, even though livestock body conditions are good, though pasture conditions are worsening. This has caused high supply on the market and lower demand from surrounding districts like from Ambovombe, Amboasary and Betroka. The Malagasy zebu currently ranges between MGA 500,000 to MGA 600,000 in beloha; goats/sheep range between MGA 60,000 and MGA 80,000 whilst chickens are ranging between MGA 4,500 and 5,000. The unfavorable livestock prices making it difficult for households to earn incomes especially when staple prices and dependence on market are high. Many households are selling around one goat per month in order to meet food and non-food needs.

- **Sources of food**: Households are highly dependent on markets. According to the Multisector In-depth Assessment conducted by the NVAC in April, more than 60 percent of consumed staple foods, pulses and oil came from purchase. These proportions have increased by 40 percent compared to last year because food assistance and own production decreased. Additionally, more than half of consumed dietary products, meat and leaves and vegetables are also currently from market purchases.

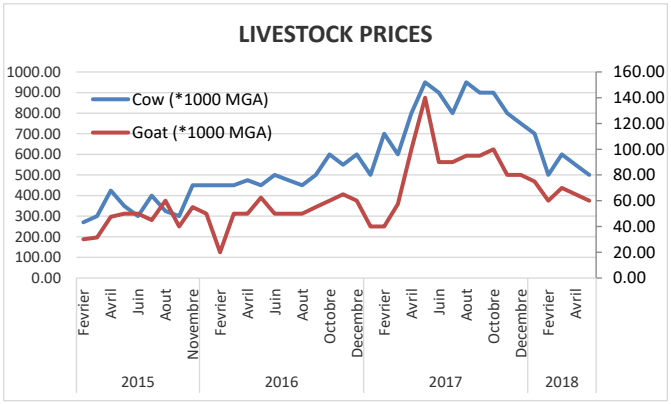
- **Water availability and pasture conditions:** Water is a critical resource that is in very short supply in the zone and water access affects both production and consumption. Water was sold for Malagasy Ariary 2,500 per 20 litres in April. Pastures are still mostly favourable and livestock conditions in most of the district are still moderate to good. This situation will likely begin to deteriorate and affect livestock conditions towards the start of the rainy season when the dryness exceeds current levels. Access to sufficient water is a major problem for stock owners between April to November, and this problem is the push factor behind seasonal migration. Seasonal migration to reserve grazing land is common throughout the zone. A pipeline is about to be constructed, by many local firms under UNICEF funding, from the Linta river to Beloha Chief of District and surroundings communes (more than 20 km) to feed the villages with underground water. The pipeline is expected to be functional by the end of 2018.

Figure 7. Evolution of casual labor wages in Beloha



Source: *SISAV*

Figure 8. Evolution of Cow and Goat prices since January 2015 in Beloha



Source: *SISAV*

- **Labor availability and prices:** Agriculture-based casual employment was very low during this cropping season. Only land preparation and first sowing happened in November-December. Then, rain stopped and agricultural activity ended. Labor wages were increasing since last year according to SISAV data from 1,000 MGA in early 2016 to 2,500 at the end of 2017. In May-June 2018, casual labor opportunities have improved because of peanut and sweet potato planting after the recent late rain. Labor migration started in October and is ongoing. According to normal trends, labor migration is most important between August and December in a normal year, and people return in January and stay until the end of the harvest. However, people who left their villages last year are not expected to come back soon and others continue to leave. Remittances from those who migrated is limited and only contribute to minor parts of remaining households.

- **Current food consumption:** According to the In-depth Multisectorial Assessment (EMA) conducted at the end of March – early April, households eat tubers 4 days a week and cereals 3 days. Staple foods are usually eaten with pulses (twice a week) or green leaves and vegetables (also twice a week). Dietary products like milk or meat are consumed less than once a month. Fruits are also rarely consumed (once a week). Consumption of oil and sugar is more than twice a week. Compared to March/April 2017, more or less the same proportion of households in Beloha have a poor food consumption score. However, the borderline food consumption score increased. This mainly results from the stable consumption of leaves, vegetables and fruits. Whilst many households are currently having stable consumption, some extremely poor groups are beginning to face difficulties and adopted coping strategies like increasing consumption of the red cactus fruit and to eat non-mature cassava to complement their meal (the proportion of households gathering non-mature crops increased from 33 percent last year to 46 percent this year according to EMA). Some also ate their seeds (32 percent compared to 14 percent last year). In addition to this, some households are reported to have bought non-preferred food such as bad quality dried cassava. Others have reduced the number or size of meals eaten as a way of preserving food.

