AFRICAN RISK CAPACITY (ARC)

RESPONSE PLAN FOR DROUGHT-RELATED CRISES

October 2013
Acronyms and abbreviations

CFSVA  Comprehensive Food Security and Vulnerability Analysis
ANACIM  Agence Nationale de l’Aviation Civile et de la Météorologie (National Civil Aviation and Meteorology Agency)
ANSD  Agence nationale de la statistique et de la démographie (National Agency for Statistics and Demography)
ARC  African Risk Capacity
ECOWAS  Economic Community of West African States
CILSS  Permanent Inter-State Committee on Drought Control in the Sahel
CLM  Cellule de lutte contre la malnutrition (Malnutrition Unit)
CNSA  Conseil national à la sécurité alimentaire (National Food Security Council)
CSA  Commissariat à la sécurité alimentaire (Food Security Steering Committee)
CSE  Centre de suivi écologique (Ecology Monitoring Centre)
DEPA  Direction de l’élevage et des productions animales (Livestock and Animal Production Division)
DGPSN  Délégation générale à la protection sociale et à la solidarité nationale (National Delegation for Social Security and Solidarity)
GTP  Groupe de travail pluridisciplinaire (Multi-Disciplinary Working Group)
JICA  Japan International Cooperation Agency
MINT  Ministry of the Interior
MSAS/DSRSE  Ministry of Health and Social Welfare/Directorate of Reproductive Health and Child Survival
PNDE  Plan national de développement de l’élevage (National Livestock Development Plan)
PNIA  Plan national d’investissement agricole (National Agriculture Investment Plan)
EWS  Early Warning System
SMART  Standardized Monitoring and Assessment of Relief and Transitions
SNDES  Stratégie nationale de développement économique et social (National Strategy for Economic and Social Development)
WAEMU  West African Economic and Monetary Union
WFP  World Food Programme
WRSI  Water Requirement Satisfaction Index
ZAR  Zone à Risque (Food Insecurity Risk Area)
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I/ DESCRIPTION

I.1 General situation

I.1.1 Introduction

The African Risk Capacity (ARC) provides parametric weather insurance coverage to African governments for agricultural seasons in case of drought. In return for premium payments into the mutual, governments are eligible to receive a payout of up to USD 30 million. With Senegal’s significant exposure to catastrophic drought events, the ARC could help to improve the management of this risk and, if disaster strikes, enable a more timely humanitarian response.

Droughts significantly threaten record GDP growth in sub-Saharan Africa. At the household level, the consequences of droughts can be devastating. An ARC cost-benefit analysis (CBA) examined existing evidence regarding the timing of household coping actions when faced with a drought and the likely long-term cost impacts of these actions. From this baseline, the study then estimates the economic benefits in acting early and thus protecting households’ economic growth potential – that is intervening in time to prevent households’ negative coping actions such as reduced food consumption, livestock death, and distressed productive asset sales, which, in the absence of external assistance, have increasingly pronounced negative consequences. The CBA calculates the economic benefits of getting aid to households in the critical three months after harvest could result in nearly USD 1,300 per household assisted in terms of protected economic gains.\(^1\)

In order to improve resilience to natural disasters, two key elements are required: risk management and investment. Investments that support long-term resilience against food insecurity can address chronic risks and provide a base of predictable on-going assistance that can support poor and vulnerable households to build assets and livelihoods, which will in turn develop resilience to cope with normal and somewhat frequent, mild shocks without external assistance. From this base level of investment, sound risk management becomes critical. This is where a tool such as ARC can offer the most value, providing dedicated contingency funds that can scale up safety net systems in a reliable, timely manner, allowing them to remain solvent and sustainable, protecting hard-won gains for households, and reducing countries’ reliance on emergency appeals.

This Operations Plan outlines how ARC funds would be used in the case of a payout to Senegal. It first outlines the general national drought conditions and the ARC risk transfer parameters for Senegal. It then describes in detail the activities that would be pursued with ARC funds and finally provides additional practical information on the implementation and monitoring of this Operations Plan.

I.1.2 Physical and Agricultural Features

Senegal is located in the far west of the African continent, between 12°20’ and 16°40’ latitude north and 11°20’ and 17°30’ longitude west, and covers a surface area of 196,720 km\(^2\).

\(^1\) A mutual insurance company is owned and overseen by its members.

Senegal’s topography is generally flat with an altitude of less than 50 m over nearly 75% of the country. The highest point (581 m) is located in the far south-east in the foothills of the Fouta-Djalon.

The soil has a pedological gradient that decreases in fertility from west to east. In the north the soil is sandy and dry, in the centre it is ferruginous and in the south it is lateritic. In general the soil is prone to erosion by wind and water, which are considered to be among the main reasons for its degradation. Nearly half the soil (47%) is poor or unsuitable for agriculture and 36% is classified as poor to average and only gives low yields.\(^3\)

Senegal is a country in the Sahel subject to the fluctuations of the climate. The most important climatic factor is a significant geographic variability in average rainfall from over 1000 mm in the south to less than 300 mm in the north. The country can be divided into two general climatic regions on either side of isohyet 500 mm in terms of the spatial distribution of the rainfall:

1. The Sahel region north of this isohyet consists of two rainfall patterns: (i) the north Sahelian system with a rainfall of less than 300 mm and (ii) the south Sahelian system with a rainfall of between 300 and 500 mm; and,
2. The Sudanian region south of isohyet 500 consists of (i) the north Sudanian system (between 500 and 1000 mm) and (ii) the south Sudanian system (more than 1000 mm).\(^4\)

Added to this geographic variability, there is significant temporal variability from year to year. This is often accompanied by a persistent low rainfall, translating into a gradual slide of more than 120 km of isohyets to the south between 1971 and 1990.

According to a report on the social and economic situation drafted by the ANSD (National Agency of Statistics and Demography) in 2009, the population of Senegal, estimated at 5,100,000 inhabitants during the 1976 General Population Census, increased to 6,900,000 inhabitants in 1988 and 9,858,482 inhabitants in 2002. Official demographic projections estimated the population at 12,171,264 inhabitants in 2009.

There is a predominance of women in the population, although this is reducing slightly. In 2009, the ratio of women to men showed that there were 97.5 men for every 100 women. In 2002 this had been 96.9.

The country’s population has a high rate of urbanisation at 42%, with total urban inhabitants estimated at more than 5 million in 2009. The capital, Dakar, accounts for 49% of this population. The proportion of the urban population increased from 23% in 1960 to 39.9% in 1988 before stabilising at between 41% and 42%, as recorded in 2002 and 2009.

Arable land in Senegal amounts to only 19% of the surface area or 3.8 million hectares. Only 65% of this land is worked annually, approximately 2.5 million hectares. Furthermore, most of this land is cultivated using rainwater, resulting in agricultural activity that is vulnerable to the vagaries of the climate. Only 2% of the land is cultivated using irrigation.

\(^3\) (PNAT: National Technical Assistance Programme, 1994)
\(^4\) (Sagna, 2006)
The national herd amounts to 3.3 million head of cattle, 5.4 million sheep and 4.6 million goats, showing that ruminants form the basis of livestock farming in Senegal. However, livestock production remains strongly dominated by outdated methods. During the past few years new methods have emerged (in dairy and sheep farming) which attest to the efforts of the authorities to intensify and modernise livestock farming.

In spite of the potential mentioned above, Senegalese agriculture remains dependent on the climate, in particular irregular rainfall, which underlies the recurrent food crises. This situation has also caused a rural exodus with, as corollary, a significant growth in population in the urban areas and the transfer of poverty from rural areas to urban areas.

I.1.3 Political framework and response strategy

In its poverty reduction strategy, Senegal chose the option of making the primary sector the driver for pro-poor economic growth, generating employment and a sustainable improvement in income. This key sector is prone to structural crises which the various policies that have been implemented up to now have not been able to prevent. The situation has given rise to a dual desire to reform and modernise the agricultural sector in order to adapt it to the new global market context and to undertake the internal liberalisation of Senegalese agriculture.

It is in this exact context that the Loi d’orientation agro-sylvo-pastoral (LOASP, The Agricultural-Forestry-Livestock Framework Act) was drawn up in consultation with key actors in the rural sector and civil society. It was passed on 25 May and promulgated on 4 June 2004. It has become the legal framework for the development of agriculture in Senegal for the next 20 years, through a strategy of diversification of agricultural production, increased and sustainable productivity and competition in farming with the development of a non-agricultural economy in the rural areas as a concomitant strategy.

The LOASP will only come into its own once its fifty-two commitments have been effectively implemented, and in particular:

- The drafting of a National Agricultural Development Plan (PNDA); and,
- The drafting of a National Livestock Development Plan (PNDE);

The process of formulating these two policy documents was initiated some years ago and eventually translated into:

- The adoption of a National Agricultural Investment Plan (PNIA) in 2012; and,
- The approval of the PNDE in 2011, subsequently updated in 2013.

Furthermore, on a macroeconomic level, a Stratégie nationale de développement économique et social (SNDES, National Strategy for Economic and Social Development) was established by the new government elected in February 2012. In terms of strategic objectives, the SNDES is based on a projection study entitled “Senegal 2035” which is broken down into a number of five-year plans, and also includes government policy guidelines, the Stratégie de croissance accélérée (SCA, Accelerated
Growth Strategy), international commitments (MDGs and post-MDGs), and multisectoral and sectoral policies.

All these policy instruments highlight the desire of the government to resolve the issue of food security for its inhabitants and the establishment of a Délégation générale à la protection sociale et à la solidarité nationale (DGPSN, National Delegation for Social Security and Solidarity), which should be useful in dealing with the negative effects of climate change.

I.1.4 Sub-regional and African initiatives

At sub-regional level there has been an ongoing advocacy effort to develop strategies to increase the availability of food, including:

- The establishment of a network of companies/boards in charge of managing food security reserves (RESOGEST, CILSS); and,
- The establishment of a regional food security reserve (CILSS, ECOWAS and WAEMU).

