

# R4 Rural Resilience Initiative

## CONSOLIDATED NATIONAL ASSESSMENT: SENEGAL

2012



WFP/Fabio Bedini



**World Food  
Programme**



**OXFAM**  
America

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# 1. BACKGROUND

This document is the main output of the national-level analysis carried out to support the design of the Rural Resilience Initiative (R4)<sup>1</sup> for Senegal and the selection of pilot areas as well as Government and non-Government partners. It addresses the following questions:

- Which national policies could support or challenge the implementation of R4?
  - Which institutions could provide value-added for R4 at the national level? What are the options for engagement?
  - What are the main climate-related shocks, their frequency and trends, and which food insecure areas are more exposed to these shocks?
  - What lessons have been learned from other projects that could guide the implementation of R4 in Senegal? Are there programmes with which R4 could collaborate?
- What is the credit and savings infrastructure in Senegal? Are there microfinance institutions (MFIs)?  
Which non-governmental organizations (NGOs) and international agencies are supporting microfinance and agriculture development?
  - Are there commercially viable insurers and intermediaries to market and package insurance products?
  - What legislation governs insurance, particularly index insurance, and microfinance?

Separate documents contributing to this report include a climate and food security risk analysis and reports on institutional mapping, complementary programmes and locations, the insurance market – focusing on agriculture-based products and potential for index-based insurance – and financial markets, with a focus on microfinance products and the location of MFIs.



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1. An innovative public-private partnership of WFP and Oxfam America, supported by the United States Agency for International Development and Swiss Re, that aims to protect the rural poor from the impacts of drought and climate variability by providing access to risk-management tools to develop resilience. In Senegal it will enable poor farmers to enhance their food and income security by improving natural resource management, accessing microcredit, obtaining insurance and increasing savings.

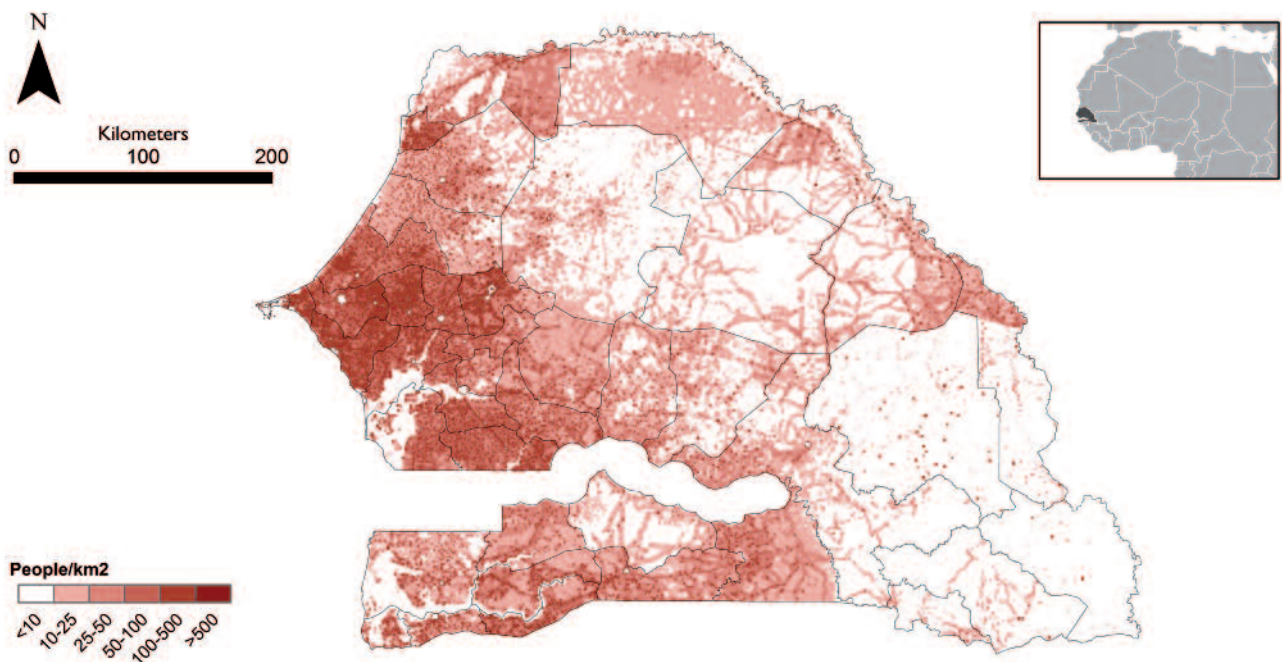
## 2. ECONOMIC AND SOCIAL CONTEXT

Senegal's population of nearly 13 million (The World Bank, 2011) is unevenly distributed, with the majority living in western areas where most major towns are located. The eastern parts of the country, particularly Kédougou, Saraya and Salémata, are less densely populated (see Figure 1).

Senegal's "economy is dominated by a few strategic sectors, including groundnuts, fisheries and services. The role of the agricultural sector, and especially of groundnuts, has declined over time, as Senegal's position bordering the Sahel has led to frequent droughts. High rural poverty and limited

access to rural infrastructure and basic services have fuelled migration to urban areas, and the country's informal sector accounts for about 60 percent of its gross domestic product (GDP)."<sup>2</sup> The population is growing at 2.6 percent per annum, the 26th highest rate in the world (United Nations Department of Economic and Social Affairs, 2010). High growth in western areas is driven primarily by migration from rural areas to towns. The most rapid population growth occurs in the capital: the percentage of the population living in Dakar has increased from 14 percent in 1960 to 25 percent in 2012.

**Figure 1.** Population Density in Senegal, 2008<sup>3</sup>



Source: WFP (2012)

2. <http://www.worldbank.org/en/country/senegal/overview>

3. Source: LandScan, 2008; Famine Early-Warning Systems Network, 2012.



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Demographic pressure is a major concern. Population growth outpaces growth in agricultural production, increasing the challenges of addressing poverty and food insecurity, and it contributes to land degradation along with agricultural expansion and urbanization. The worst degradation, in western Senegal, is linked to three trends: i) agricultural expansion has accelerated as a result of increased demand for land in the groundnut basin, particularly in Louga and Kaolack; ii) over-grazing in the Saint-Louis region reflects an increase in livestock numbers and reduced availability of grazing land; and iii) rapid urbanization is linked with high population growth (Food and Agriculture Organization of the United Nations [FAO], 2010).

“Senegal is emerging from a five-year period marked by a succession of domestic and external shocks, many of which are exogenous. In the decade since 1995, Senegal enjoyed robust per capita GDP growth until 2006, when Senegal’s economy was buffeted by a series of domestic and external shocks. Unfavorable rains prompted a sharp decline in agriculture output during 2006-07. The international food and oil price shocks over 2007-08 slowed the economy down, increased inflation, and resulted in a significant deterioration of Senegal’s external and fiscal positions. [...]The onset of the global financial crisis in 2008, its deepening in 2009 and continued electricity shortages further contributed to the general slowdown of the country’s economic activity. Real annual GDP growth averaged 3.4% from 2006 to 2010, down from an average of 4.4% from 2000 to 2005.”<sup>4</sup>

In addition, the Casamance is affected since the 1980’s by recurrent armed conflict that has caused the displacement of large sections of the population and which continues to hamper development activities in this region, potentially the richest of the country.

In 2011 Senegal ranked 155th of 187 countries in the Human Development Index. The incidence of poverty declined from 68

percent in 1995 to 57 percent in 2001/02 (Enquête Sénégalaise Auprès des Ménages II, 2002) and to 50.8 percent in 2005 (Global Agriculture and Food Security Programme (GAFSP), 2012), but the proportion of people living below the poverty line remains constant. The poverty rate in rural areas was 61.9 percent in 2009, compared with 35.1 percent in towns. Agriculture accounts for 17 percent of gross domestic product (GDP) and employs 60 percent of the population. Average growth in the agricultural sector – 2.5 percent between 1960 and 2003 – is generally lower than GDP growth (GAFSP, 2012).

A review of literature appears to show that poverty is linked to the level of education – families with a head of household educated to secondary level or higher are less likely to be poor, and to household size – large households tend to be poorer than small ones. There are no studies showing any significant difference in poverty or food insecurity between households headed by men or women in rural areas. Social capital however, appears to play an essential role as a safety net.

“Social networks function as important mechanisms of support in the face of poverty in Senegal. The composition of households in Senegal is complex and largely reflects extended family ties. Households tend to be large, and the majority (57 percent) include more than one family unit. Expenses are generally shared between several members of the household, with two to five individual breadwinners per household at a national level. [...] Social networks can help in preventing people from sliding further into poverty, and enable [them to] exit from poverty.”<sup>5</sup>

Senegal’s population is in vast majority Muslim, with Christians mostly concentrated in the Casamance region. The Wolof represents the largest ethnic group, with over 40 percent of the population<sup>6</sup>, followed by the Pular and Serere groups.