The proportion of households adopting those two strategies is more than last year; however, households adopted it less frequent than last year at the same period. In light of this, whilst food consumption is still stable for many households, indicators of hunger are beginning to surface and conditions are likely to worsen as below normal or no harvest is expected for the coming months.

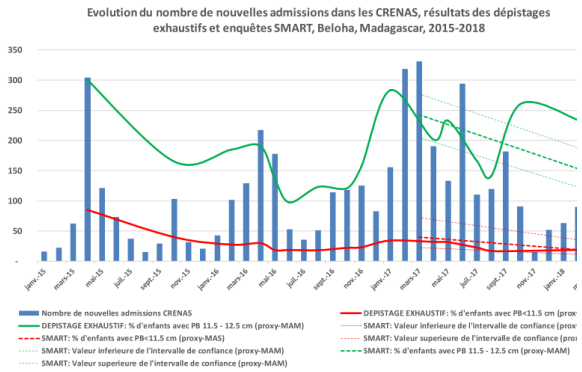
- **Wild food consumption**: EMA results show that 8 percent of fruits consumed by households are wild. Red cactus was the ost consumed wild food but according to the article on tree species for food security in the southern region of Madagascar by Lolona RAMAMONJISOA, Felana RALISON, and Vero ANDRIAMIARANTSOA, (Flacourtia indica) lamonty and (Salvadora angustifolia) Sasavy are also preferred during lean season. Tamarind prepared with charcoal wood ash was also eaten to replace lunch. Wild cucurbitaceae like watermelon or zucchini were less available because of lack of rains and finished earlier than normal. As for wild food, Fruits of (Adansonia za) Baobab, (Maerua filiformis) Solety and (Tamarindus indica) Kily are specifically highly consumed, about one basket of about 10kg per day per households. Globally, wild food contributed to near 30 percent of food for poor and very poor households.

- **Livelihood Change:** While food consumption is still stable for most households, incomes for many households become more and more strained. The situation is worse for very poor households who did not produce and who now have little money to access food from the market. More than half of households in the districts reported to increase animals 'sales. The proportion of households using that strategy also drastically increased from 6 percent last year to 58 percent this year. Some very poor households also reported selling their kitchen utensils and domestic assets in order to obtain money to buy food. The proportion of concerned households increased from 7 percent last year to 34 percent this year. There are indications that households continue to migrate to far away destinations in search of work like to Majunga and to Tulear to look for casual transport services like pulling carts or also to work as laborers. Whilst this can be a normal livelihood activity, it is atypical for households to continue migrating this time of the year when they are expected to harvest pulses and to plant sweet potatoes. Although the proportion of concerned households may be relatively low (7 percent) it has also dramatically increased since last year (2 percent in 2017). Given that opportunities for exploiting charcoal and firewood are declining due to strict environmental regulations by the government, some very poor households are now travelling longer distances in search of areas to collect dry firewood or poach fresh trees for charcoal production. This poses a risk to these households as some of the areas they visit are insecure. Other strategies that have been reported by numerous households consist of reducing other expenses to maintain a certain level of food consumption (by 32 percent), using savings (by 32 percent) or begging (by 27 percent). Among other strategies, only selling land/houses and practicing illegal activities have not changes compared to last year (by less than 4 percent).

- **Humanitarian assistance**: Humanitarian assistance contributed to stabilizing food consumption in the district. Through the FIAVOTA safety net program of FID/WOLRD BANK/UNICEF, around 8,000 households; very poor, poor and middle with children under 5 years leaving in 4 communes out of 6, received MGA 30,000 / month between March and May 2018 which was one third of the total need ratio for 32 percent of total households in Beloha. This program aimed to stabilize household incomes affected by drought and to support the reconstitution of household's assets through the revival of economic activities like agriculture and livestock. WFP also had food and cash for work programs in some communes, such as Tranovaho, where 6,000 vulnerable households received 70,000 ariary between January and May 2018. CRS distributed 1,870 MT of sorghum through their Havelo Program to about 4,000 households since mid-February.