In this context, the African Union, in partnership with WFP, has instituted an initiative to establish a Pan-African mutual risk insurance (ARC) in order to be able to provide a rapid response to the recurring food crises that batter the continent.

ARC insurance payouts are designed to be released to countries early – often before other funds are available – reducing the time it takes to assist vulnerable populations impacted by drought. The purpose of an Operations Plan is to delineate the use of an ARC payout in advance so that if a country receives such a payout in a drought situation, it will be prepared to use the funds immediately and effectively, capitalizing on the advantages of early intervention. Operations Plans should take into account existing national systems and deploy an ARC payout to support activities to reach needy households with assistance in a timely and cost-effective manner.

I.2 Selection of General Risk Transfer Parameters

I.2.1 Extent of Coverage and Expected Frequency of Payout:

Collective discussions were held by the government to discuss the requirements and objectives for the setting of risk transfer parameters. There was a consensus that, given the high severity and high frequency of drought, a choice of 5-year return period and $30m maximum coverage would be optimal. The Risk Transfer Parameter technical sub-working group then validated the selected parameters with the results of the customisation of historical response costs, based on simulations conducted using Africa RiskView (ARV).

Based on the below parameters and the current stage of ARV customisation, the expected premium of the insurance policy is expected to be between USD 4-4.8 million. This policy will ensure risk transfer of CFA F. 15 billion (USD 30 million). The premium will be paid in one instalment at the time indicated for all risk pool payments.

Senegal Risk Transfer Parameters:
- Attachment point: 1-in-5 years
- Coverage limit: CFA F. 15 billion

I.2.2 Needed Geographical Areas of ARC Plan Implementation

All administrative regions in the country are likely to be covered with ARC funds. However, in determining how these funds are used, this plan will focus on prioritizing the most affected areas.

I.3 Activities

I.3.1 Overview of Proposed Activities

The Government of Senegal has invested in planning and establishing a disaster management strategy in recent years. As a result, ARC will not seek to replicate current initiatives, but rather integrate within these systems. Thereby, ARC has the potential to efficiently and effectively scale up the existing tools of the Government of Senegal.

A drought in Senegal will lead to deterioration in food and nutritional security of households and animals as a result of the shortage of food and grazing that it will cause. Therefore, based on the existing disaster risk management system, the Government of Senegal has identified the following tree primary channels for the use of ARC funds to reduce the impact on affected households: 1) food distribution and the distribution of food coupons, 2) supplementary feeding for children and mothers, and 3) implementing an Opération secours du bétail (OSB, livestock relief operation). These initiatives, which will be quickly put in place so as to provide relief to affected populations, will be part of the overall response framework.

If a payout is imminent, the Government will adjust the plan following the needs assessment findings and lay out the details in the Final Implementation Plan (FIP). Based on the payout size, the Government will prioritize the most vulnerable areas and the most vulnerable households within those areas. In return, focus will be put on a specific activity or activities that are appropriate for the situation. The description in this submission would expand on the initial submission for the three activities.

This document provides an overview of these alternatives for integrating ARC payouts into existing disaster response mechanisms of the Government of Senegal. It identifies how an ARC payout could be used effectively and outlines the associated Operations Plan for channelling these funds to beneficiaries. In summary, this document describes how the Government of Senegal could spend a potential payout of up to USD 30 million from ARC and ensure that these funds reach beneficiaries within 120 days of an ARC payout.

I.3.2 Overall Objectives of Proposed Activities

✓ General Goal:

To increase the resilience of rural and urban populations affected by food insecurity and vulnerability (including livestock) as a result of drought.
Specific Goals:

- Support inhabitants and the core of livestock affected by crises through emergency relief operations;
- Organise active screening and management for cases of acute malnutrition;
- Reinforce the early warning system on the nutritional situation and food security; and,
- Institute a permanent system to strengthen crisis response capacities for basic/local communities.

I.3.3 Activity 1: Food Assistance to Populations

I.3.3.1 Overall Objective

To guarantee adequate access to food for populations affected by drought for a period of 120 days following the end of the growing season.

Under ARC, approximately 800,000\(^5\) persons belonging to targeted vulnerable households (150,000) would have access to adequate good quality food.

I.3.3.2 Expected Outcomes and Outputs

**Outcome 1:** Improvement in the food intake of targeted households during the entire period of food aid assistance.

**Output 1.1:** Improvement in the food security of affected households by distribution of quality foodstuffs in sufficient quantity to reach the targeted populations when required.

**Outcome 2:** Improved implementation time for assistance to targeted households.

**Output 2.1:** Assistance to affected households timely provided.

**Outcome 3:** Assistance to affected households timely provided.

**Output 3.1:** Activity timely completed.

I.3.3.3 General Drought Response Strategy

**General Description**

The initiative utilizes ARC funds to provide food assistance to targeted populations through the free distribution of foodstuffs or food coupons allowing households to purchase foodstuffs from traders when food is available on the market (based on the market analysis).

Under this initiative, each needy household would receive food rations or their equivalent in food coupons for a period of four months (from April to July). Monthly rations distributed to households would consist of 15 kg of food commodities per person per month.

\(^5\) Food insecurity vulnerable population from 2011/12 drought
This assistance would start within the specified time period of 120 days in order to provide food security to beneficiaries and thus prevent detrimental behaviour and/or negative coping mechanisms.

**Coordination**

The DPC within Ministry of Interior (MINT) would coordinate all three ARC response activities at the central level. For each activity, one institution is defined to lead the implementation, using different sub-structures.

For Activity 1, at the national level, the CSA (Food Security Steering Committee) would coordinate all operations relating to the implementation of the food assistance activity. The CSA has longstanding experience in managing the food security situation during periods of drought and other hardships.

At the regional level, decentralised structures of the MINT, working with local elected officials to ensure that assistance reaches the eventual beneficiaries, would take over from the CSA.

If needed, the Government would use NGOs and/or WFP as a channel to provide assistance in areas where these partners have structures allowing operations to be put into effect.

**Logistics**

The CSA would proceed with the domestic or regional purchase of foodstuffs by February in accordance with an open tender process or a restricted emergency tender with pre-qualifying local suppliers. The purchase of foodstuffs will comply with the procedures laid down by the current Public Procurement Code, in particular its Article 76 (see Appendix 6). Foodstuffs will be stored and distributed in cooperation with all structures and bodies involved. For the purchase of food products, the country’s seaboard and the fact that it has ports open to international traffic (Dakar, Kaolack) will facilitate access to large quantities of foodstuffs from abroad. This will make it possible to ensure that private actors can supply urban areas and that rural areas can be supplied through the assistance programme.

The CSA has storage depots with a capacity of 87,340 metric tons throughout the country. These storage depots can be used if necessary to hold foodstuffs before they are transported to their eventual points of delivery/distribution. The CSA vehicle fleet, with a capacity estimated at 258 metric tons, will also be mobilised for logistical purposes. This logistical capacity will be extended by the private sector, which will also be used to deliver foodstuffs.

**Needs Assessment**

Every year, a vulnerability assessment is conducted in cooperation with all major institutions involved in food security, including WFP, CILSS, EWS, CSA, CES, and CLM.

This needs assessment will also lay the basis for the identification of beneficiaries for activities financed with ARC funds, and will start at the end of the harvest (December-January) and relate to the following:

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6 Possibly subject to change, see section 1.3.6.1
- Monitoring the food situation of groups at risk;
- Monitoring plant biomass;
- Overall analysis of vulnerability to food insecurity and malnutrition;
- Data analysis from various missions;
- Formulating recommendations for initiatives to be undertaken; and,
- Identifying beneficiaries and determining their food needs.

**Targeting**

The targeting process is described in detail in Annex 4.

Geographic targeting will be undertaken following a needs assessment which will start at the end of harvest season (December/January) and define the most affected areas. Next there will be household identification missions using socio-economic surveys with the participation of beneficiary communities. Criteria taking into account the level of vulnerability of households will be applied to select those households to be assisted as a matter of priority during the course of February and March. Vulnerable households with single women at their head or those including handicapped persons or persons suffering from diseases that prevent them from working will be given priority.

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7 See appendix below for a description of the targeting methodology used.
## I.3.3.4 Logical Framework

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<th>Performance indicators</th>
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<th>Responsible for verification</th>
<th>Risks and Assumptions</th>
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<tbody>
<tr>
<td><strong>Outcome 1:</strong> Improvement in the food intake of targeted households during the entire period of food aid initiatives</td>
<td>Improvement in households’ food consumption score (% of communities showing a higher score)</td>
<td>Food consumption survey report</td>
<td>EWS, WFP</td>
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| **Output 1.1:** Improvement in the food security of affected households by distribution of quality foodstuffs in sufficient quantity to reach the targeted populations when required. | - Number of households (planned: 150,000) receiving food aid or coupons  
- Quantity of food (in tons) actually distributed, per type of foodstuff | - Follow-up field visit by the CSA officers  
- Monthly distribution report by CSA  
- Monthly and final reports from DPC to ARC | CSA, DPC |
| **Outcome 2:** Improved implementation time for assistance to targeted households. | First ‘contact’ with targeted beneficiaries within 120 days of the ARC pay-out received | Monthly and final reports from DPC to ARC | DPC |
| **Output 2.1:** Assistance to affected households timely provided | - Actual time taken to roll out response programme from ARC pay-out date against planned  
- Actual time taken to provide food or cash to targeted households against planned time | Monthly and final reports from DPC to ARC | DPC |
| **Outcome 3:** Assistance to affected households timely provided. | Activity completed within 180 days | Final report from DPC to ARC | DPC |
| **Output 3.1:** Activity timely completed | Actual time taken to complete activity against planned | Final report from DPC to ARC | DPC |

- Political and institutional stability.
- Sufficient and timely funding.
- Immediate food availability and delivery.
- Availability and effectiveness of the partners involved.
- Participation by the targeted communities in identifying, planning, setting up and monitoring the initiatives.
- Etc

- All required food commodities are available
- Timely food delivery in necessary quantities
### 1.3.3.5 Action Plan

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I.3.4 Activity 2: Supplementary Feeding for Children and Mothers

I.3.4.1 Overall Objective

The objective of this Activity is to improve the nutritional status of the populations affected by drought by facilitating their access to adequate food within 120 days following the end of the harvest.