4. <http://www.worldbank.org/en/country/senegal/overview>

5. Chronic Poverty Research Centre. 2011. Chronic poverty in Senegal. Available at: <http://ssrn.com/abstract=1775802>

6. Unofficial figures.

# 3. POLICIES, STRATEGIES AND REGULATORY FRAMEWORKS

## 3.1 Food Security and Agricultural Development

Food security in Senegal has generally been associated with agricultural development, initially as a result of the policy of ensuring national food self-sufficiency and subsequently of the Government's seeking to exploit its comparative advantage in producing high-value crops for export.

An attempt in 2008 to develop a national food security strategy resulted in a draft document<sup>7</sup> that placed agriculture at the centre of government policy. The dual aim was to ensure that food was available at the national level through increased domestic production, and to improve the incomes of a rural population largely dependent for food on agriculture and livestock. The document was never officially endorsed by the Government.

The *Loi d'Orientation Agro-Sylvo-Pastorale* (LOASP) adopted in 2004 to cover 20 years is still the most comprehensive framework for agricultural development. It was drafted in consultation with, among others, agricultural producers' organizations, and places smallholder farmers at the forefront of agricultural development. Its aim is: "... reducing rural poverty, and addressing medium-term food security through national food self-sufficiency".<sup>8</sup>

The Government's resolve to achieve food self-sufficiency to reduce dependence on imports was strengthened in 2008 when riots occurred in Dakar because of increases in food prices. As a result, the Government launched *La Grande Offensive Agricole pour la Nourriture et l'Abondance*. This was intended to cover the whole country, but it actually exploited the favourable infrastructure in the Senegal valley to increase rice production through the release of new high-yield varieties by the *Institut Sénégalais pour la Recherche Agricole* (ISRA) supported by the Africa Rice Center, and intensive use of subsidized inputs. It is not clear whether *La Grande Offensive Agricole pour la Nourriture et l'Abondance* remains a priority of the new Government.

The *Stratégie de Croissance Accélérée* (SCA) aims to operationalize the first growth-creation pillar of the Poverty Reduction Strategy Paper – the *Document de Politique*

*Economique et Sociale* (2011–2015). The SCA rests on two mutually reinforcing pillars: i) the establishment of a world-class business environment; and ii) the promotion of value chains at the national or international levels; this is based on several clusters (*grappes*), in which Senegal has a comparative advantage.<sup>9</sup> The horticultural products sub-cluster appears to be the most promising in terms of potential for immediate growth, value-added and comparative advantage; this includes the export sector, which has few constraints and limited need for state support. In contrast, the cereals and agro-industrial products sub-cluster has low potential for growth and limited interest for the private sector unless the state invests substantially in infrastructure for industrial processing.

The *Plan National d'Investment Agricole du Sénégal* (2011–2015) (PNIA) reflects the Africa Common Agricultural Policy and the Comprehensive Africa Agriculture Development Programme. The PNIA, which largely omits non-state actors, focuses on investment in infrastructure, particularly irrigation, and high input/high output agriculture on the Green Revolution model – mechanization, improved seeds and intensive use of fertilizers and pesticides. This strategy may help to achieve a rapid increase in production, but it raises concerns as to sustainability<sup>10</sup> in terms of the cost to the state and the environmental cost for communities.

The SCA and PNIA are currently the reference documents for agricultural development in Senegal.

In 2012 Senegal secured US\$40 million from GAFSP, which addresses food insecurity by promoting "livestock and crop production in vulnerable zones of Louga, Matam, and Kaffrine regions, including investments focused on provision of water management systems, rural roads, and animal vaccination centers."<sup>11</sup>

Social protection is anchored in the 2005–2015 *Stratégie Nationale de la Protection Sociale* with a view to promoting equity in social protection and extending the coverage of basic social services to the most vulnerable families; insurance and, in particular, health-related instruments are expected to be included in the strategy. WFP's voucher project is recognized by the Government as an essential contribution to the strategy.<sup>12</sup>

7. République du Sénégal. 2008. *Stratégie Nationale de Sécurité Alimentaire du Sénégal*. Dakar.

8. <http://www.inter-reseaux.org/ressources-thematiques/politiques-agricoles/article/la-loasp-au-senegal>

9. Government of Senegal. 2007. *Stratégie De Croissance Accélérée Pour la Grappe Agriculture et Agro-Industrie*. Dakar.

10. Ibid, p. 16.

11. <http://www.gafspfund.org/gafsp/content/senegal>

12. The project is part of PRRO 200138.



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### 3.2 Environment and Climate Change

Senegal ratified the United Nations Framework Convention on Climate Change in May 1994 and the Kyoto protocol in July 2001. In 2006 it produced its National Adaptation Programme of Action,<sup>13</sup> which defines its priorities for climate change adaptation. The Government recognises the need for measures such as reforestation, restoration of soil fertility, improved water conservation methods and the use of alternative crops – but investments are centred on: i) improved irrigation; and ii) the halting of erosion in coastal regions, which affects towns and densely populated rural areas<sup>14</sup> and will inevitably cause economic damage to the fishing and tourism industries and to irrigated rice production.

### 3.3 Micro-finance and agriculture insurance

The Government's recognition of microfinance as a major poverty-reduction instrument in its *Document de Stratégie pour la Croissance et la Réduction de la Pauvreté* (DSRP) (2006–2010) led to the development of the microfinance

sector policy, the *Lettre de Politique Sectorielle de la Microfinance 2008–2013* and its action plan. The document defines a shared vision for future development of the sector, sets out procedures and allows for harmonized interventions by different actors. It aims to "promote access to sustainable financial services by a majority of poor households and low-income micro-entrepreneurs across the whole country by 2015, through viable MFIs integrated into the national financial system."

The microfinance sector in Senegal is governed by the regional *PARMEC*<sup>15</sup> law 95-03 adopted by the Council of Ministers of the West African Monetary Union (WAMU) in 1993. Since then the microfinance sector has grown rapidly: 1.5 million people had access to microfinance by June 2011, a national rate of 12 percent. But the figure varies across regions: 25 percent of the population of Dakar have access to financial services compared with 6 percent in Tambacounda. The figures do not include informal or unregulated savings and credit systems such as the Savings for Change (SFC) programme supported by Oxfam America; such systems may provide the only opportunity to access financial services in rural areas.

13. *Plan d'Action National pour l'Adaptation aux Changements Climatiques*.

14. "... over 75 per cent of the Senegalese population live less than 60 km from the coast." Government of Senegal, adaptation to coastal erosion in vulnerable areas programme.

15. Takes the name from the *Projet d'Appui à la Réglementation des Mutuelles d'Epargne et de Crédit*

The rapid development of microfinance in the past two decades has led to many institutional failures. As a result the Government reviewed the legal framework for MFIs in WAMU to control risks and to consolidate the sector, and a new act was adopted by the WAMU Council of Ministers in April 2007. Senegal adopted the act in November 2008, the second WAMU state to do so.

Additional acts that regulate microfinance in Senegal include:

- law no. 2008-26 on Banking Regulations in Senegal;
- regulation no. 09/98/CM/UEMOA<sup>16</sup> relating to Financial Transactions outside the WAMU states and allowing MFIs to make money transfers;
- regulation no. 15/2002/CM/UEMOA on Payment Systems in WAMU states allowing MFIs to issue bank cards and make online payments;
- law no. 2004-09 on the Fight against Money Laundering; and
- law no. 2009-16 on the Fight against Terrorist financing.

Unlike the microfinance sector, the domestic insurance market remains under-developed: the 19 insurance companies in Senegal account for less than 1 percent of GDP and reach only 1.8 percent of the population,<sup>17</sup> even though they have doubled their turnover from CFAF41 billion to CFAF81 billion since 2001.<sup>18</sup> The products most in demand are health-related: a 2009 study<sup>19</sup> identified 164 mutual healthcare providers. A project to develop a national platform for health insurance is being implemented by the *Centre International de Développement et de Recherche* in partnership with private insurance companies and with funding from the *Agence Française de Développement*.

A 2008 World Bank study<sup>20</sup> concluded that area-yield index insurance, whereby indemnity payments to growers are made according to shortfalls against an average area yield, has potential for: i) major crops; ii) smaller departments – the department is the lowest unit for which yield data are available; and iii) products that cover risks such as drought. But developing such products would involve challenges such as a high basic risk, concerns about the accuracy of data – farmers have little trust in official statistics, incompatibility with intercropping, varietal and planting/harvesting differences, and delays in settling claims because official statistics are normally available six to eight months after a harvest. The study saw promise in weather index based crop insurance in that prototype products had been developed for groundnuts in Kaffrine and Nioro.

The insurance industry is governed by the 1995 regional *Code d'Assurances of the Conférence Interafricaine des Marchés d'Assurance* (CIMA), which works with signatory countries to develop the insurance industry and to regulate insurance companies; it also approves the introduction of new insurance products or policies. Hence any new crop or livestock insurance policy introduced into Senegal will need CIMA authorization; this includes traditional indemnity-based products and index-based crop insurance. The 2008 World Bank study emphasized that the CIMA code needed amendment to include index-based products.

The 2008 World Bank study also identified mistrust of insurance companies by clients as a major obstacle to expansion. This is partly justified by the companies' lack of transparency as to the guarantees, exclusions and benefits for clients of their products.