Nutrition: According to SMART surveys done by the Nutrition Cluster in February-March 2018, the prevalence of Global Acute Malnutrition (GAM) in Beloha was 9 percent [95 percent CI: 8 percent-10 percent] putting the district in a "poor" situation according to WHO threshold. This situation results from less household food access, poor continuation of breastfeeding until the age of 2 and less access to safe water. Comparison to last year's SMART surveys concluded in February-Avril 2017 a decrease of Global Acute Malnutrition in that district thanks to improvement of the health programs. CRENAS admissions have been increasing since April which is normal according to UNICEF, because it reflects the peak of the lean season. But, a peak of

Figure 9. Evolution of nutrition indicators in Beloha since January 2015



Source: *Madagascar Nutrition Cluster*

over 20 admissions in Tranovaho in April was above normal and was an alert. MUAC screening data presents some pockets of malnutrition in Tranovaho and Behabobo where the proxy-GAM is above 15 percent or the proxy-SAM above 2 percent. No major increase in the mortality rate has been reported.

Assumptions

The most likely scenario for the July 2018 to January 2019 period is based on the following zone level assumptions:

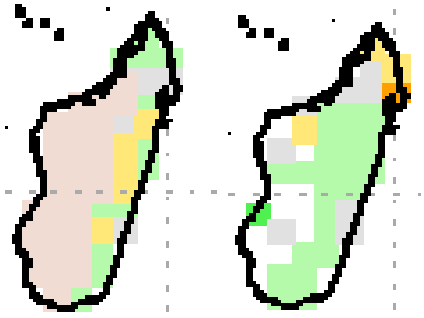
- **Agroclimatology**: According to the National Department of Meteorology, there will be small amounts of rain (under 25mm in one week) in Southern Madagascar in early June which may be favorable for the planting of off-season crops if farmers have cuttings and seeds. NMME forecasts also show normal rainfall in Southern Madagascar between July and September 2018 followed by average to above average rainfall between October and December 2018 which will allow farmers to prepare land and to plant maize and pulses.

- **Staple production**: The next harvests normally concern sweet potatoes in June-July and cassava in July-August. However, lack of timely rain did not allow sweet potatoes to be planted and cassava plants are not in peak conditions, so production will likely be near zero and late for potatoes and off-season maize; and below normal for cassava. Overall household stocks for very poor and poor households will likely last less than one month.

- **Market supplies of staple foods:** Although low production is expected across Beloha District, markets may be well supplied during ML1 with cassava and sweet potatoes products from other districts such as Northern Tulear, Betroka or central highlands (Ambalavao, Ankaramena or Antsirabe). Products will be at higher prices and households' purchasing power will decline. Imported rice supplies from Tulear or Fort-Dauphin will likely not be disrupted and will behave normally. Its price will likely remain stable at 1,575 Ariary per kilo within the outlook period.

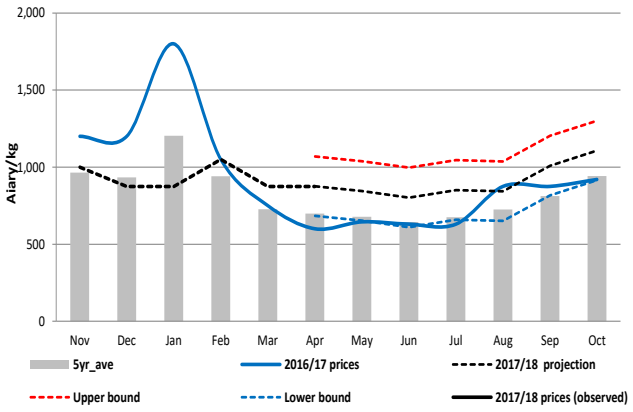
- **Staple food prices:** According to FEWSNET price projections, prices of maize in Ambovombe, the reference market for the vulnerable areas of LHZ 24 will be above average. It will likely remain stable during ML1 and will increase beginning in September through ML2. A maximum of 1,800 ariary per kilo (equal to 450 per cup) will likely be reached in January/February. The prices in Beloha, which is an importer of maize from surrounding districts will likely follow Ambovombe trends and will likely reach 2,000 Ariary per kilo (equal to 500 per cup) by the end of ML2. Dried cassava prices will slightly decrease at the beginning of ML1 because of harvests but will remain above normal because of insufficient production. It will likely increase earlier than normally to over 2,000 Ariary per kilo at the end of ML1 and will remain stable at this high level during ML2.

Figure 10. Rainfall forecasts for July-Sept 2018/ Oct-Dec 2018



Source: *NOAA/NMME*

Figure 11. Integrated price projection for maize, Ambovombe



Source: *FEWS NET*

- **Pastures and water**: Pasture will remain stable at low level in ML1 although the little rain of June. Pastures are expected to deteriorate further during the peak of the dry season in ML2. Water availability is also expected to worsen during the same period except in some communes which will likely be served by the new pipeline in ML2. Water prices will remain stable within ML1 and will drastically increase in October before dropping to normal levels again in November.