Under ARC, a total of 40,000\(^8\) children, pregnant women and breastfeeding mothers would be provided with food supplementation to stabilise or reduce malnutrition.

I.3.4.2 Expected Outcomes and Outputs:

**Outcome 1**: Reduction in severe malnutrition in children younger than 5 years of age and in pregnant and breast-feeding women in the areas hardest hit by food insecurity due to drought.

**Output 1.1**: Supplying nutritional food in good time and in sufficient quantities to children younger than 5 years of age and to malnourished pregnant/breastfeeding women targeted in the areas affected by the food and nutrition crisis.

**Outcome 2**: Improved implementation time for assistance to targeted households.

**Output 2.1**: Assistance to affected households timely provided.

**Outcome 3**: Assistance to affected households timely provided.

**Output 3.1**: Activity timely completed.

I.3.4.3 General Drought Response Strategy

**General Description**

Through the PRN (Programme de renforcement nutritionnel: a feeding programme supported by the state budget and with partners including World Bank, UNICEF, and WFP), since 2009 the CLM has been carrying out nutritional monitoring in its areas of intervention. This nutritional monitoring is carried out systematically every quarter through active malnutrition screening campaigns.

Mass screening is recommended as it is the simplest and quickest method to identify children suffering from acute malnutrition and bilateral pulmonary oedema within the community in order to conduct a preliminary selection of cases.

Through the PRN, the CLM advises its partners to implement a quarterly screening by community intermediary agents (ARC: agents relais communautaires) for all children aged 6 to 59 months within local communities targeted by the PRN.

For this purpose, the CLM has supported capacity-building in community personnel with regard to mid-upper arm circumference measurement techniques and acute malnutrition management strategies at the community level.

\(^8\) This planning figure represent 33.33% of the SMART 2011 results conducted following the drought. See Annex 5.
To guarantee compliance with the relevant standards and protocols, the CLM strongly recommends that PECMA (Prise en charge de la malnutrition aiguë, management of acute malnutrition) initiatives should be implemented under the supervision of the Chief Health Centre Nurses of the CLM’s local partners.

ARC funds will be used to enhance the supplementary feeding from March to June within the PRN framework and will have four aspects:

- Active quarterly screening for acute malnutrition in children aged 6 to 59 months;
- Referral of any severe cases that are identified to healthcare centres;
- Monitoring counter-referrals; and,
- At the community level, managing moderate cases by: (i) distributing food rations for a period of two months, (ii) providing iron and vitamin A supplements, (iii) anti-parasite treatment with mebendazole, (iv) communications initiatives to change behaviours in mothers with malnourished children and (v) early learning activities to stimulate mental development in children.

This Activity will prioritize areas where the warning threshold is reached or exceeded as a result of drought. This will be done in coordination with the Division de l’alimentation et de survie de l’enfant (child nutrition and survival division) of the Ministry of Health and Social Welfare (MSAS).

**Coordination**

The DPC\(^9\) within MINT would coordinate all ARC response activities at the central level. For each activity, one institution is defined to lead the implementation, using different sub-structures.

For Activity 2, at the national level, the Cellule de lutte contre la malnutrition would be the national coordinating institution for the implementation.

At the operational level, CLM would partner with DAN and DES and will be supported by UNICEF (through the provision of anthropometric measuring instruments for screening cases of malnutrition), WFP and other NGOs\(^10\). The community programme mechanism to promote nutrition will be used for screening and will roll out malnutrition management initiatives.

Activity 2 would be backed up by other preventative or promotional initiatives with the aim of reducing the incidence of acute malnutrition. These initiatives involve:

- **Séance Suivi Promotion de la Croissance** (SPC, Growth Promotion Monitoring Sessions): Monthly SPC initiatives, which target children under two years of age, make it possible to prevent malnutrition using proximity monitoring of the growth of children and the care provided to them. This strategy allows real proximity to the household and is the best channel to use in efforts for child nutrition and which make a strong impact on a child’s nutritional status.

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9 Possibly subject to change, see section I.3.6.1
10 All the implementing partners intervening within the PRN framework are already selected nationwide through a process put in place by the World Bank
• **Community-based distribution**: This aspect supports specific nutrition initiatives and includes:
  - the distribution of vitamin A in the context of routine supplementing;
  - the distribution of mebendazole for routine anti-parasite treatment; and,
  - the distribution of long-acting treated mosquito nets to extend the fight against malaria.

• **Communication pour le Changement de Comportement** (CCC: Behaviour Change Communication Initiatives): Monthly CCC initiatives target the mothers of children aged under five or child care workers. Their purpose is to drive the adoption of key family behaviour towards good nutrition. These initiatives include:
  - Educational talks on PCIMEC (*Prise en charge intégrée des maladies de l’enfant*, Integrated Management of Childhood Illnesses, IMCI) topics and nutrition in general run by community members in groups of 12 to 15 people;
  - Personal interviews conducted during home visits by community members for children with particular problems (malnutrition, disease, loss of sight, etc.); and,
  - Social mobilisation to raise the awareness of communities to priority topics relating to health.

• **Radio programmes** broadcast on community radio stations.

**Logistics**

The fortified food will be procured locally. Sufficient quantities of processed fortified food can be obtained from local producers (which in previous emergency interventions have responded efficiently). Emergency procedures will be followed for procurement in accordance with the Public Procurement Code in effect, and particularly its Article 76 (see Appendix 6). Logistics relating to the transport of foodstuffs will be undertaken by the contract holder up to target county level, in accordance with the notification contract clauses of the relevant authority. The Government structures (CLM and Ministry of Health), supported by partners, will work with the relevant administrative authorities to facilitate conditions for receipt and distribution of fortified food.

**Needs Assessment**

The needs assessment that lays the basis for the identification of beneficiaries is the same as the one specified for Activity 1.

**Targeting**

The targeting process is described in detail in Annex 4.

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11 See appendix for a description of the methodology used for targeting.
Geographic targeting will be based on the findings of the rapid nutritional surveys to be conducted jointly alongside the needs assessment by December/January in case of drought and will give priority to areas with high malnutrition rates and determine the required intervention.

The direct beneficiaries will be screened and selected on the basis of admission criteria selected in the national protocol for managing malnutrition issued by the Ministry of Health. The initiative will target children aged from 6 to 59 months, pregnant women and breast-feeding mothers (with children younger than 6 months). The assistance will start in March and end in June.
## I.3.4.4 Logical Framework

<table>
<thead>
<tr>
<th>Performance indicators</th>
<th>Means of verification</th>
<th>Responsible for verification</th>
<th>Risks and Assumptions</th>
</tr>
</thead>
</table>
| **Outcome 1:** Reduction in severe malnutrition in children younger than 5 years of age and in pregnant and breastfeeding women in the areas hardest hit by food insecurity due to drought | Malnutrition rate amongst children (boys/girls) younger than 5 years of age and amongst pregnant and breastfeeding women in the target areas | Nutritional survey report | - Political and institutional stability.  
- Sufficient and timely funding.  
- Immediate food availability and delivery.  
- Availability and effectiveness of the partners involved.  
- Participation by the targeted communities in identifying, planning, setting up and monitoring the initiatives.  
- Etc |
| **Output 1.1:** Supplying nutritional food in good time and in sufficient quantities to children younger than 5 years of age and to malnourished pregnant/breastfeeding women targeted in the areas affected by the food and nutrition crisis. | - Number of beneficiaries (Planned: 40 000) by type of initiative and category of person.  
- Quantity of food delivered, by type of food and type of initiative. | - Weekly ad hoc MSAS/DSRSE monitoring committee (local committees)  
- Progress reports.  
- Statistical reports. | |
| **Outcome 2:** Improved implementation time for assistance to targeted households. | First ‘contact’ with targeted beneficiaries within 120 days of the ARC pay-out received | Monthly and final reports from DPC to ARC | |
| **Output 2.1:** Assistance to affected households timely provided | - Actual time taken to roll out response programme from ARC pay-out date against planned  
- Actual time taken to provide food or cash to targeted households against planned time | Monthly and final reports from DPC to ARC | |
| **Outcome 3:** Assistance to affected households timely provided. | Activity completed within 180 days | Final report from DPC to ARC | - All required food commodities are available  
- Timely food delivery in necessary quantities |
| **Output 3.1:** Activity timely completed | Actual time taken to complete activity against planned | Final report from DPC to ARC | |
### I.3.4.5 Action Plan

<table>
<thead>
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<th>Dec</th>
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<td>ARC Payout</td>
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<td>Fortified food procurement</td>
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<td>Identification and targeting</td>
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<td>X</td>
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<td>Distribution of fortified food</td>
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<td>Monitoring</td>
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</tr>
</tbody>
</table>
I.3.5 Activity 3: Livestock Relief Operation (OSB)

I.3.5.1 Overall Objective

The objective of Activity 3 is to save the core as well as draught animals during a food deficit by facilitating access to a survival ration of a certain number of kilograms per TLU per day starting from April.

Under ARC, approximately 18,000 MT of cattle feed would be sold at subsidised prices involving 200,000 TLU to protect livestock assets (the means of subsistence of households).

I.3.5.2 Expected Outcomes and Outputs

Outcome 1: Protecting household livestock asset via animal feed subsidized sale.

Output 1.1: Supplying cattle feed to the essential nucleus of the national herd in the affected counties.

Outcome 2: Improved implementation time for assistance to targeted households.