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16. *Union Economique et Monétaire Ouest Africaine*

17. Oxford Business Group. 2009. *The Report: Senegal 2009 Emerging Markets Series*, p. 68. London.

18. See: <http://www.senre.sn/en/marche.php>

19. *Développement International Desjardins*. 2011. *Etat des lieux de la microassurance au Sénégal*. Annexe B2. Available at: [http://www.fanaf.org/IMG/pdf/rapport\\_definitif\\_desjardins.pdf](http://www.fanaf.org/IMG/pdf/rapport_definitif_desjardins.pdf)

20. World Bank. 2009. *Index-based Crop Insurance in Senegal: Promoting Access to Agricultural Insurance for Small Farmers, Sustainable Development, Africa Region Finance and Private Sector Development*. Washington DC.



## 4. INSTITUTIONS

### 4.1 Coordinating bodies

The policy framework of the *Document de Politique Economique et Sociale* (2011–2015) is determined by bodies chaired by the President and the Prime Minister and accountable to the national parliament, but the operational framework is organized into technical committees chaired by sector ministries and regional committees chaired by regional governors. The *Agence Régionale de Développement*, which provides the secretariat, includes all categories of actor in the region and meets once a quarter to follow up on implementation of the strategy. Each regional committee is expected to report annually on progress and make recommendations for accelerating the implementation of priority actions.

The *Conseil National pour la Sécurité Alimentaire* (CNSA) was created in 1998; its secretariat was established in 2000 under the *Ministère du Développement Rural et de l'Agriculture*. The institutions did not actually operate until 2004, when the secretariat was attached to the Office of the Prime Minister. The secretariat has recently been the

reference institution for food security, but it may be transformed following the recent change of government.

Institutional and regulatory provision has been made to implement the United Nations Framework Convention for Climate Change and policies and plans of action have been established to protect the environment. The *Comité National pour le Changement Climatique*, set up in 1997 but only formalized in March 2003 by the *Ministère de l'Environnement et de la Protection de la Nature*, brings together organizations involved with climate change such as local administrations, government technical services, the private sector, NGOs and research institutions. The committee acts as a scientific and technical advisory body.

A cross-sectoral institutional framework established in March 2008 and coordinated by the *Ministère de l'Intérieur* provides a platform for consultation and harmonization of interventions for disaster prevention and risk management. The national plan for industrial accidents and flooding, which is linked to the *Organization des Secours* (ORSEC) plan, was implemented during the floods in 2008.



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## 4.2 Government regulatory institutions

Food security is not a separate sectoral strategy, but is embedded in the agriculture development agenda. The *Ministère du développement rural et de l'agriculture* is largely responsible for drafting and enforcing sectoral policies; various institutions have technical functions. The CNSA is also under the authority of the ministry.

The *Direction de l'Environnement et des Etablissements Classés* is the focal point for climate change and the Global Environment Fund. The *Agence Nationale de l'Aviation Civile et de la Météorologie* (ANACIM) is the focal point for the Intergovernmental Panel on Climate Change.

All MFIs are either under the authority of the *Ministère de l'Économie et des Finances* or have to sign a five-year agreement with it. The *Direction de la Réglementation et de la Supervision du Ministère de l'économie des finances* (DRS/SFD) regulates MFIs. The new *Ministère de la Femme, de l'Enfance et de l'Entreprenariat Féminin* coordinates government policy, promotes microfinance and monitors MFI operations.

The two insurance supervisory authorities are the *Commission Régionale de Contrôle des Assurances* based in Gabon, and the *Direction des Assurances in the Ministère de l'Économie et des Finances*, which has since 2007 been developing a business plan for a national crop and livestock insurance programme.

A steering committee on social protection is co-chaired by the *Ministère de la Femme, de l'Enfance et de l'Entreprenariat Féminin* and the *Ministère de la Fonction Publique, du Travail, de l'Emploi et des Organisations Professionnelles*.

## 4.3 Government technical bodies and parastatals

The *Direction des Eaux et Forêts in the Ministère de l'Environnement et de la Protection de la Nature* could be a focal point for R4 in relation to the food-for-assets (FFA) component. The ministry validates the environmental impact assessments of projects, policies, programmes and audits, assesses the validity of environmental impact studies and monitors the implementation of environmental management plans.

The *Commissariat à la Sécurité Alimentaire* monitors grain markets in conjunction with other departments and proposes actions to address challenges.

Created in 1974, ISRA leads the development of agricultural technologies and is the main source of pre-base seeds for major crops such as groundnuts and rice and secondary crops such as *fonio* (*Digitaria exilis*, "hungry rice") or *vouandzou* (bambara nut).<sup>21</sup> The *Centre d'Etudes Régional pour l'Amélioration de l'Adaptation à la Sécheresse* (CERAAS) is attached to ISRA.

The *Agence Nationale de Conseil Agricole et Rural* is a parastatal agency that advises producers on meeting their needs through contractual arrangements.

The *Institut National de Pédologie* works on improving soil fertility. It also distributes limited amounts of phosphate fertilizers, and can provide technical training on soil management such as composting.

The *Centre de Suivi Ecologique* (CSE) delivers services for environment assessment and sustainable management of natural resources. It specializes in the collection, management and dissemination of space satellite information on natural resources.<sup>22</sup> It is attached to the *Ministère de l'Environnement et de la Protection de la Nature*, and is the national implementing agency for the Adaptation Fund.<sup>23</sup>

The *Government set up the Compagnie Nationale d'Assurance Agricole au Sénégal* (CNAAS) in 2008 to mitigate the impact of irregular and poorly forecast rainfall.<sup>24</sup> The state has a 52 percent stake in the company; the remaining 48 percent is owned by insurance companies, farmers' associations and individuals. Its mission is to provide cover for disasters and agricultural risks.<sup>25</sup> A number of agriculture insurance products, including index-based schemes, are subsidized by the state at 50 percent of their cost. The Government has asked CNAAS, which is mandated to address the insurance needs of the poorest rural communities, to focus on subsistence crops such as millet and sorghum.

The *Société Sénégalaise de Réassurance* in Dakar, created in 1988 as a public-private partnership, is the hub of insurance and reinsurance. Its primary purpose was to promote the retention of re-insurance benefits in Senegal, given that 95 percent of reinsurance premiums were going to international reinsurers. The company also promotes market discipline and strict application of insurance regulations and provides training and assistance for Senegalese insurance companies.<sup>26</sup>

21. [http://www.agriculture.gouv.sn/index.php?option=com\\_content&view=article&id=63&Itemid=118](http://www.agriculture.gouv.sn/index.php?option=com_content&view=article&id=63&Itemid=118)

22. <http://www.cse.sn/>

23. The Adaptation Fund finances projects and programmes to help developing countries that are parties to the Kyoto Protocol adapt to the negative effects of climate change: <http://www.adaptation-fund.org/>

24. *Ministère de l'Environnement et de la Protection de la Nature, Direction de l'Environnement et des Etablissements Classés, Deuxième Communication Nationale du Sénégal – Convention Cadre des Nations Unies sur les Changements Climatiques*, 2010, p. 142.

25. Oxford Business Group. 2009. *The Report: Senegal 2009 Emerging Markets Series*, p. 68. London.

26. See: <http://www.senre.sn/en/index.php>



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#### 4.4 Civil Society and Farmers' Organizations

Senegal has a network of farmers' organizations that provide technical support for their members. The *Conseil National de Concertation et de Coopération des Ruraux* (CNCR) aims to represent these organizations to the state and development partners with a view to protecting their interests. The *Association Sénégalaise pour la Promotion du Développement à la Base* (ASPRODEB), the technical arm of CNCR, provides technical, organizational, financial and capacity-building services for rural organizations. The objective of the *Fédération des Organisations Non Gouvernementales du Sénégal*, a non-profit federation of 32 small farmers' organizations and a member of CNCR, is technical and political support for its member associations. The *Réseau des Organisations Paysannes et Pastorales du Sénégal* is a union of rural cooperatives for agriculture, aquaculture processing and marketing.

#### 4.5 Private sector

At the end of 2010, microfinance was dominated by the *Crédit Mutuel du Sénégal* and the *Partenariat pour la Mobilisation de l'Épargne et du Crédit au Sénégal*. Other networks include the *Alliance de Crédit et d'Épargne pour la Production and*

*the Union des Institutions Mutualistes Communautaires d'Épargne et de Crédit*.<sup>27</sup>

The *Association Professionnelle des Systèmes Financiers Décentralisés*, founded in 1996 to defend the rights of IMFs, aims to promote the development of microfinance by building the capacity of member IMFs and advocating for the profession.

The *Compagnie Nationale d'Assurance Agricole au Sénégal* (CNAAS), described above, is constrained by the low purchasing power of households and the fact that small farmers are often excluded from agricultural producers' associations. A study by the World Bank concluded that initial constraints in benefiting from weather index insurance were farmers' lack of cash to pay premiums, the need for effective agricultural extension services and the need to improve knowledge and capacities in the financial sector regarding insurance products.<sup>28</sup>

The *Fédération Sénégalaise des Sociétés d'Assurances*, established in 1967, is an association of all the insurance companies working in Senegal. Its objective is to promote insurance and safeguard the interests of its members.