- **Livestock conditions and prices**: Livestock prices normally increase between June and September with the staple harvests and starts to decrease in October. Livestock prices will likely remain stable at 400,000 to 500,000 ariary between July and October. After that, animal sales will likely be intensified, and livestock prices will likely decrease to their lowest level, between 250,000 to 300, 000 Ariary in January 2019. Due to lack of grass, livestock are expected to be thinner both in ML1 and ML2 because they will only be eating cactus leaves.

- **Availability of wild foods:** Typically, wild food is less consumed and less available in ML1 but highly available and consumed in ML2. Wild food availability will likely be above average due to staple food shortage both in ML1 and ML2.

- **Nutrition**: In the months of July-September that normally cover the peak of harvests, levesl of acute malnutrition are likely to slightly improve but will remain at "poor" levels (between 8 percent and 10 percent). Humanitarian assistance related to nutrition is expected to be strengthened and likely have some positive impact on wasting. Centers will likely be supplied, and mobile consultations will resume in the district. The level of acute malnutrition will likely increase starting in October and will likely continue until February 2019 due to the beginning of the lean season. No major increase in mortality is expected.

- **Labor opportunities and wage rates:** Labor opportunity will slightly increase at the beginning of ML1 compared to currently with the land preparation and the planting of off-season crops. However, opportunities will likely remain below normal because of lack of seeds and the limited abilities of richer households to hire labor after the recent failed harvest. The same scenario will likely happen in ML2: the main farming season may start on-time with the normal to above normal rain expected in October but will likely remain below normal. Labor wages will likely follow the normal seasonality: slight increase from July to October, stability in November-December and decrease in January-February. It will likely vary between 2,500 ariary and 3,500 Ariary.

- **Self-employment – charcoal and firewood**: This activity will likely expand during the outlook period but income from this source will be reduced, during ML1, for each household because many people practice it for lack of agricultural labor opportunities. This trend will likely continue through ML2 but in a lower proportion because of the rainy season.

- **Humanitarian Assistance**: FIAVOTA safety net transfers will continue until 2019 but the modality of transfer has been changed to every two months since April 2018 and the amount will be reduced to 20,000 ariary which is 20 percent of the total need ratio. June and onwards are normally harvest months so no major humanitarian assistance is planned for that period. Only, 639 households (0.5 percent of total population) are expected to receive a full ratio of food until September 2018.

Most Likely Food Security Outcomes

Many households have depleted their stocks and are currently relying on markets and on wild food consumption to fill the gap induced by the low agricultural production. Staple prices remain at above normal levels as available products are from other districts. Poor households have already adopted Crisis (IPC Phase 3) strategies to fill their consumption gap such as overselling animals, consuming non-mature crops or seeds, and practicing non- usual activities like charcoal and firewood sales. Nevertheless, income from these sources also reduced due to low prices of livestock and low-prices for firewood. Opportunities for agricultural laborare also limited. Nutrition status remains at "poor" level, under 10 percent. Therefore, very poor and poor households in Beloha will still experience a **Crisis (IPC Phase 3) acute food insecurity situation in June 2018.**

Between July and October, food access will improve a little compared to the current period because of cassava harvests. Some off-season potatoes and pulses planted in May-June are also expected in September thanks to recent rains. Nevertheless, food consumption gaps will persist due to below normal production, and no surplus crops will be available for sale to boost incomes. Stocks from the next harvests expected in July-August will deplete earlier than usual. Consumption of wild foods will continue. Animals stocks will also deplete for poor households and Crisis (IPC Phase 3) strategies will be intensified. Humanitarian assistance coverage will likely reduce even as safety nets will be maintained but with lower amounts. Nevertheless, GAM prevalence will not likely exceed 15 percent. People will likely not easily meet their food needs and very poor and poor households will stay in **Crisis (IPC Phase 3) between July and September 2018.**

From November onwards, food consumption will deteriorate again because of own stock depletion. However, households will likely be able to access yellow cactus and other wild foods in addition to markets. Incomes for many households will likely become more and more strained and activities like selling wild food will be intensified. More numerous poor and very poor households will likely sell their kitchen utensils and domestic assets in order to obtain money to buy food. Migration to far away destinations in search of work like to Majunga and to Tulear to look for casual transport services like pulling carts or also to work as laborers will likely increase. Nevertheless, GAM prevalence will likely between 10 and 15 percent in no action related to food security is taken to prevent the deterioration of food situation. **The Crisis will be maintained between October 2018 and January 2019 (IPC 3).**

Mahalafy Plain: Cassava, Goats and Cattle (MG 23)

Current Situation

- **Figure 12.** Map of Livelihood Zone 23: Mahalafy Plain: Cassava, Goats and Cattle

Source: *FEWS NET*

- **Rainy season progress:** Rainfall was very below normal this year. In one village in the district of Betioky, where a pluviometer is operational, recorded cumulative rainfall since October 2017 was only about 85 mm (the 2001-10 average for the same period is 349) ~24 percent of average.