Output 2.1: Assistance to affected households timely provided.

Outcome 3: Assistance to affected households timely provided.

Output 3.1: Activity timely completed.

I.3.5.3 General Drought Response Strategy

General Description

ARC funds would be used to scale up livestock relief activities which is an activity already established in Senegal.

In normal times, this activity consists of distributing processed cattle feed to the livestock core (calves, lambs, lactating and gestating females) in the affected counties in May, June and July. The numbers involved will vary from year to year and according to the resources available. Each county should provide a survival ration for the livestock concerned at a subsidised price (to ensure revolving\(^1\) credit).

In times of drought the initiative should be extended. In 2011, 211,000 TLU were provided with survival rations during the drought. ARC funds would allow 200,000 TLU to receive a daily ration of 1 kg per TLU per day for a period of 1-3 months (from March onwards).

Coordination

The DPC\(^2\) within the MINT would coordinate all ARC response activities at the central level. For each activity, one institution is defined to lead the implementation, using different sub-structures.

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12 The fund collected from subsidised sale will be used to buy food for the following season.
13 Possibly subject to change, see section I.3.6.1
For Activity 3, at the national level, the Ministry of Livestock would be responsible for the implementation.

**Logistics**

Sufficient quantities of processed cattle feed will be obtained from local feed suppliers. Emergency procedures will be followed for procurement in accordance with the Public Procurement Code in effect, and particularly its Article 76 (see Appendix 6), with regard to local feed suppliers (whose production capacity ranges between 125 000 and 130 000 MT of feed). Logistics relating to the transport of foodstuffs will be undertaken by the contract holder up to target county level, in accordance with the notification contract clauses of the relevant authority. The Ministry will work with the relevant administrative authorities to facilitate conditions for receiving and distributing cattle feed.

**Needs Assessment**

The needs assessment that lays the basis for the identification of beneficiaries is the same as that specified for Activity 1.

**Targeting**

The targeting process is described in detail in Annex 4.

Vulnerable pastoral households will be targeted using the following methodology:

1. At the top tier, pasturage areas at risk will be identified, using the following criteria:
   - The food security situation in the area: here an identification survey of areas at risk of food insecurity will be undertaken jointly by WFP and the CNSA (national food security council) during the course of December/January;
   - The production of pasturage at the end of overwintering: at this level, the reference used will be an evaluation of the biomass of rangeland conducted by the Ecology Monitoring Centre (CSE). Based on this evaluation, areas where pasturage production is poor (fodder biomass lower than 1500 kg of dry material per hectare) will be considered to be pasturage areas at risk; and,
   - With the early warning system, the map of areas at risk of food insecurity and the biomass map will be cross-checked so that the interface will identify rural communities as well as pasturage at risk.

2. At the second tier, vulnerable households will be identified in each village or camp that is selected. Here the selection criterion considered would be the livestock core so as to target young calves, lambs and lactating and gestating females - in other words, animals that cannot travel great distances (migration).

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14 See appendix for a description of the targeting methodology used.
This work will be completed by February/March by country steering committees (comprising government decentralized structures, community leaders, and cooperating partners), which will be established at the county and local level prior to the targeting.
### 1.3.5.4 Logical Framework

<table>
<thead>
<tr>
<th>Outcome 1: Protecting household livestock asset via animal feed subsidized sale</th>
<th>Performance indicators</th>
<th>Means of verification</th>
<th>Risks and Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality rate reduction within essential nucleus</td>
<td>Activity final monitoring and evaluation report, Ministry of Livestock</td>
<td>• Political and institutional stability.</td>
<td></td>
</tr>
<tr>
<td>Output 1.1: Supplying cattle feed to the essential nucleus of the national herd in the affected counties</td>
<td>- Quantity of feed distributed (planned: 18 000 MT) - Number of heads of livestock (planned: 200 000 TLU)</td>
<td>Instalment receipts, Beneficiaries Register, reports compiled by distribution committees</td>
<td>• Sufficient and timely funding.</td>
</tr>
<tr>
<td>Outcome 2: Improved implementation time for assistance to targeted households.</td>
<td>First ‘contact’ with targeted beneficiaries within 120 days of the ARC pay-out received</td>
<td>Monthly and final reports from DPC to ARC</td>
<td>• Immediate food availability and delivery.</td>
</tr>
<tr>
<td>Output 2.1: Assistance to affected households timely provided</td>
<td>- Actual time taken to roll out response programme from ARC pay-out date against planned - Actual time taken to provide food or cash to targeted house-holds against planned time</td>
<td>Monthly and final reports from DPC to ARC</td>
<td>• Availability and effectiveness of the partners involved.</td>
</tr>
<tr>
<td>Outcome 3: Assistance to affected households timely provided.</td>
<td>Activity completed within 180 days</td>
<td>Final report from DPC to ARC</td>
<td>• Participation by the targeted communities in identifying, planning, setting up and monitoring the initiatives.</td>
</tr>
<tr>
<td>Output 3.1: Activity timely completed</td>
<td>Actual time taken to complete activity against planned</td>
<td>Final report from DPC to ARC</td>
<td>• Etc</td>
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</table>

- Output 1.1: Quantity of feed distributed (planned: 18 000 MT) - Number of heads of livestock (planned: 200 000 TLU)

- Outcome 2: First ‘contact’ with targeted beneficiaries within 120 days of the ARC pay-out received

- Outcome 3: Activity completed within 180 days

- Output 3.1: Actual time taken to complete activity against planned
## I.3.5.5 Action Plan

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I.3.6 National Coordination and Implementation of Activities

I.3.6.1 National Coordination

Instituting coordination

With the Direction de la Protection Civile (DPC), Senegal has a body especially established to intervene in the case of disasters though its current field of application that does not include food security. It is located within the MINT and coordinates risk and disaster management in Senegal.

The DPC was designated as the focal point for supervising the pre-participation/capacity building phase in ARC. With the establishment of the Délégation générale à la protection sociale et à la solidarité nationale (DGPSN, General Delegation for Social Security and Solidarity), it remains to be defined which institution would lead operations under the ARC at the national level.

In view of this situation, a process of reflection is currently underway to define an institutional framework for the programme. This reflection is based on the definition of an overall architecture which would take into account issues of food and nutritional security as well as the prevention of and response to drought. Until a lasting solution has been put in place, the DPC will see to the coordination of initiatives in liaison with the other bodies involved (CSA, DIREL, CLM, etc.).

The coordinating institution will work in partnership with the following leaders:

- The Commissariat à la sécurité alimentaire (CSA: Food Security Steering Committee), for food aid to drought affected populations (Activity 1);

- The Ministry of Health and Social Welfare in liaison with the Cellule de lutte contre la malnutrition (CLM: malnutrition unit), to manage malnutrition in crisis areas (Activity 2);

- The Ministry of Livestock, through the Direction de l'élevage et des productions animales (DEPA: Livestock and Animal Production Division) to carry out the livestock relief operation (Activity 3).
<table>
<thead>
<tr>
<th>Actor</th>
<th>Roles and responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>DGPSSN (National Delegation for Social Security and Solidarity)</td>
<td>The DGPSSN is responsible for welfare assistance to vulnerable groups and as such is in charge of coordinating all the activities of the contingency plan. Progress reports will be compiled by all the role players in charge.</td>
</tr>
<tr>
<td>DPC (Civil Protection Directorate)</td>
<td>Co-responsible for the overall coordination and supervision of the Intervention Plan in relation to the departments most involved in selected initiatives.</td>
</tr>
<tr>
<td>CSA (Food Security Steering Committee)</td>
<td>Participates in the assessment of the vulnerability profile and the targeting of beneficiary populations. Ensures that food aid or cash transfer initiatives benefitting vulnerable populations are undertaken.</td>
</tr>
<tr>
<td>International Division of Ministry of Finance</td>
<td>In charge of the payment mechanism for the subscription and insurance premium in order to participate in the common risk management fund.</td>
</tr>
<tr>
<td>DCEF (Division for Economic and Financial Cooperation)</td>
<td>In charge of the ARC disbursement reception mechanism and of funds transfers to operational disbursement structures.</td>
</tr>
<tr>
<td>D. Assurance (Insurance Division)</td>
<td>Participates in defining the risk transfer parameters. Ensures research and development into helping agricultural micro-insurance.</td>
</tr>
<tr>
<td>CSE (Ecology Monitoring Centre)</td>
<td>These bodies are tasked with ARV verification by evaluating the drought index and monitoring the reimbursement criteria of insurance payouts.</td>
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<tr>
<td>ANACIM (National Civil Aviation and Meteorology Agency)</td>
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<tr>
<td>D. Agriculture (Agriculture Division)</td>
<td>Tasked with defining the pastoral vulnerability profile and implementing the livestock relief operation.</td>
</tr>
<tr>
<td>DEPA (Livestock and Animal Production Division)</td>
<td>In charge of mapping malnutrition, and targeting and implementing interventions to take care of children.</td>
</tr>
<tr>
<td>CLM (Unit to Combat Malnutrition)</td>
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</tr>
<tr>
<td>DAGAT (Division for General Matters and Land Administration)</td>
<td>Each administrative authority supervises and facilitates the initiatives that form part of the plan and that occur in its constituency.</td>
</tr>
<tr>
<td>WFP</td>
<td>WFP intends to support the Government through logistical and technical assistance. This would be done by helping to coordinate the ARC to target risk areas linked to drought and to identify vulnerable populations. To this effect, WFP will sign a cooperation protocol with the project coordination body which specifies the procedures for financial assistance to implement the monitoring of the agricultural season.</td>
</tr>
<tr>
<td>JICA</td>
<td>The commitment process for JICA to support the Government in taking over the insurance premium is under way.</td>
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</tbody>
</table>
I.3.6.2 Flow of Funds

As far as the ARC fund payout management and disbursement mechanisms are concerned, the following standard arrangements can be followed:

**Payment of the Insurance Premium**

The payment of the insurance premium through the national budget would require the funds to be registered under Heading 6. There would then be two possibilities:

1. If the premium is entered under 27.1.1 (capital transfer to other public administrations): the money is paid by means of a Treasury cheque by a disbursement decision in favour of the ARC account, from the deposit account of the Direction de la protection civile (DPC: Civil Protection Directorate); or,

2. If the premium is entered under 27.7.1 (capital transfer to international organisations), the funds are paid directly into ARC’s commercial account after the DPC makes such a commitment. The ARC commercial account number must in this case appear on the commitment authority.