Few insurance companies apart from CNAAS have developed products to cover agricultural risks.

27. See: [http://www.lamicrofinance.org/resource\\_centers/senegal/profilsenegal](http://www.lamicrofinance.org/resource_centers/senegal/profilsenegal)

28. World Bank. 2008. *Development of Market-Based Agricultural Risk Management*. Dakar. European Development Fund. 2008. Agricultural Commodities Programme. Available at : <http://www.euacpcommodities.eu>

## 5. EXISTING PROGRAMMES AND PROJECTS

The logic of R4 is based on the combination of different instruments to address four dimensions of risk (risk reduction, risk reserves, risk taking and risk transfers). Programmes that include such instruments could hence contribute to R4. An innovation of R4 is the integration of asset building and insurance, whereby vulnerable households are able to obtain insurance against weather-related shocks in exchange for creating natural and physical assets to reduce vulnerability to weather shocks. Programmes that build such assets and programmes that support the development of sustainable financial services for vulnerable households will be given priority.

### 5.1 The World Food Programme

The main resilience-building instruments of the World Food Programme (WFP) are Food for Assets (FFA) and Cash for Assets (CFA). In these modalities, food-insecure households receive short-term food or cash to ensure immediate access to food while they help to create assets that will reduce vulnerability to future shocks. In Senegal, WFP also supports the creation of village cereal banks as a mechanism for protecting households against shocks.

In Senegal, FFA is included in the 2012–2016 country programme (CP) 200249 and protracted relief and recovery operation (PRRO) 200138. The CP targets 1.8 million beneficiaries in Kedougou, Kaolack, Tambacounda, Kaffrine, Thies, Matam, Diourbel, Dakar, Fatick and Louga: the FFA component should cover 200,000 households over the five years. The PRRO originally targeted 503,000 conflict-affected beneficiaries in the Casamance Naturelle, but the failure of the 2011 rains led to an extension to the rest of the country to address the food needs of 800,000 people during 2012 through FFA; the school feeding component will run until December 2013.

Under CP component 1, FFA will help fragile communities to sustain production and increase access to food by rehabilitating infrastructure and natural resources with a view to reducing exposure to climate shocks. The main risks are soil depletion and salinization, with consequent loss of agricultural productivity. “WFP’s assistance has increased over the last ten years in response to increased floods and bush fires and communities’ poor capacity to recover.”<sup>29</sup>

The FFA activities in CP 200249 have a timeframe of 30 days. Under PRRO 200138, FFA will be extended to 90 days covering the June–September lean season of precarious food security. In view of the increased agricultural activities at this time, work norms will be reduced to a maximum of four hours a day. The activities, designed in cooperation with the *Ministère du développement rural et de l’agriculture* and cooperating partners, will support smallholder subsistence farmers. They include: i) lowland rehabilitation to increase rice and maize production and vegetable gardening; ii) construction and maintenance of anti-salt dykes and reinforcement of river banks to protect rice-growing areas; and (iii) reforestation and planting of fire-resistant trees. Road repairs will be carried out where appropriate in combination with these activities.

Because under PRRO 200138 the FFA component is implemented in an early recovery context, the focus is on ensuring that the transfer reaches the intended beneficiaries rather than the quality of the assets. It is important to ensure that engaging in FFA does not constrain vulnerable households’ access to food, for example if there is only a single able-bodied person who may have other productive and reproductive tasks competing for her or his time.

The other WFP instrument that could be integrated into R4 is the village grain bank, which aims to ensure that cereals are available and affordable during the lean season. Households will receive 133 kg of maize in exchange for 100 kg of their grain harvest, which will be stored in the grain bank for sale when prices are high. The stocks will be sold at a reasonable price to ensure that people can afford them and to enable farmers to avoid selling at a loss. The funds raised will be used to renew stocks and raise capital. WFP will provide an initial cereal stock, and also pallets, scales, materials for warehouses and technical support to improve warehouse management.

This activity was piloted in 2009 and expanded in 2010 and 2011 by setting-up 379 village grain banks, reflecting the satisfaction of the Government and beneficiaries, and increased funding.

### 5.2 Oxfam America

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29. CP 200249, p. 9.



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Oxfam America has extensive experience in supporting local savings and credit schemes. The Savings for Change (SFC) programme in Senegal, started in 2007, has 49,000 members in 2,000 groups.<sup>30</sup> It is implemented by La Lumière, a local NGO, in Kolda, Kedougou and Tambacounda. The plan is to increase coverage to 200,000 women in Thies, Kaolack, Kafrine and Fatik by the end of 2013.

The SFC programme aims to build women's financial capital through flexible savings and loan instruments that complement traditional systems and their social capital through group participation and leadership. Conventional finance is barely accessible to poor illiterate women, and the value assets such as savings, livestock or jewellery may be eroded by inflation – but SFC maintains the value of assets through the interest on loans to members. The Oxfam America brochure states that "... as women meet, they learn to manage their groups, and they develop bonds of mutual assistance and solidarity. SFC is as much about building social capital as financial inclusion."<sup>31</sup> The design of SFC reflects the *tontines* (traditional informal savings systems) and is therefore understood by rural and illiterate women.

Groups of 20 to 25 women volunteers are trained in group management. They meet weekly and keep records orally.

Initially, one or two groups are formed in each village; others are usually organized when the success of the first ones becomes evident and are supported by members of the original groups who train new groups on a voluntary basis or in exchange for a fee.

Each member contributes a weekly amount agreed by the group. Members may take out short-term loans in turns, and pay monthly interest on them; the principal is refunded after an agreed period. Loans are approved by the group and can be used for small-scale business or to cover health emergencies or household expenditures. Loan terms, conditions and interest rates are defined by each group. A savings cycle lasts between eight months and a year, after which each member collects her savings and her share of the generated interest. A new cycle then begins.

Groups receive no seed capital. The system is based on the tontines and costs are kept low because trainers are volunteers. Groups in Senegal have saved an average CFAF250,000 (US\$505) per cycle. It is also important that groups can function as platforms for health, education, agriculture extension or business advice services for members.

Oxfam America trains an executing partner to implement the project. In Mali, where SFC has operated since 2005, it

30. This figure has probably increased and needs to be updated.

31. Oxfam America Savings for Change programme brochure, 2011.

has facilitated the organization of groups in SFC associations. Research shows that women “appreciate the monthly loans to participant groups and the chance to meet and exchange solutions to problems”.<sup>32</sup> There are, however, areas that need improvement to make the associations more effective.

Research has been carried out on the effects of SFC worldwide. In Senegal preliminary findings may be available in September 2012. Research in other contexts has highlighted strengths and challenges:<sup>33</sup> SFC has the potential to empower women in poor communities by increasing their social and financial assets, but sustainability is a concern because profits are often consumed rather than reinvested and groups struggle to resolve conflicts without external mediation.

A mission in Tambacounda showed that SFC groups were often organized across social status lines and were perceived as improving solidarity among village households; the SFC groups were respected by institutions and were being used as entry points for projects.

### 5.3 Others

The *Programme Croissance Economique* (PCE), part of the United States Agency for International Development’s Feed the Future initiative, supports PNIA in the framework of the SCA. The PCE operates in Dakar, Richard Toll, Kaolack, Tambacounda and Kolda. The PCE uses a range of tools to increase the contribution of agriculture to the national economy such as improvements in farming and post-harvest techniques, modern supply chain and logistics systems and innovations in credit and capital mobilization.<sup>34</sup>

Under PCE weather-based index insurance complements actions such as sustaining increases in productivity, processing and marketing to improve food availability by supporting the value chains for maize, rice, millet and fisheries. Insurance is therefore expected to help to protect farmers’ investment in inputs and lead to higher yields. The pilot index-based weather insurance for maize is being implemented in Kaolack, where PCE obtained good results with the maize value chain; insurance was proposed in 2011 after failed rains prevented farmers from repaying loans taken out to purchase maize inputs. An extension is foreseen in Kolda and Tambacounda.

The International Finance Corporation, the private investment arm of the World Bank Group, and Swiss Re are developing the Global Index Insurance Facility to provide index insurance products that cover farmers against crop failure on the basis of measurable factors such as rainfall levels. The facility was launched by the International Finance Corporation in 2009 as a regional platform to develop agricultural insurance systems in West Africa. Swiss Re will provide technical services for Global Index Insurance Facility projects and use its experience to develop risk transfer solutions for emerging markets. International Finance Corporation (IFC), the private-investment arm of the World Bank Group, and Swiss Re Corporate Solutions (Swiss Re), a reinsurer and financial services group based in Zurich, Switzerland, have partnered to further develop the Global Index Insurance Facility (GIIF) to provide index insurance products that cover farmers against presumed crop failure based on measurable factors such as whether rainfall is below a predetermined threshold. GIIF was launched by IFC in 2009 as a regional platform intended “to develop agricultural insurance systems in West African countries including Senegal, Mali and Burkina Faso... Swiss Re will provide technical services to GIIF projects and support unspecified strategic objectives through its experience in developing risk transfer solutions for emerging markets.”<sup>35</sup> The Senegal-based Global Index Insurance Facility platform is managed by PlaNet Guarantee with branches in Mali and Burkina Faso. It aims to raise awareness of agricultural insurance among 165,000 farmers by 2015.<sup>36</sup> PG, ASPRODEB, CNAAS and Swiss Re are piloting a weather-index insurance product for groundnuts in Kaffrine.