- **Main crop production**: All crops that are usually harvested between March and May like maize, groundnuts, cowpeas, and mung beans failed or produced well below average, as a result of insufficient rains. On the hills, towards the district of Bekily and between the RN13 joining Betioky-Ejeda-Ampanihy and the Western slope of the Mahafaly plateau, crops have performed better, but still 10 percent below average. Some short cycle off-season crops are usually planted after the maize harvest to maximize residual moisture and cash opportunities, in particular pulses and sweet potatoes. However, during the FEWSNET field assessment mission in May, few plots were farmed, especially in the district of Ampanihy. Nevertheless, pulses were recently planted in areas generally associated with cassava, particularly in the hills East of Ampanihy, coastal areas and the district of Betioky. Sweet potatoes cuttings were said to be unavailable. Cassava is on plots; its height and foliar surface is in generally less than expected, but this, too, varies depending by the area, the district of Ampanihy and Beloha seem most likely to yield below-normal production. However, it is the lack of staple production that poses the largest threat to the cassava harvest, because, as has happened in the past, households dig tubers before their full growth to obtain food.

- **Market supply**: Market visits undertaken in Betioky, Ampanihy, Tsimanapesotse, Itampolo, Itomboine and Androka found that the surplus maize that usually comes from the North of the area (Sakaraha, Morombe, Ihosy) was found only in Betioky and in the coastal areas but in fewer quantity because of lower production in those producing areas but also transpostation via pirogue, as the pontoon boat in S. Agustin is no longer operational. Maize was also found in some markets, as well as dried cassava from the 2017 harvest stock, i.e. of bad quality, from Ambovombe

- **Prices of staple foods:** Dried cassava prices in Chef-lieu of districts in the zone stabilized at 500 Ariary since January 2018. It was below the 3-year average, although expected bad productions because market availability is better than during El-Nino years. However, it ranged from 800 to 1,100 Ar/Kg outside the Chef-Lieu then poor households could not afford it since their purchasing power was decreasing with the constant decline their income. As for maize, prices in Chef-Lieu ranged from 800 to 1,100. It could reach 1,200 Ar/Kg in smaller markets. Imported rice was not found in Betioky. Prices of rice, both local and imported, have declined since April and were 20 to 25 percent higher than the 3-year average.

- **Labor availability and wages:** Since November 2017, there is no local agricultural labor opportunity because of lack of rain. Few opportunities were present in May/June when a little rain fell. Wages remained stable.

- **Livestock herding and sales**: Good conditions last year were positive for good conception rates in cattle and small ruminants, but the dry spell in the area limited the availability of green pastures. Milk production is said to be halved, mostly amounting to half a liter per day. Herd sizes are greatly reduced by stress sales. Better off households typically own about 50 cattle, now their herd sizes are between 10 and 20 (~30 percent of normal). Poor households usually have 10 cattle at the end of the lean period: this year, most poor households only had 2 (~40 percent normal). This dynamic is also found among the herds of small ruminants, although poor households own proportionally more (50-60). This year, herds of only 4-5 animals are common (~10 percent of normal). Pastures in the north of the district of Betioky (outside livelihood zone MG 23) are better, and transhumance to these areas has increased above normal.

- **Livestock prices:** Prices usually increase after the harvest, as households recapitalize, but this year prices have remained the same for months. An adult cow now trades at 500,000 Ar (it is usually 1,000,000) and the proportion (45-55 percent) is similar for small ruminants. Only in Betioky are cattle prices more stable (1,000,000-800,000 Ar), as livestock comes from the northern part of the district.

- **Other sources of income:** Since November 2017, there is no local agricultural labor opportunity because of lack of rain. Fewer opportunities were present in May/June when a little rain fell. Wages remained stable. Sales of firewood and charcoal are increasing but income from that source is reducing. Poor households will rely on informal safety nets for livelihood survival: this will increase debts.