**Receipt of ARC disbursements**

The funds are received by cheque or by Treasury transfer. An appropriation order is generated by the Ministry of Finance. This is a legal act that authorises the deposit and the latter is entered into the Système intégré de gestion des finances publiques (SIGFIP: Integrated Public Finance Management System).

**Use of resources**

The procedure for using resources by structures identified for approved activities will follow the process below:

The Ministry of Finance (via National Treasury) will allocate these funds to the dedicated accounts opened by the structures that will be involved in the implementation of the various activities. Following this allocation, a decision by the Ministry to transfer funds to the accounts in question will be made within 48 hours. Each structure will be responsible for managing and accounting for the funds made available to it.

A monthly report on the disbursement status will be sent to the coordinating structure which should then report to the ARC.

I.3.6.3 Monitoring and Evaluation of Activities

In the case of a payout, monitoring of the implementation of all three ARC activities would be coordinated by the DPC. DPC would submit monthly operational and financial reports to the ARC Agency according to the Operational Planning guidelines. At the end of the operation, DPC would submit a final comprehensive operational and financial report to the ARC Agency for all three activities. This final financial report would consist in a thorough comparison of the planned budget as per the FIP against the actual expenditure during the intervention. A financial audit would be done by the Auditor General’s office following terms of reference provided by the ARC Secretariat.

The internal monitoring and evaluation procedures of initiatives are as follows:
- **Food assistance:** Distribution operations will be regularly monitored by the CSA, which consists of decentralised Government structures that will carry out weekly field trips to make sure that the targeted inhabitants actually benefit from what has been put into place. A monthly report will be compiled and distributed to the coordinating body.

- **Managing malnutrition:** With regard to the malnutrition management component, monitoring and assessment will be carried out according to criteria defined in the national management protocol. The CLM and the Ministry of Health will carry out field visits to ensure that the protocol is implemented. Monthly progress and statistical reports will be generated and will be forwarded to the coordinating body.

- **Livestock Relief Operation:** For the livestock relief operation, the Ministry will ensure the identification of the feed bags in order to facilitate checking. At the national level, officials of the Ministry of Livestock will carry out monitoring throughout the country by means of supervisory and inspection trips. At the regional and local level, monitoring will be carried out by the local administrative authorities and OPE by means of local committees established for this purpose.

- A monthly report will be compiled based on distribution reports which will include comprehensive lists of beneficiaries per locality and will be forwarded to the coordinating body.

Based on all of the feedback received, the coordinating body will see to it that a monthly operational and financial report is submitted to the ARC Agency. A final operational and financial report will also be submitted at the end of the interventions to the ARC body according to the reporting model.
II/ BUDGET

According to the planning scenario, if the payout triggers are met and ARC transfers a payout of CFA F. 15 billion, this budget will be used to finance the three activities identified in the response plan. The distribution table would be as follows:

Table: Budget distribution

<table>
<thead>
<tr>
<th>Description</th>
<th>COST/CFA</th>
<th>Number of beneficiaries</th>
<th>Cost/beneficiary/CFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food assistance in foodstuffs</td>
<td>10 000 000 000</td>
<td>800 000</td>
<td>12 500</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>1 450 000 000</td>
<td>40 000</td>
<td>36 250</td>
</tr>
<tr>
<td>Livestock relief operation</td>
<td>3 400 000 000</td>
<td>200000 (UBT)</td>
<td>17000</td>
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<tr>
<td>Coordination, supervision</td>
<td>50 000 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring/evaluation and auditing</td>
<td>65 000 000</td>
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<tr>
<td>External auditing</td>
<td>35 000 000</td>
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<tr>
<td>TOTAL</td>
<td>15 000 000 000</td>
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</table>

**NB:** The detailed budget is attached below in the Excel file
V/ APPENDICES

V.1 Appendix 1: DETAILED BUDGET OF INITIATIVES

(See Excel file)
V.2 Appendix 2: EWS SURVEY METHODOLOGY

1. CONTEXT AND MOTIVATION

The assessment of food security and nutrition in the population is the main task of the SE/CNSA (Executive Secretariat of the National Food Security Council). The project to strengthen the capacities of the early warning system (EWS) established the foundations for a monitoring and assessment system based on collecting primary and secondary data.

The household surveys carried out during 2011 made it possible to map the state of food and nutrition in the population and also helped identify the areas most vulnerable to food insecurity.

After 2012, when food was distributed by the food distribution programme to the most vulnerable populations as a response to food insecurity, the early warning system had to face a new challenge in the form of ensuring the sustainable monitoring of the food situation in the population.

Within the framework of ensuring the sustainability of the EWS, and in order to better ensure that Senegal takes ownership of the initiatives after the end of the support project aimed at strengthening the EWS, it was proposed that the mechanism be streamlined and that the methodology for monitoring food security and nutrition in the population be revised. From this point of view, the new methodology put forward will be based on identifying and monitoring sentinel sites.

This new phase will focus on consolidating the experience gained and ensuring the sustainability of the system, which will be extended to urban centres, and ensuring that sufficient resources at a central level in the national budget are gradually allocated so that the SE/CNSA can pursue its mission of monitoring and assessing food security and nutrition in the population.

The operation of the EWS is dependent on carrying out monitoring and assessment activities as its sustainability depends in part on the reliability and the accuracy of published information. With this in mind, the selection of methodologies for monitoring areas at risk and for assessing the food security in populations is the first step in the process of scientifically validating the monitoring and assessment system.

The guiding principle of monitoring and assessing activities should be the strict application of procedures, especially those concerning the use of probability methods comprising randomly selected samples. There should be a continuous effort to use tried and tested methodologies in order to ensure the credibility and reliability of the system.

2. OUTLINE OF METHODOLOGY

2.1. Identification criteria of sentinel sites

In the context of an EWS, a “sentinel site” represents a geographic unit that makes it possible to observe a phenomenon and to make an objective assessment of the food security and nutritional status of households. In 2010 the rural environment was divided up into areas based on means of subsistence which led to the identification of 13 areas where households carry out similar activities
in relatively homogeneous agricultural and ecological zones.

Populations in a zone generally have similar means of subsistence. The zones share three features that are likely to influence the food situation and the vulnerability of households: natural geography (climate, vegetation, type of soil), production systems and access to markets.

Results obtained at a sentinel site level can therefore be considered valid for all the households in the whole area of the particular means of subsistence where the sentinel site is situated.

2.2. Indicators monitored at EWS sentinel sites

Primary data will be collected from the households at the sentinel site by means of regular surveys. These data supplement the monthly collection of secondary data and those obtained after the harvest that establish which areas are threatened by food insecurity (current meteorological data and rain forecasts, agricultural and pastoral production, prices and operation of markets, etc.).

Both rural and urban sites are monitored as sentinel sites in Senegal. The dynamics of food security in these two environments are different and assessments will be carried out using both common and specific indicators.

The indicators reported on at the EWS sentinel sites are listed in the table below.
<table>
<thead>
<tr>
<th>Determining factor for security</th>
<th>Indicator/Measurement</th>
</tr>
</thead>
</table>
| Socio-demographic data         | - Age, gender, tribe and educational level of the head of the household, main activities  
                                 | - Size of household  |
| Accessibility                  | - Price of cereals (especially rice and millet), flour, oil and sugar from which market  
                                 | - Household food stocks  
                                 | - Price levels of foodstuffs  
                                 | - Sources of income of households |
| Food consumption               | - Food consumption score |
| Hardships                      | - All hardships that affect crop yields (see questionnaire) |
| Strategy to adapt to food insecurity | - Index of adaptation to strategies |
| Nutritional status             | - Weight/height, presence of oedema and mid upper arm circumference |
2.3 Sampling

Food security and nutrition are monitored within “means of subsistence” areas (of which there are 13 in the country). These subsistence areas thereby each represent a stratum. Sentinel sites are chosen from among the villages that make up each means of subsistence area. All the villages in Senegal make up the base from which the sample of villages to be surveyed will be chosen. There is a random, dual-level selection; the villages are therefore the primary units from which the 8 households to be surveyed are selected.

For the sample to be representative, 10% of the villages in Senegal will be surveyed, that is to say 1,453 in total; the sample villages will be randomly chosen in proportion to the size of the means of subsistence area (number of villages in the area).

2.3.1 Rural sampling

In the rural environment all 13 means of subsistence areas will be monitored. Each area of subsistence will constitute a stratum. The sampling has a two-fold stratification:

- Firstly, the villages will be selected with a probability proportional to the size of each stratum (means of subsistence areas);

- Secondly, the households in the sample will be chosen by random selection from the list of households in each village.

A total of 1,453 villages spread throughout the 13 areas will be surveyed; in each village 8 households will be surveyed.

2.3.2 Urban sampling

For urban areas, three towns that are representative of the specificities of the other towns in the country will be monitored: Dakar (Guédiawaye county), Kaolack and Ziguinchor.

Urban sampling also has a two-fold stratification:

- Firstly, the town districts will be chosen with a probability proportional to size;

- Secondly, households in the sample will be randomly chosen from a list of all the households in each urban district.

3. Frequency and duration of data collection

Data is gathered twice a year, taking into account the key periods of the year:

- 1st data collection: beginning of December (following the harvest, this is a reference period);

- 2nd data collection: beginning of April (before the hunger gap in order to be able to intervene during the hunger gap if warning signs with respect to food availability/nutrition appear following the survey);
- 3rd data collection: 1st week of August (during the hunger gap).