The *Projet d’Appui à la Petite Irrigation Locale*<sup>37</sup> helps communities and producer groups to implement small irrigation schemes in 87 communities in Fatick, Kolda, Tambacounda and Kedougou. To reduce dependency on unpredictable rainfall, and in line with LOASP and DSRP priorities, runoff water is collected for use in agriculture. The project invests in infrastructure for water control and capacity-building for local institutions; it also allocates resources for environmental protection actions: in Tambacounda this is done through labour-intensive work with complementary food resources from WFP.

32. SFC research programme brochure, 2012.

33. Ibid.

34. See: <http://senegal.usaid.gov/node/141>

35. MicroCapital.org Article, April 19, 2011, “PlaNet Guarantee, Global Index Insurance Facility (GIIF) to Launch Index Insurance Platform in West Africa”, <http://www.microcapital.org/microcapital-brief-planet-guarantee-global-index-insurance-facility-giif-to-launch-index-insurance-platform-in-west-africa/> in <http://www.microcapital.org/microcapital-brief-swiss-re-to-assist-international-finance-corporation-ifc-with-global-index-insurance-facility-giif-for-west-africa/>

36. Okonta, C.U. 2011. Swiss Re and the International Finance Corporation support micro-insurance in West Africa. In *Microfinance Africa*, August 2011 and The Nation – see: <http://microfinanceafrica.net/tag/global-index-insurance-facility/>

37. See: <http://www.papil.org/>

## 6. RISK ANALYSIS

The 2010 comprehensive food security and vulnerability assessment (CFSVA)<sup>38</sup> found that 60 percent of households had been affected by at least one shock between April 2009 and April 2010. Price increases were the largest shock, affecting a third of respondents during the 2008/09 food price crisis; illness or injury to a household member affected one in five respondents. It should be noted that bias was inherent in the recall period – rainfall was normal and the 2008 price increases had not receded – and that national averages hide regional differences: for example the price increases were felt more in the arid north where households rely on markets for cereals.

According to the World Bank: “The EMAP (2004) study provided a qualitative assessment of the principal causes of crop production losses as reported by a sample of 1,500 irrigated and non-irrigated farms selected throughout Senegal. [...] For rain-fed crops, drought was identified by respondents as the most important cause of loss (29 percent of all causes of loss cited), [...] the total damage caused by all sources of pests (including insects, animals and birds) and diseases, [...] sums to 49 percent of total, or by far the greatest cause of loss. Crop pests and diseases are management-related factors which, to a greater or lesser extent, can be prevented or controlled through an integrated

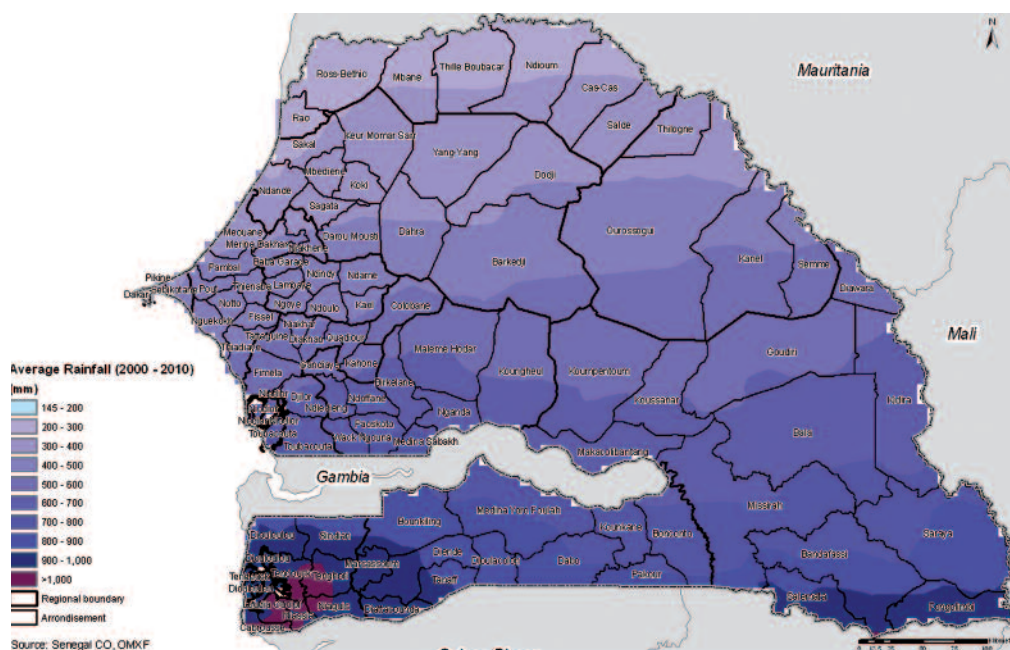
pest management program, and for this reason many crop insurance programs specifically exclude pests and diseases which are deemed preventable or controllable. [...] Apart from drought the only other significant climatic risk was unseasonal or untimely rainfall (9 percent of causes of loss).<sup>39</sup>

A national-level analysis of food security, disaster risk and other factors was carried out by a WFP team,<sup>40</sup> incorporating analysis from the Climate Change, Agriculture and Food Security (CCAFS) initiative, to inform the selection of possible R4 areas and provide information on climate-related risks and their impact on food security. Full results are not yet available, but preliminary conclusions are presented here.

Mean annual temperature increased by almost 1°C between 1960 and 2006, with the most rapid increase in post-monsoon periods; the data show a decline in precipitation between 1960 and the early 1980s, but an increase since 1982 (McSweeney, et al., 2010). Annual variability is so large, however, that long-term trends associated with anthropogenic climate variability alone cannot be determined.

Precipitation in Senegal declines from south to north; most rainfall occurs between June and September.

**Figure 2.** Average rainfall, 2000-2010



The distribution of rainfall partly explains patterns in livelihoods: agro-forestry and cash crops are common in the south, and pastoralism is mostly practised in the north.

Agro-pastoralism is the dominant livelihood in central Senegal (Famine Early-Warning Systems Network, 2012).

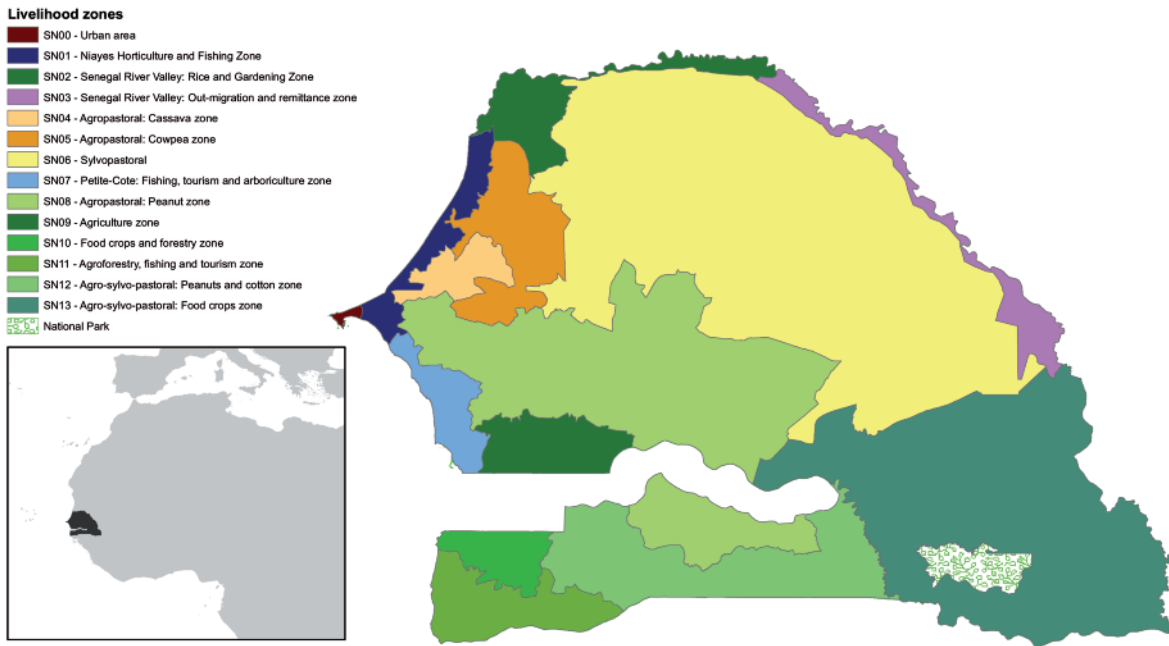
Source: Senegal CO, OMXF

38. WFP. 2010. Analyse Globale de Vulnérabilité, Sécurité Alimentaire et Nutrition (AGVSAN). Dakar.

39. In: World Bank. 2009. *Index-Based Crop Insurance in Senegal: Promoting Access to Agricultural Insurance for Small Farmers, Sustainable Development, Africa Region Finance and Private Sector Development*. Washington DC. No reference was found to the EMAP study of 2004.