- **Food consumption**: The EMA survey revealed that households eat tubers 4 days a week and cereals 3 days. Staple foods are usually eaten with pulses (twice a week) or green leaves and vegetables (five times a week). Dietary products like milk or meat are consumed once a week as well as fruits. Consumption of oil is twice a week and that of sugar one. Compared to March/April 2017, higher proportion of households in MG23 had a poor food consumption score. However, the borderline food consumption score decreased, and acceptable consumption did not change. Extremely poor groups are beginning to face difficulties and adopted coping strategies like buying less preferred food such as bad quality dried cassava, reducing the number of meals and the portion (the proportion of households borrowing food increased from 28 percent last year to 33 percent this year according to EMA). Some over sold their animals, spent their savings and ran to debt to survive.

- **Humanitarian assistance**: Food/cash distributions and school feeding programs provided have had an impact on food consumption, but because the last distributions were provided in March, focus groups report insufficient humanitarian assistance.

- **Livelihood Change:** For this time of the year, coping strategies are all atypical. Among the most reported are reducing consumption, migration, charcoal-making, consumption of Opuntia Stricta cactus, and selling assets, often beyond livelihood survival thresholds, like selling their last female animals, if not all their stocks. rCSI results, show higher proportions of crisis food coping in Ampanihy and Toliara II.

- **Water availability and pasture conditions**: Water access in the area has not improved. Pasture was mostly absent in some communes like Beheloka where bare soil is present instead of regular pastureland, even though farmers from the coast sent their livestock to graze there. Temporary transhumance into upper communes like in Vatolatsaka is observed.

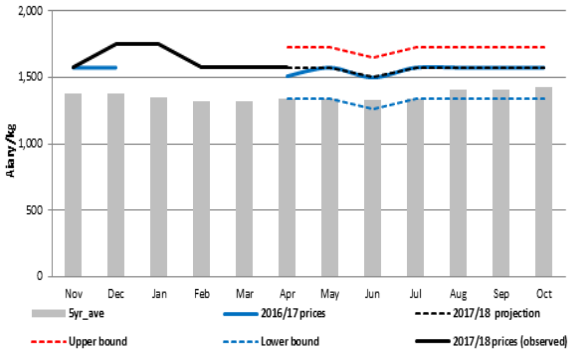
- **Nutrition**: SMART surveys done by the Nutrition Cluster in March-Avril 2018, the prevalence of Global Acute Malnutrition (GAM) in Ampanihy was 10.1 percent [95 percent Confidential Interval of 7.2 to 14.1 percent] putting the district in a "alert" situation according to WHO threshold. This situation results from lower vaccination rate, lower coverage of Vitamin A supplementation and lower rate of deworming. Higher morbidity toward fever and cough was also observed. Breastfeeding practices were not done properly: low rate of timely initiation to breastfeeding, low rate of exclusive breastfeeding before 6 months, low continuation of breastfeeding until the age of two and low introduction of solid food at 6 months. Compared to last year's SMART surveys concluded in February-Avril 2017 a non-significant increase of Global Acute Malnutrition in that district because of lower household food access. CRENAS admissions and treatments at the Centre de Santé de Base in Itampolo are quite stable since January because of many preventions and treatments. 2018 data on screening do not show a high peak like in 2015 and 2017 during the first quarter. Crude mortality rate was 0.28 and that of under five children 0.14 in March-April. No major increase in the mortality rate has been reported

Assumptions

The most likely scenario for the June 2018 – January 2019 period is based on the following zone level assumptions:

- **Agroclimatology:** Short-term forecasts by the Direction Générale de la Météorologie Madagascar (http://www.meteomadagascar.mg/tendance-intra-saisonniere) confirm that precipitation in the next month would affect the Eastern part of the country, but not MG 23. This has implications for the few crops currently in the field, including pulses and cassava.
- **Staple production:** Poor rainfall will lead to near complete failure of maize. It will affect cassava production with increased consumption before full maturity, the harvest (until +/- September) is expected to be poor.
- **Market supplies of imported rice and dried cassava**: More trade is expected from North Tulear and the Central highlands of Madagascar (Ankaramena/Ambalavao for cassava and Antsirabe for maize).