4. Data Collection System

The data collection system will, at every level, be made up of State employees in order to ensure the future sustainability of the EWS. It takes the following form:

4.1.1 Collection officers

One team per sentinel site is made up of: two survey officers and one team leader.

That is to say, three people per team and per sentinel site. The team leader also assumes the role of inspector at the county level and will of necessity be the focal point of the EWS at the county level or an active member of the County Committee.

The collection system will therefore be made up of 15 teams of 3 people each which gives a total of 45 data collection officers.

4.1.2 Regional supervisors

One regional supervisor will be appointed in each region and will have as its main task to supervise all the survey teams in his/her region. The regional supervisor should be the focal point of the EWS at regional level or an active member of the Regional Committee.

4.1.3 National supervisors

The eight EWS national supervisors (one supervisor per region) are drawn from employees of the SE/CNSA, from members of the EWS National Technical Committee and from representatives of the FAO, WFP and UNICEF who are responsible for the re-launch of the EWS. The main task of these supervisors will be to train or retrain the data collection officers and the regional supervisors and to supervise data collection activities.

4.2 Processing and analysis of the data

The processing of the data (input, correction) will occur at a central level (SE/CNSA) and three days are allocated for the input and processing of the data once collection has been completed. Thereafter, the data will be analysed by a joint team (SE/CNSA, FAO, WFP, UNICEF) within two days.

4.2.1 Publication of the results

A survey report will be published following each data collection exercise, at the latest 30 days after data collection was completed, according to an outline set out by the EWS National Technical Committee. This report will therefore be available by the 10th of the following month, at the latest.

Before the survey report is published, a flash report of two pages about will be published at the latest by the 30th of the month of the survey. This flash report will be earmarked for Government decision makers and development partners in order to alert the latter that urgent measures need
to be considered should a significant deterioration show up in the food security and nutritional survey indicators in households in the regional councils that are monitored.

Monthly EWS bulletins will also be put together and published. These bulletins will be drafted based on secondary data that the structures of the National Technical Committee will supply to the SE/CNSA at the end of each month and on the information contained in the permanent monitoring summary information sheet mentioned above. These bulletins will be published at the latest 10 days after the end of the month in question. Before this publication, the National Technical Committee will meet at least once to discuss the contents of the bulletin and to carry out the necessary cross-cutting analyses in order to ensure that the information has been properly analysed and to avoid the bulletins being a collection of information with no comparison of data across different sectors.

The monthly bulletin for the month of the survey will replace the survey report of that month’s data collection exercise. Therefore, in addition to the information coming from the sectoral structures, this bulletin will contain the food situation and the nutritional status of the populations based on the survey results. This will make it possible to do a triangulation of the information in each area.

4.3 Coordination of the EWS at the SE/CNSA

In order to ensure more efficient EWS activities, an EWS unit will be set up within the SE/CNSA. This unit will have a manager (Head of the EWS unit) and will also have three other officers. The Head of the unit will have exclusive responsibility for coordinating the organisation and implementation of the field surveys, the drafting of the EWS survey reports, flash reports and monthly bulletins. He/she will be supported by members of the EWS National Technical Committee and by representatives of the FAO, WFP and UNICEF. This unit will also be in charge of training sessions and of any workshops that the EWS needs to carry out.
V.3 Appendix 3: EVALUATION OF RISKS AND NEEDS

1. Drought index parameters

**Agricultural season May to October 2014**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Ground nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year under consideration</td>
<td>2001</td>
</tr>
<tr>
<td>Ten-day periods of the season</td>
<td>From ten-day period 14 to ten-day period 28</td>
</tr>
<tr>
<td>Classification of rainfall (data sets)</td>
<td>RFE2</td>
</tr>
<tr>
<td>WRSI aggregation for planting periods</td>
<td>Maximum (during the planting period)</td>
</tr>
<tr>
<td>Rainfall threshold for seedlings</td>
<td>20 mm</td>
</tr>
<tr>
<td>WRSI water surplus/threshold of drop in level</td>
<td>100 mm</td>
</tr>
<tr>
<td>WRSI rainfall surplus/value of drop in level (in points)</td>
<td>3</td>
</tr>
<tr>
<td>Calculation template</td>
<td>Map of agricultural areas</td>
</tr>
<tr>
<td>Duration of growth phase</td>
<td>Variable according to geographic area (see “cycle length” map)</td>
</tr>
<tr>
<td>Water retention capacity</td>
<td>Map of agricultural and ecological areas</td>
</tr>
<tr>
<td>First ten days of the planting period</td>
<td>14</td>
</tr>
<tr>
<td>Last ten days of the planting period</td>
<td>21</td>
</tr>
<tr>
<td>Pre-season Kc (crop coefficients)</td>
<td>0.4</td>
</tr>
<tr>
<td>Percentage of actual rainfall</td>
<td>65%</td>
</tr>
<tr>
<td>Reference value** (normal conditions indicator)</td>
<td>Median value over five (05) years</td>
</tr>
<tr>
<td>Definition of a moderate drought**</td>
<td>90% of the reference value</td>
</tr>
<tr>
<td>Definition of an average drought**</td>
<td>80% of the reference value</td>
</tr>
<tr>
<td>Definition of a severe drought**</td>
<td>70% of the reference value</td>
</tr>
</tbody>
</table>

2. Parameters of vulnerability

**Polygons: All the regions of Senegal before the most recent administrative demarcations of 2008**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value/indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference value defining a state of drought</td>
<td>Median value (drawn up over 5 years)</td>
</tr>
<tr>
<td>Scaling factor</td>
<td>1.5</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>46.7%</td>
</tr>
<tr>
<td>Threshold for loss of means of subsistence</td>
<td>9</td>
</tr>
<tr>
<td>MODERATE drought trigger</td>
<td>90% of the reference value</td>
</tr>
<tr>
<td>AVERAGE drought trigger</td>
<td>80% of the reference value</td>
</tr>
<tr>
<td>SEVERE drought trigger</td>
<td>70% of the reference value</td>
</tr>
</tbody>
</table>
3. Key indicators or vulnerability threshold

Severe drought threshold trigger: % of the WRSI reference value (ARV drought index) = 70%.

This situation was illustrated by the 2011/2012 agricultural season which showed a significant drop in the production of all cultivated species. This drop was 36% for cereals and 59% for ground nuts compared to the previous year, and respectively 20% and 31% compared to the average for the previous five years, thus putting certain localities in the country in a precarious food situation.

4. Drought risk evaluation

4.1 Monitoring rainfall (volume and distribution)

The Agence nationale de l’aviation civile et de la météorologie (ANACIM: National Civil Aviation and Meteorological Agency) monitors weather conditions throughout the country. To do this, various atmospheric parameters are collected, in particular rainfall from different meteorological stations and posts located throughout the country. The country’s major meteorological stations (see Table 1 below) have been collecting data from 1931 to the present.

Number of meteorological stations and posts in Senegal monitoring atmospheric parameters

<table>
<thead>
<tr>
<th>Number of meteorological stations</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of stations with a complete record of measurements from 1971-2000</td>
<td>79</td>
</tr>
<tr>
<td>Number of synoptic stations</td>
<td>12</td>
</tr>
<tr>
<td>Number of weather stations</td>
<td>11</td>
</tr>
<tr>
<td>Number of farming weather stations</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: Agence nationale de l’aviation civile et de la météorologie (national civil aviation and meteorological agency)

ANACIM also coordinates the activities of the Groupe de travail pluridisciplinaire (GTP: Multi-Disciplinary Working Group) established as part of the AGRHYMET Programme to serve as an early warning on food security by providing comprehensive information on the agricultural season. The group consists of actors working in the field of agricultural production (Hydrology, Agriculture, Plant Protection, Livestock, Ecology Monitoring Centre, CAS (Food Security Steering Committee), the Société Nationale d’aménagement et d’exploitation des terres du delta (SAED: National Company for the Development and Exploitation of the Lands of the Delta), etc.) and at the end of each ten-day period publishes a Ten-Day Agricultural and Meteorological Bulletin for the use of government authorities, funders and technical experts.

The following map shows rainfall in a drought year.
4.2 Drought index

On account of the ARV customisation process, early detection of a crisis situation will be possible using the WRSI drought index and an ARC payout will be triggered when certain defined parameters are reached.

5. Mechanisms for evaluating needs

5.1 Institutional Capacity for Regular Assessment and Monitoring of Risks

Senegal has a relatively strong capacity and experience for the regular assessment and monitoring of risks related to drought, mechanisms are in place to ensure regular assessment, monitoring of drought levels and trends, and early warning, mainly: (i) the Information System on Desertification/System of Information and Monitoring of Senegal Environment (SID/SISEI) which aims to facilitate the monitoring of desertification and environmental degradation, to assess the impact of projects against desertification, to provide and measure the impact of disasters related to drought and to allow access to data and information; (ii) the Centre for Ecological Monitoring (CSE) which ensures regular monitoring of Senegal’s environment, particularly plant and animal resources, using monitoring tools like satellite imagery combined with field work, while ensuring that results are recorded in an environment database feeding a Geographic Information System; and (iii) the Committee of the Permanent Inter-State Committee for the Fight against Drought in the Sahel (CILSS), with a mandate to invest in in research for food security and the fight against the effects of
drought and desertification for a new ecological balance, which coordinates through its National Coordination body (CONA CILSS) crop and food situation assessments and monitoring missions in relationship with FAO, WFP and FEWS-NET (USAID), providing a framework for understanding the impacts on individual households or groups of current or potential shocks including drought.

5.2 Monitoring the food security levels of inhabitants

This type of monitoring has made it possible to identify Zones à risque (ZAR: Food Insecurity Risk Areas) and areas at risk of a shortage of fodder and/or malnutrition.