40. Comprising of the emergency preparedness and response, food security analysis, policy and programme divisions.

**Figure 3. Livelihood Zones**

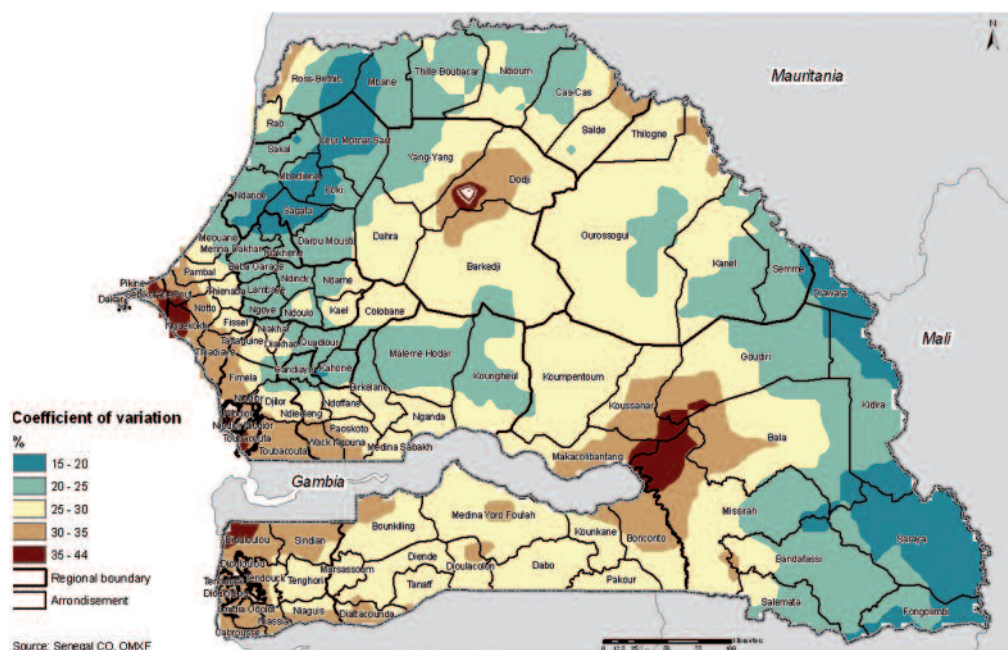


Source: WFP/FAO/SE-CNSA/CSE/FEWS NET (2011)

On-going research suggests a high correlation between climatic factors and agricultural production in Senegal, with about 70 percent of the production of main crops (groundnuts, millet, sorghum, rice and maize) being explained by rainfall variability.<sup>41</sup>

Figure 4 shows inter-annual variability of seasonal rainfall.<sup>42</sup> The area with the greatest variability is northern Tambacounda; it is also high along the south coast and the border with The Gambia.

**Figure 4. Interannual variability of rainfall (1998-2010)**



Source: Senegal CO, OMXF

41. ANACIM, CCAFS, CSE, IRI, WFP. 2012. Climate risk impacts on food security and livelihoods in Senegal. Unpublished

42. The parameter is the coefficient of variation expressed as a percentage.



Additional indicators have been consulted with a view to corroborating climate risk analyses. The frequency of poor growing seasons, variations in the start of the rainy season, and the length of dry spells are all factors that could exacerbate food insecurity.

The areas with frequent poor growing seasons are mostly the pastoral areas in northern Senegal. Major variations in the start of the rainy season mean that farmers without irrigation are vulnerable because they cannot make advance plans for planting. The length of dry spells is also an indicator of vulnerability to climate. Moderate dry spells during the growing season can affect crop production and hence food prices; long dry spells render agriculture unviable, as in northern Senegal.

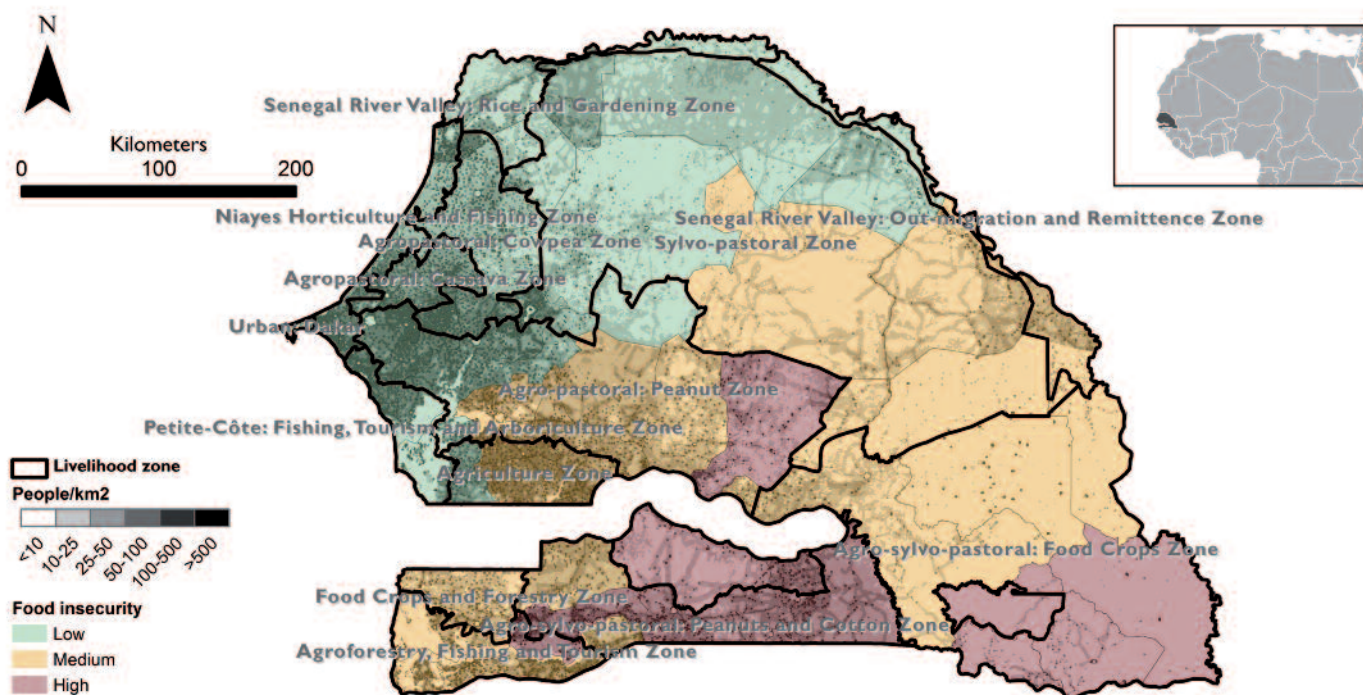
Droughts and floods affect households' ability to meet their food requirements and can lead to food insecurity. Heavy rains and flooding appear to be more frequent: floods affected 179,000 people in 2002, 250,000 in 2008 and 360,000 in 2009 and destroyed infrastructure and

property. Water-borne diseases have become more common because of the presence of stagnant water (World Bank, 2011b).

It has been difficult to assess the frequency of droughts. Humanitarian appeals record droughts in 2002, affecting 284,000 people, and in 2011 affecting 850,000 people, but anecdotal information suggests that droughts also occurred in 2000 and 2007. Information about these events and their effects for food security is sparse and prevents systematic analysis.

The food security map produced by the 2010 CFSVA shows the areas that appear to be food and nutrition insecure on the basis of a direct measure of food consumption score and on proxies such as the household wealth index and global chronic malnutrition. The 2010 CFSVA data were collected after the 2009 rainy season, which was normal. The findings were consistent with those of a 2003 assessment by WFP that followed the 2002 drought.

Figure 5. Food Security Map (CFSVA, 2010)



Food insecurity is shown in this map through three proxies: prevalence of food insecurity, poverty incidence and global chronic malnutrition as measured by the CFSVA (2009/2010). A department is considered to have high food insecurity when prevalence of food insecurity is >20%, poverty incidence is >60% and GCM is >30%. A department is considered to have medium food insecurity when prevalence of food insecurity is 15-20%, poverty incidence is 40-60%, and GCM rates are 20-30%. A department is considered to have low food insecurity when prevalence of food insecurity is <15%, poverty incidence is <40%, and GCM rates are <20%.

Source: WFP (2012)

Food insecurity is more prevalent in southern and central areas, particularly Ziguinchor, Kolda and Kédougou (see Figure 4). In contrast with other Sahel countries, food security is not climate-sensitive in Senegal. Conflict is probably the main contributor to food insecurity in the Casamance; poverty and lack of access to markets are major factors in western and southeastern areas. Price volatility in recent years has been a driver of food insecurity, particularly in towns, but in the northwest of Tambacounda region rainfall uncertainty may be a contributing factor in food insecurity.