Figure 13. Integrated price projection of Imported rice in Tulear



Source: *FEWSNET*

- **Livestock:** Poor pastures during the conception period among bovines will result in less pregnancies than normal; assuming that poor households will only have one cow, only 0.5 deliveries per herd will occur on average. With small ruminants, that can have two pregnancies per year, recapitalization is easier, but it is unlikely that females actually will have two pregnancies in these conditions: consequently, recapitalization of livestock will take longer and herd sizes will be well below normal, even after the outlook period.
- **Milk production**: 50 percent of normal milk production will continue due to poor pasture conditions
- **Staple food prices:** Given the below normal production in the typically surplus areas near MG 23, trade flows are expected to be reduced, and supply below normal. This will likely increase maize and rice prices by 15 percent to above average levels.
- **Own produced stocks**: Because of low crop production, household stocks for very poor and poor will likely only last for one month.
- **Labor opportunities and wage rates:** Wage levels from agricultural labor like harvesting and land preparation for off-season crop are assumed to be normal, although rainfall in the 2018/19 campaign are expected to be average, demand for hired labor is assumed to be slightly below normal due to the decapitalization that occurred.
- **Cropped areas for next season:** Households will likely prefer cassava to maize, in order to minimize risks. In September, a 10-15 percent increase in cassava-planted area is predicted, and the area dedicated to maize farming will decrease accordingly.
- **Humanitarian Assistance:** No humanitarian assistance is planned during the outlook period.

Most Likely Food Security Outcomes

Poor and very poor households in MG23 will likely experience **Crisis (IPC Phase 3) acute food insecurity in June 2018.**

Below normal production of cassava, sweet potatoes and maize is expected in the coming months. Stocks from own production will deplete earlier than normal and households will continue to atypically rely more on markets. Nevertheless, staple price increases will slow down because of harvests in source zones and livestock prices will stabilize. GAM prevalence

will likely vary between 7 and 12 percent according to past reference years so the zone may remain in **Crisis (IPC Phase 3) between July and October 2018.**

From November onwards, the area will be in its lean season. Staple consumption will deteriorate with the depletion of stocks from harvests. Staple prices will increase and livestock prices will decrease. More agricultural labor opportunities are expected because of the beginning of next cropping season and the expected near normal rainfall between October and December 2018. This will slightly improve household food access. The zone will likely remain in **Crisis (IPC Phase 3) between November 2018 and January 2019.**

Other areas of concern

Southeast: Coffee, Litchis, Cassava (MG 19)

The main rice and cassava harvests are ongoing and cereal and tuber production is expected to be higher than last year although below normal. Many households are currently accessing staple foods directly from their own production. Household stocks of rice have been renewed with the current harvest and cassava stocks in many communes will be available until July. Households are therefore depending less on markets where prices of rice, sweet potatoes and cassava remain high but are decreasing. FEWSNET price projection of local rice in Mananjary, the reference market of deficit areas in the southeast, indicates a decrease to just above normal levels, between 1,550 Ariary and 1,600 Ariary, from July to September as a result of regular supply from surrounding producing districts.

The main sources of income in the region are agricultural wages, sales of cash crops and livestock products. Following normal trends, agricultural wages have been increasing since January and reached 2,900 Ariary in May 2018 compared to 2,600 Ariary in January mainly due to more availability of labor. After a constant increase since April 2016, coffee prices started to decrease in January 2018. Pepper prices also dropped. However, clove and vanilla prices are increasing giving some stability to household income.

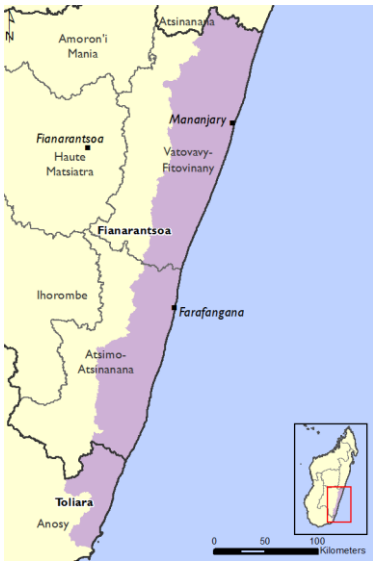
The April SISAV bulletin reported more wild food consumption and a decline in the number of meals per day as pre-harvest coping strategies. Rice remained the most consumed staple even if it slightly diversified during lean season when household also consumed breadfruit and *tavolo*. Households also consumed less diverse foods, mainly cereals and vegetables, even though the area is coastal. Consumption of milk and dietary products, meat and pulses is very rare. Most consumed foods are available in reasonable quantities at the market level.

WFP SMART surveys undertaken in May 2018 revealed that GAM prevalence in the zone ranged between 3.9 in Mananjary and 10.4 percent in Nosy Varika.

Post cyclonic humanitarian assistance after Ava and Eliakim targeted more than 20 percent of population Mananjary and less in other districts but most of them ended in May 2018.