This is the task of the Conseil national à la sécurité alimentaire (CNSA: National Food Security Council) through a country-wide early warning system. Surveys of households carried out during 2011 have made it possible to draw maps of the food security and nutritional status of the population and have made it easier to identify the areas that are the most vulnerable to food insecurity.

The survey methodology used for this EWS is attached below.

5.3 Monitoring plant biomass

The quantity and quality of production of the natural rangelands of Senegal vary depending on the ecological and geographic area. The plant production map which was drawn with the help of the Centre de suivi écologique (CSE: Ecology Monitoring Centre) is the final product of the biomass campaign, the result of a combination of data acquisition and processing at various levels:

- Satellite, which makes it possible to extract the Indice de végétation par la différence normalisée (NDVI: Normalised Difference Vegetation Index) from red and near infrared imagery channels;

- Land, which makes it possible to measure herbaceous and ligneous production directly through Sites de contrôle au sol (SCS: Ground Monitoring Sites) established throughout the area under consideration;

The field-gathered data is then processed to determine the correlation between the NDVI and overall production.
5.4 CFSVA surveys

The surveys on the Analyse globale de la vulnérabilité, de la sécurité alimentaire et de la nutrition (AGVSAN: in English: CFSVA, the Comprehensive Food Security and Vulnerability Analysis) supplement the surveys on food security relative to the national EWS. They thus make the data more accurate and comprehensive (diversity of research areas).

These studies allow one to:

- measure the structural vulnerability of households; and,
- determine the profile of and map the population.

5.5 SMART surveys

These surveys, conducted with the backing of development partners (UNICEF, WFP, etc.) make it possible for the CLM unit to produce:

- a map showing generalised acute malnutrition; and,
- a map showing severe acute malnutrition.

5.6 Estimate of needs for initiatives undertaken during the period April to October 2012

On the basis of conclusions on the food and nutritional situation of inhabitants and on livestock feed, the Government has held inter-ministerial meetings on food security, nutrition and livestock. At the end of these inter-ministerial meetings, a Government request was sent to all technical and financial partners to request emergency aid in food for overwintering, livestock feed and managing malnutrition in affected populations.

During the period April to October 2012, in view of the prevailing situation of food and nutritional insecurity, measures were considered to assist inhabitants. These measures consisted of the
distribution of foodstuffs and cash, livestock feed and managing malnutrition in children aged 6 to 59 months, pregnant and breastfeeding women.

5.6.1 Estimate of food needs

The initial needs of the programme estimated on the basis of the studies referred to above amounts to CFA F. 40,946,865,532 to be managed by the State, in collaboration with its partners. The situation in terms of needs is shown in the following table:
## Evaluation of needs

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Number of beneficiaries</th>
<th>Emergency needs</th>
<th>Partner commitments</th>
<th>Government commitments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quantity (Tons)</td>
<td>Unit cost (CFA F)</td>
<td>Total (CFA F)</td>
</tr>
<tr>
<td><strong>FOOD COMPONENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aid in foodstuffs</td>
<td>661 000</td>
<td>39 819</td>
<td>589 513</td>
<td>20 183 822 964</td>
</tr>
<tr>
<td>Procedures for cash and coupons</td>
<td>145 000</td>
<td>22 691</td>
<td>3 290 200 062</td>
<td>3 290 200 062</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NUTRITIONAL COMPONENT</strong></td>
<td>806 000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of severe acute malnutrition</td>
<td>20 000</td>
<td>50 000</td>
<td>1 000 000000</td>
<td>1 000 000000</td>
</tr>
<tr>
<td>Management of moderate acute malnutrition in children (6-59 months)</td>
<td>100 000</td>
<td>1 461</td>
<td>790 525</td>
<td>1 144 218 675</td>
</tr>
<tr>
<td>Screening, PEC (management), monitoring of moderate acute malnutrition</td>
<td>100 000</td>
<td>3 000</td>
<td>300 000 000</td>
<td>300 000 000</td>
</tr>
<tr>
<td>Management of pregnant and breastfeeding malnourished mothers</td>
<td>19105</td>
<td>901</td>
<td>644 983</td>
<td>571 843 977</td>
</tr>
<tr>
<td>Prevention - malnutrition (6-23)</td>
<td>56 854</td>
<td>471</td>
<td>1 914 079</td>
<td>891 466 881</td>
</tr>
<tr>
<td>Prevention - malnutrition (pregnant &amp; breastfeeding mothers)</td>
<td>54 367</td>
<td>2 887</td>
<td>681 867</td>
<td>1 942 312 973</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>5 849 842 506</td>
</tr>
<tr>
<td><strong>LIVESTOCK COMPONENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle feed</td>
<td></td>
<td>58 115</td>
<td>200 000</td>
<td>11 623 000 000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>11 623 000 000</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td></td>
<td></td>
<td></td>
<td>40 946 865 532</td>
</tr>
</tbody>
</table>
The distribution of foodstuffs and food coupons should be done differently in different areas and based on the level of food insecurity of the relevant risk areas (ZAR) of the inhabitants. 739 251 persons have been identified in rural areas while 67 000 persons have been identified in urban areas, i.e. a total number of 806 000 persons concerned by the distribution of foodstuffs and food coupons. This management operation by the State and WFP will require the mobilisation of 39 819 tons of foodstuffs to provide for the needs of 661 000 beneficiaries and the distributions of food coupons amounting to CFA F. 3 290 842 506 corresponding to a total of 145 000 beneficiaries.

5.6.2 Estimate of nutritional needs

As far as the nutritional component is concerned, 20 000 children aged 6 and 59 months affected by acute severe malnutrition (ASM), 100 000 other children of 6 to 59 months affected by moderate acute malnutrition (MAM) and 19 105 pregnant and breastfeeding women who have also been identified as being malnourished, require management. In the field of preventing malnutrition, 56 854 children aged 6 and 23 months and 54 364 pregnant and breastfeeding women regardless of their nutritional status will be managed. Moreover, 250 000 children aged under 2 years will be monitored on a monthly basis to promote growth at the community level. Total financing needed for the nutritional component will amount to CFA F. 5 849 842 506 provided by WFP and UNICEF.

5.6.3 Estimate of pasturage needs

In terms of pasturage, following the meeting of the Inter-ministerial Council on the Agricultural Season (Livestock Component), the programme financing needs were reviewed up to CFA F. 3 686 550 000 allowing 21 066 tons of livestock feed to be bought. This programme, financed by the State and backed by its technical and financial partners, will consist in making livestock feed available free of charge to the Ministry of Livestock. In order to ensure that the prevention mechanism continues and to manage food crises, livestock feed has been sold to livestock farmers with a 50% subsidy of their value.
V.4 Appendix 4: Targeting beneficiaries for initiatives

The methodology selected for targeting beneficiaries consists of determining the areas affected by drought using the ARV software. This is a form of geographic targeting to list counties (Départements) affected by low rainfall. A field mission and household survey will follow to determine the level of food insecurity in the areas of rainfall deficit already noted by ARV. Therefore, the targeting methodology selected is divided into four phases which are:

- Geographic targeting;
- The nation-wide mission;
- The county-wide mission;
- Household surveys.

1. Geographic targeting

Geographic targeting is done using the ARV software, which makes it possible to determine at an early stage the areas where there has been low rainfall. Hence one can determine which counties are vulnerable on the basis of a drought index. A nation-wide mission would then visit only these counties.

2. National drought evaluation mission

A mission undertaken by the Government with its technical and financial partners will (probably) undertake a field visit towards the end of September of the year in question. This mission will be undertaken based on key aspects as defined according to the vulnerable areas picked up by the ARV and will consist of representatives from the following structures: CSA, SE/CNSA (Executive Secretariat of the National Food Security Council), DEPA, DAPSA (Directorate for Analysis, Forecasting and Agricultural Statistics), ANSD, CSE, ANACIM, etc.

The main stages and activities are:

- Preparatory meetings hosted by the Ministry (the Ministry responsible for the ARC project);
- Field mission teams, based on the key priorities as they have been determined;
- Meetings to be held between the members of the mission involved and the administrative and customary authorities and senior technical personnel. These meetings would determine the goals of the mission and collect all information on the progress of the agricultural season;
- The mission would travel to those counties identified as being vulnerable by the ARV. During these visits, working meetings would take place with the administrative authorities of the county involved, including senior technical personnel, to determine the goals of the mission.
Data collection tools will be made available to technical departments to collect information on the agricultural season in each region. A preliminary list of areas where agricultural production is expected to be poor will be drawn up;

- A consolidated mission report would be compiled by all teams and would contain the results, main conclusions and recommendations of the mission in order to better follow the evolution of the situation in areas affected in terms of agriculture and/or grazing;
- Preliminary maps would be drawn up of areas at risk of low agricultural production.

3. County drought evaluation mission

Following the nation-wide mission, each county (Departments of agriculture, Livestock, Land Administration and Welfare) will do the following:

- Field trips (before the harvest) in each county to make a detailed local assessment of the evolution of the agricultural season and the state of grazing lands, in particular in pockets where agricultural and/or pastoral production is expected to be poor. A field mission will be undertaken by officials of the counties involved before the end of October;
- Fill in on the relevant media platform all data collected by county officials at the end of the field mission;
- Draft a report which sets out the evolution of the agricultural season in each county considered to be vulnerable and which will possibly be able to determine the areas (communities, groups of villages) which show an exceptional drop in agricultural or pastoral production levels compared to normal. The reports should reach the ARC national coordinating body by 31 October of the year in question at the latest.

4. Household surveys

Monitoring during the agricultural season at the county level will identify areas where production has dropped in comparison with the previous season or the average of the past five years, in particular because of low rainfall.

In order to refine the analysis of the extent of production losses sustained by producers and to establish the level of food insecurity arising from this, a joint survey by the Government and its partners will be carried out toward the end of November of the year in question in areas identified by county missions.