Based on food security and climate risk analysis, four broad geographic areas are identified:

- eastern, including northern Tambacounda, which has moderate to high food insecurity and the highest inter-annual variability of rainfall; it is an agro-pastoral zone with a mix of cash and food crops;
- southern – Casamance, Kédougou and southern Tambacounda – which is the most food-insecure area by any parameter, but the factors seem to be more economic: distance from markets, low remittances and conflict in Casamance, for example; rainfall is the highest in the country with relatively little variability;
- northern – Matam – which is largely food-secure, a sparsely populated, agro-pastoral area except for intensive irrigation on the shores of the Senegal River; it has the highest rainfall variability; and
- western – Louga and Kaolack – characterized by cash crops, high remittances, lower poverty, greater exposure to floods and high population density.



# 7. R4 IN SENEGAL

## 7.1 Why?

A number of conditions provide the rationale for piloting R4 in Senegal. Poverty is a predominantly rural phenomenon that affects households dependent on agriculture and livestock. Poverty and food insecurity are predominant in southern areas affected by conflict and economic isolation. Even though linkages between weather risks and poverty or food insecurity have not yet been demonstrated,<sup>43</sup> in the rest of the country weather-related shocks nonetheless prevent farmers from investing in their land; this in turn impedes government efforts to modernize the agriculture sector and increase rural incomes. The shocks include local flooding, recurrent poor growing seasons, delays in the start of the rains and long dry spells during the growing season.

Demographic pressure drives farmers to cultivate on poor soils and reduces their ability rotate crops, which in turn leads to continuous land degradation. Focusing on high-input/high-output agriculture could exacerbate this situation because monoculture is promoted at the expense of intercropping, and chemical fertilizers are used rather than an integrated approach to managing soil fertility. Developing irrigated agriculture near major rivers has in the past increased productivity. Managing runoff water could enable communities to reduce the risk of uncertain rainfall and increase incomes in areas with no permanent water resources.

Agriculture creates seasonal labour peaks and produces seasonal incomes that may not match spending needs. Formal and informal credit and savings mechanisms, in kind or in cash, help families align revenues with spending peaks. However, this increases the need for farmers to sell their crops immediately after harvest to meet all their financial and social obligations. As a result, large amounts of produce flood markets, prices collapse and more has to be sold to cover expenditures.

Senegal has a strong microfinance sector, but it is not always accessible to remote communities or to poor rural people. It also has some of the most effective producers' associations in the region, but not all households can participate. This limited access to physical and financial assets, compounded by weak social assets, makes it difficult to emerge from poverty without external intervention.

The Government is concerned about the potential impacts of climate change on vulnerable communities. In view of its limited resources, it has invested in coastal areas, where the effects are more visible and the economic impacts – on tourism for example – are significant, or in large-scale irrigation where immediate returns may be high. There is hence scope for

supporting rural communities in improving their resilience to weather-related shocks.

The Government has created a specialized body, the Compagnie Nationale d'Assurance Agricole du Sénégal (CNAAS) to provide agricultural insurance. Weather-index insurance is the most promising option in view of the cost of traditional loss-adjustment insurance and the challenges of area-yield insurance. Two on-going pilot projects will reveal the potential and the pitfalls of developing weather-index insurance in Senegal.

## 7.2 What?

In Senegal, R4 is expected to be linked to projects run by Oxfam America and WFP because: i) communities trust them, which will make start-up easier; ii) they will provide inputs for one or more of the risk-management dimensions; iii) their local offices will be able to support implementation; and iv) resources could be leveraged for complementary projects. The programmes of Oxfam America and WFP could hence be the backbone of R4.

Oxfam America is expanding SFC, which enables rural women to improve the management of their financial resources and build their social assets. An on-going evaluation of SFC will show what works and what needs improvement and will assess its economic and social impact on households and communities; this will feed into the design of R4.

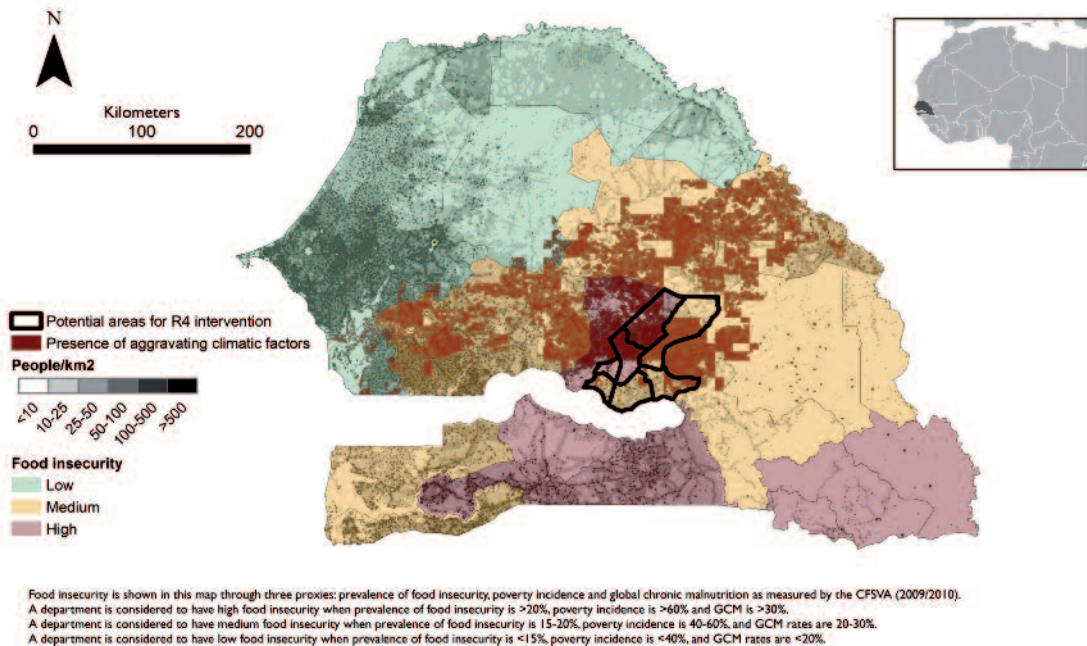
WFP uses food or cash to compensate vulnerable households for the time spent building risk-reduction assets. Such low-capital, labour-intensive investments may be the best way to employ under-used labour and slow migrations to towns during lean seasons. WFP also supports village grain banks, which enable rural communities to store cereals for sale at affordable prices in lean seasons. These mechanisms could provide entry points for micro-insurance to protect household savings and investments. There are a few pilot schemes for weather-based index insurance to protect farmers' investments in value chains. Oxfam America and WFP could draw on them to develop affordable insurance schemes to protect household assets from shocks and allowing them to grow in normal times.

## 7.3 Where?

Figure 5 shows the distribution of low, medium and high prevalence of food insecurity in Senegal. The map in Figure 6, which indicates the areas where aggravating climatic factors affect food insecurity, shows that central Senegal is most sensitive to climatic shocks.

43. A study of causal relationships between climate change, vulnerability, livelihoods and food security in Senegal is being carried out as part of the Climate Change, Agriculture and Food Security programme of the Consultative Group on International Agricultural Research.

**Figure 6. Food-Insecure Areas with Aggravating Climatic Factors**

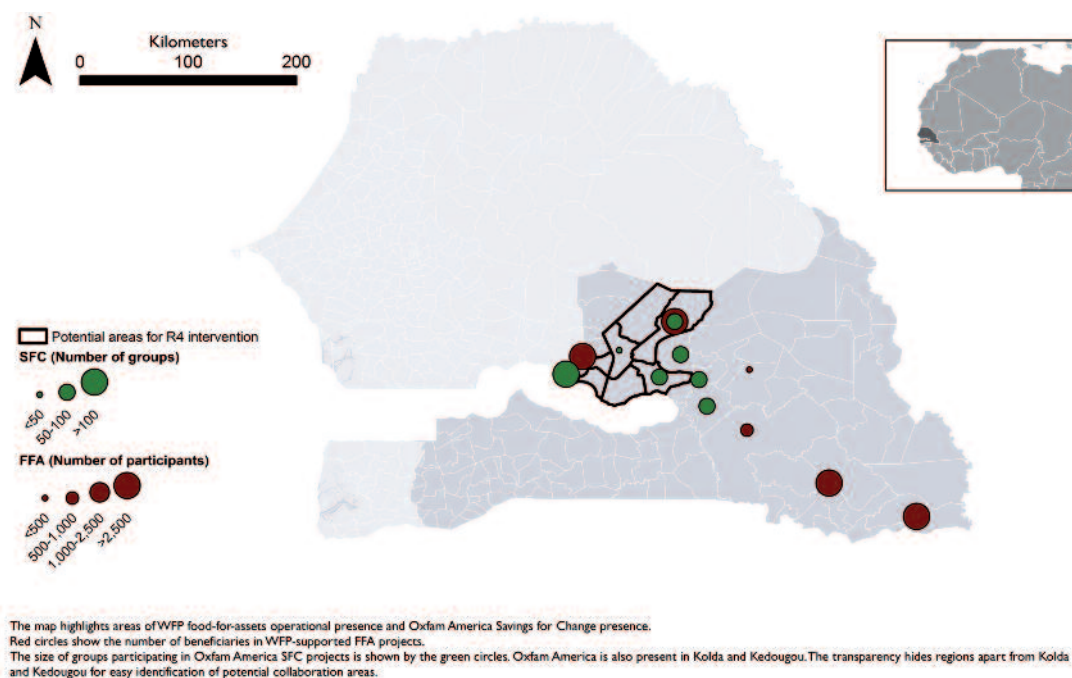


Source: WFP (2012)

A significant factor for the choice of the pilot area was the presence of Programmes that build natural and physical assets to reduce vulnerability to weather shocks and / or that support the development of sustainable financial services for vulnerable households, ideally implemented by Oxfam America and World Food Programme. Besides leveraging resources and providing inputs into one or more of the risk management dimensions, this would ensure close support to

implementation through their local offices and partners as well as essential knowledge of, and trust from, communities. Figure 7 shows the areas where Oxfam America is supporting savings groups in its SFC programme and where WFP is implementing FFA. The size of dots represents the number of SFC groups and the number of participants in FFA. The red circle identifies the area in which two weather index insurance pilots (see #5.3) are currently being implemented.