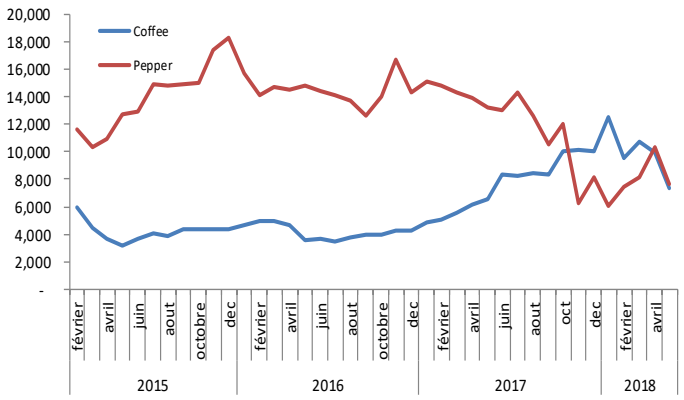
The area is currently in **Stressed (IPC Phase 2) acute food insecurity in June 2018.** Between July and October, prices will likely start to increase because of the post-harvest period. Nevertheless, the increase will follow normal seasonality patterns. Food consumption gaps will also be minimal due to better availability and access to food particularly in Vatovavy Fitovinany Region. Therefore, households in the southern part of this livelihood zone will experience

Figure 14. Map of Livelihood Zone 19: Southeast: Coffee, Litchis, Cassava



Source: *FEWS NET*

Figure 15. Cash crop price evolution 2015-2018



Source: *SISAV*

Stressed (IPC Phase 2) acute food insecurity while households in northern areas will likely experience **Minimal (Phase 1)** acute food insecurity**.** From November onwards, prices will continue to increase but households will also access to more income from vanilla, litchis and cloves sales. Despite the lean season, the situation will likely remain in **Stressed (IPC Phase 2)** acute food security in the south and in **Minimal (Phase 1)** acute food insecurity in the north.

Rice and Lima Beans (Tulear II) (MG 20)

Only 200 mm of rain was recorded, which is 50 to 74 percent of average. The first presence of Fall Army Worm in Madagascar was also found in this area in November 2017 and low treatment coverage halved maize crops. Overall, cereal production in the area decreased compared to last year and to average. The area is normally a surplus area so a decrease of its production may not necessarily lead to food gaps among its population though livelihoods in the area may be stressed. Therefore, households in the area are currently facing **Stressed (IPC Phase 2) acute food insecurity** and will likely experience the same phase within the outlook period because of below normal production between July and October, and of near normal rainfall for normal agricultural labor demand and lower availability of seeds.

- **Figure 16.** Map of Livelihood Zone 20: Rice and Lima Beans (Tulear II)

Source: *FEWS NET*

EVENTS THAT MIGHT CHANGE THE OUTLOOK

Table 1. Possible events over the next eight months that could change the most-likely scenario.

Area	Event	Impact on food security outcomes
National	Presidential pre-election or post-election troubles	Political instability always has had an impact on trade flow in Madagascar especially when customs go on strike and some roads can be blocked for one or other reason. This also may disturb market functioning and temporarily increase prices of specific food like rice and cooking oil.
	High depreciation of Ariary toward Dollars as the Malagasy Ariary to go beyond 4,000 Ariary between October 2018 and January 2019 according to Trading Economics global macro models and analysts' expectations.	Depreciation of Ariary incite more exports for agricultural products such as legumes. The probable impacts will be some higher domestic prices because local production does not follow. This will worsen food access to more diverse food and will lead some urban cities like Fianarantsoa to a stressed (IPC 2) acute food insecurity.
	High food inflation rate which is expected to be 11.52 percent by the end of this quarter according to IMF	This also will worsen purchasing power of households depending on market purchase over the year like people living in urban cities particularly poor households and will create some pockets of stress (IPC 2) food insecurity situation
MG 24	Global Acute Malnutrition will be higher than 15 percent in projected period	With the severe food gap that already is expected in the district, a higher impact on nutrition will lead to an Emergency (IPC 4) in that situation between October 2018 and January 2019
MG 23	Global Acute Malnutrition will remain above 10 percent in projected period	Associated to an acceptable household access to diverse food, a high rate of GAM will put that district already vulnerable to shock like price increase and climatic shocks to a stressed (IPC 2) acute food insecurity between October 2018 and January 2019.

ABOUT SCENARIO DEVELOPMENT

To project food security outcomes, FEWS NET develops a set of assumptions about likely events, their effects, and the probable responses of various actors. FEWS NET analyzes these assumptions in the context of current conditions and local livelihoods to arrive at a most likely scenario for the coming eight months. Learn more here.