The specific goals of the mission are:

- To determine the cereal requirements for each rural community and group of villages based on endogenous production;
To determine the current rate of food insecurity in each rural community and group of villages;

To assess the main sources of revenue that exist in the various areas;

To analyse the adaptation strategies of households that have been affected;

To propose different types of responses according to the specific requirements for food security in each area.

The results that the survey is expected to produce are as follows:

- The proportion of production losses on agricultural production as a whole is calculated;
- The amount of cereals required using endogenous production for the various areas and groups of villages will be known;
- The rate at which cereal needs are met can be compared to those of the previous two agricultural seasons;
- The total population and proportion of households suffering from food insecurity in surveyed areas will be determined;
- Whole rural communities and groups of villages will be classified according to food security indicators;
- The main sources of household income in the areas will be determined;
- The adaptation strategies of households will be identified;
- The types of responses appropriate for each area will be recommended.

5. Methodology

a/ Sampling, collection tools and equipment

For the purposes of sampling in all vulnerable counties, household surveys will be completed in 5 villages of each rural community of the county. In each village, 10 households would be randomly selected for a survey.

A household questionnaire would be drawn up and developed on a PDA or Smartphone; this will save time in processing survey data.

b/ Executing the survey

The various stages of this assessment are as follows:

- Drafting and obtaining approval for the terms of reference at the central level for the use of the various data collection tools (household questionnaires and focus group guides);
✓ Holding a working session for members of the mission to bring in line and learn to use the survey tools before leaving for the field;

✓ Data collection using PDA/Smartphones and paper questionnaires to be used by county officials who have not been familiarised with this tool. Data collection shall be carried out by persons from the central Government level (Dakar) and Government officials at the county level selected to carry out the household survey.

6. Limits of the survey

The relatively small size of the sample necessitated by the very short period for data collection which is required by a quick survey of this nature could affect the accuracy of results. However, the results which are obtained will trigger an initial alarm of potential food insecurity in areas affected by unusually low rainfall.
V.5 Appendix 5: The 2011 drought and the food and nutrition security situation

1 The 2011 drought

These crises have had a negative impact on the results of the agricultural season, in particular that of 2011-2012, which had the following consequences:

- A drop in cereal production of 36% and in ground nut production of 59% from 2010 to 2011;
- Affected 806 000 inhabitants including 739 251 in the rural areas; and,
- A moderation of the growth rate of meat production to 9.3% and milk production to 1.7% in comparison with respective average increases of 35% and 66.3% from 2005 to 2010.

2 Availability of grazing land

The consequences of irregular rainfall on grazing land in 2011 was an uneven spatial distribution of grazing lands and an alarming biomass deficit observed in 23 counties, located for the most part in the northern and central parts of the country.

The production of grasses which are the main source of nutrition for livestock has seldom been as low as they have been during the past few years (see Table 1 below).

Table 1: Fodder deficit between 2010 and 2011

<table>
<thead>
<tr>
<th>Locality</th>
<th>Overwintering PPPN1 for 2010 in kgMs/ha</th>
<th>Overwintering PPPN for 2011 in kgMs/ha</th>
<th>Fodder deficit between 2011/10 (kgMs/Ha)</th>
<th>Ratios of fodder deficits between 2011 and 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podor</td>
<td>2 000</td>
<td>800</td>
<td>-1 200</td>
<td>-60%</td>
</tr>
<tr>
<td>Matam</td>
<td>2 300</td>
<td>1 100</td>
<td>-1 200</td>
<td>-52%</td>
</tr>
<tr>
<td>Ranérou</td>
<td>3 600</td>
<td>3 000</td>
<td>-600</td>
<td>-17%</td>
</tr>
<tr>
<td>Linguère</td>
<td>3 100</td>
<td>2 400</td>
<td>-700</td>
<td>-23%</td>
</tr>
<tr>
<td>Ranch de Dolly</td>
<td>3 000</td>
<td>968</td>
<td>-2 032</td>
<td>-68%</td>
</tr>
<tr>
<td>Louga</td>
<td>1 500</td>
<td>1 000</td>
<td>-500</td>
<td>-33%</td>
</tr>
<tr>
<td>Kaffrine</td>
<td>3 400</td>
<td>3 100</td>
<td>-300</td>
<td>-9%</td>
</tr>
<tr>
<td>Kaolack</td>
<td>4 000</td>
<td>3 100</td>
<td>-900</td>
<td>-23%</td>
</tr>
<tr>
<td>Fatick</td>
<td>4 000</td>
<td>3 100</td>
<td>-900</td>
<td>-23%</td>
</tr>
<tr>
<td>Tambacounda</td>
<td>4 000</td>
<td>4 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Kolda</td>
<td>7 000</td>
<td>7 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Diourbel</td>
<td>3 500</td>
<td>2 500</td>
<td>-1 000</td>
<td>-29%</td>
</tr>
</tbody>
</table>

(NB: The deficit is qualitative for the regions of Tambacounda and Kolda.)
Furthermore, bush fires ravaged 23,447 ha at the end of March 2012 in this part of the country which was already experiencing a fodder deficit.

Added to this situation, there were unseasonal rains in several parts of the country, in particular in the county (Département) of Podor, where numerous cases of animal deaths were reported.

Overall the situation in the north and centre of the country remains a subject of concern and requires substantial intervention in order to preserve the essential core of the livestock consisting of lactating females and their young, estimated at approximately 25% of the total herd.

3 Availability of water

Hydrological data recorded at the Bakel and Kidira stations on the Senegal River and its tributary, the Falémé, show that peak water flow was of relatively short duration. Consequently, flooded land for flood recession crops was average to fair.

Natural ponds, which fill up during winter and thus help disperse herds, dried up early. This led to an earlier inflow of livestock, in particular transhumant herds, to grazing land, causing numerous conflicts around the use of water.

4 Food prices

Average monthly retail/consumer prices for agricultural products continue to rise in all trading areas. A monthly comparison shows relative price stability for cereals except for the average monthly prices of local maize (+29%), local husked rice (+17%) and imported flavoured rice (+57%). On the other hand, average monthly prices for March 2012 were much higher than those for March 2011. Annual increases were, respectively: 32% (souna millet), 40% (local sorghum), 59% (local maize), 40% (imported maize), 36% (ordinary imported rice), 25% (cowpeas), and 55% (hulled ground nuts). Only the price of local husked rice has dropped by a moderate 44%. In comparison with the averages for the past five years, five-year increase rates ranged between 15-25% for cereals while those for pulses were in the 24-35% range. The poor availability of local products (cereals and pulses) and an almost complete lack of flavoured imported rice stocks have produced an inflationary situation to the detriment of most households.

5 Food production/availability (at household level)

The food insecurity status of households is characterised by a combination of two factors: (i) very low food availability from local production and (ii) very low purchasing power. Thus, households suffering from high food insecurity typically had food for less than two months on the basis of their production during the 2011-2012 agricultural season, high dependence on the market and a drop in income. Throughout all areas at risk (ZARs), an analysis of food insecurity, assessed through the food consumption score, showed a prevalence of food insecurity of 51% in all areas, of which 22.3% reflected severe food insecurity. This prevalence, analysed in ZARs, relates to an estimated 739, 251 persons throughout the
country (see table in Annex 2). However, there are high disparities between ZARs with moderate food insecurity and the other areas. Households living in very high and high food insecurity ZARs have a similar level of food insecurity estimated at 59% while for moderate risk areas, food insecurity affects one household in three, or 33%.

The proportion of households suffering from food insecurity is higher in the Casamance ZARs that in those of the rest of the country. Indeed, nearly all the households visited in the Ziguinchor region ZARs are suffering from food insecurity with nearly three-quarters (71.4%) at a severe level. Food insecurity for the regions of Kolda and Sédhiou are, respectively, 87.5% and 84.4%. Apart from Casamance, certain ZARs in regions such as Kédougou, Fatick (Tattaguine regional council), Kaolack and Saint Louis have at least 50% food insecurity.

The areas at risk that were identified in February 2012 are shown in the map in Figure 1 below:

Figure 1: Senegal: Food insecurity level in areas at risk – February 2012

An analysis of the evolution of the situation based on the current adaptation strategies index makes it possible to project a deterioration of the food security situation for most households in coming months.

Negative adaptation mechanisms related to managing food are greater in households suffering from food insecurity. For example, common coping mechanisms include a reduction of the number of daily meals, a reduction in meal size, the consumption of less popular foodstuffs because of their lower cost and more purchases than normal of foodstuffs on credit. Households suffering from food insecurity are also increasingly selling their livestock since the end of the harvest.
6 Estimating the number of inhabitants affected

With the reinforcement and extension of government interventions and the support of partners in preventing and managing malnutrition, the nutritional state of children improved slightly in certain regions according to the SMART 2011 results. However, it is still critical in the Matam regions (GAM 14, 1% and SAM 2.0%) and worrying in the Diourbel region (10.3%). Moreover, the regions of Kolda, Louga, Saint Louis and Thiès, which have a GAM of more than 7% after the harvest, should be monitored and included in interventions because the pockets of vulnerability in these areas could worsen this year in view of the fact that the intervening food gap will start earlier and be longer than usual. Similarly, regions such as Kédougou and Kolda, where chronic malnutrition seems to be endemic, should be included in all nutrition programmes in view of the irreversible consequences of chronic malnutrition beyond the age of 2 years.

On the basis of the SMART 2011 results, cases of SAM are estimated at 20 000 and cases of MAM at nearly 100 000.

In terms of livestock, the situation remains worrisome in the north and centre of the country and requires significant intervention in order to preserve the core of the national herd. This group, which consists of lactating females, their young and draught animals and is estimated at approximately 25% of the total herd, needs protection for a period of three months (May, June and July).

The livestock numbers can be broken down as follows:

- cattle: 408,386 head;
- sheep: 909,667 head;
- goats: 914,509 head;
- horses: 115,781 head.