**Figure 7. Oxfam America’s SFC and WFP’s FFA operational areas**

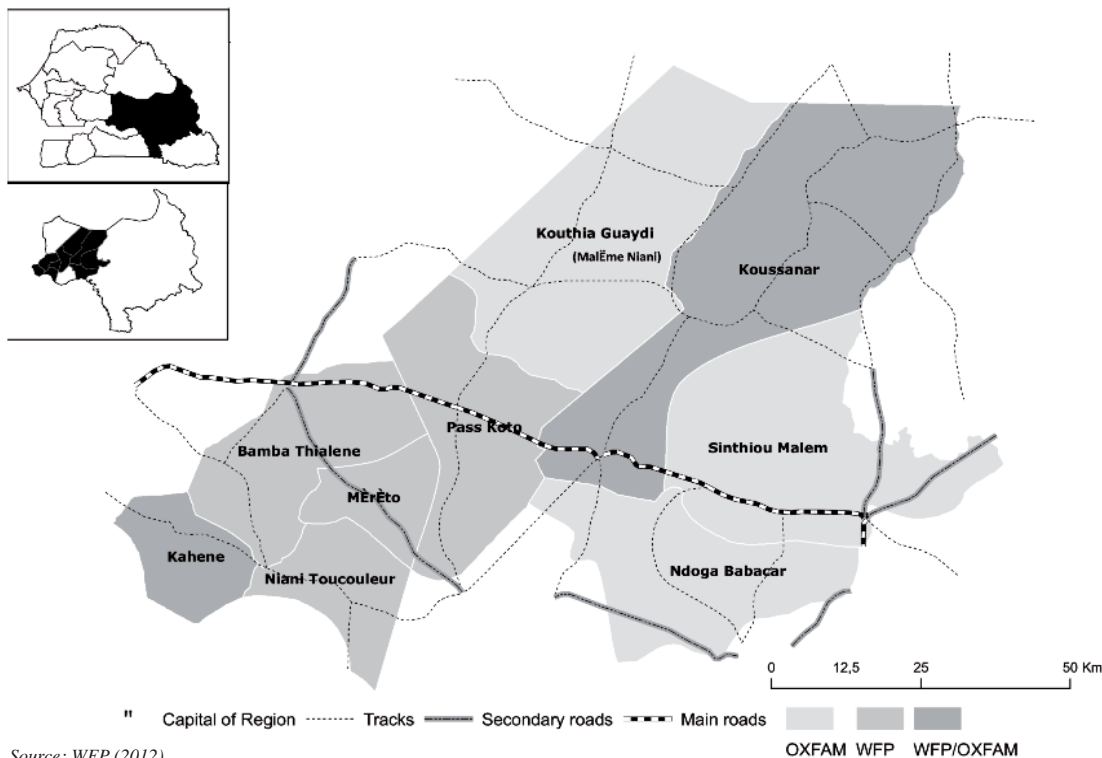


Source: WFP (2012)

On the basis of the information shown in the maps in Figures 5, 6 and 7, a decision was made to reduce implementation of the R4 pilot project to nine rural communities in north-

western Tambacounda (see Figure 8). The potential Communautés Rurales for R4 interventions are outlined in Maps 6 and 7.

**Figure 8.** Potential Rural Communities for R4 Implementation



Source: WFP (2012)

### 7.4 With whom?

While the R4 Initiative falls in the domain of Disaster Risk Reduction (DRR) and resilience building in the face of climate change, its different components overlap with sectors as varied as agriculture development, social protection or expansion of financial services. The choice of which Government body would be the best host for R4 in Senegal rests on deciding who is best

placed to effectively lead and give national visibility to the R4 approach (see Table 1). An alternative could be to link R4 to one of the several Quasi-Government organisations that are champions in their respective sectors or to one national body that best represents the interests of the rural population (see Table 2). The effect on institutional structures after the recent change in Government will be carefully monitored during the second half of 2012. Key R4 potential technical partners at national level were also mapped out.

**Table 1.** Potential Government Lead Institutions

Name	Arguments in favour
Ministère du Développement Rural et de l'Agriculture	Agricultural development is at the centre of Government's poverty reduction strategy. Reference ministry for WFP, at least for the <i>Banques Céréalières Villageoises</i> . Reference ministry for several potential R4 national and local partners. Reference institution for several projects with which R4 may collaborate. Reference institution for agricultural producers' associations.
Ministère de l'Environnement et de la Protection de la Nature	In WFP, R4 is anchored to climate change, environmental issues and disaster risk reduction. Chairs the National Committee on Climate Change. Focal point for the Global Environment Fund.
Ministère de la Femme, de l'Enfance et de l'Entrepreneuriat Féminin	Co-chairs steering committee for social protection. Potentially the reference institution for SFC.
Ministère de l'Économie et des Finances	Financial and insurance institutions are under the authority of this ministry.

**Table 2.** Potential R4 partners at national level

Name	Mandate	Potential role in R4
CNAAS	Semi-public insurance company specializing in agricultural risks. Mandated to protect farmers against natural disasters and risks related to agricultural, forestry and livestock activities.	Co-develop and manage index insurance products.
PlaNet Guarantee	Insurance broker aiming to protect against all types of risks populations excluded from conventional insurance systems and not covered by other social protection mechanisms.	Co-develop and manage index insurance products.
CNCR	Aims to represent rural organizations to the state and development partners in safeguarding professional and social interests.	Body to be consulted at the national level.
ASPRODEB	Technical arm of CNCR; provides technical, organizational, financial and capacity building for rural organizations.	To be explored; may provide technical / organizational expertise in groundnut value chains
Fédération des Organisations Non-Gouvernementales du Sénégal	Non-profit federation of peasant organizations – 32 associations and 3,000 groups in 2007; objective is technical and political support for member organizations. Member of CNCR.	To be explored.
Réseau des Organisations Paysannes et Pastorales du Sénégal.	Union of rural cooperatives; members are mainly involved in agriculture and aquaculture processing and marketing.	Could play a role in the millet / sorghum value chains.
ISRA	The national agricultural research institute.	Establish technical specifications for crops. Produce pre-base seed for groundnuts and rice.
CERAAS	Research centre that depends on the Senegalese ISRA, but has special status because it is also helped by the West and Central Africa Council for Agricultural Research and Development. It can accommodate students and foreign researchers.	Could contribute by: i) monitoring equipment, plots, crops, farmers' yields; ii) providing weather data; and iii) contributing to analysis
Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)	Partners with countries to produce and transmit knowledge to contribute to agricultural development.	May contribute to R4 through its support for ISRA and CERAAS.
(Ministère de l'Écologie et de la Protection de la Nature, Direction de l'Environnement et des Etablissements Classés –D EEC	Responsible for project Integration of Adaptation Strategies to Climate Change for Sustainable Development in Senegal (PAA/INTAC)	Provide national strategic leadership; Coordinate / supervise EIA (Division of Environmental Impact Evaluations)
Centre de Suivi Ecologique (CSE)	Centre of excellence for sustainable management of natural resources, particularly collection and management of data on natural resources from space technologies.	Provide technical leadership. Participate in impact monitoring.
Agence nationale de l'Aviation Civile et de la météorologie (ANACIM)	Responsible for coordinating and supervising all meteorology-related issues in Senegal.	Manage weather stations and data. Validate climate trends.

## 8. RISKS FOR IMPLEMENTATION

The two main risks of weather-based index insurance for agriculture in Senegal are: i) basis risk, which would discourage households from purchasing policies and could create mistrust in products and institutions; and ii) removal of state subsidies, which would make insurance prohibitively expensive. The first may derive from negative experiences during the pilots, but the second may be induced by unexpected successes of weather-based index insurance

products, which would render current subsidies unaffordable for the Government.

Other risks that could affect R4 in Senegal relate to the operational capacities of partners such as CNAAS and weather shocks that result in food security concerns and refocus activities from resilience-building to emergency response.



WFP/Fabio Bedini

## 9. NEXT STEPS AND MILESTONES

The national assessment will inform the choice of R4 pilot areas and the design of its strategies and tools, and will help in the selection of partners. It will be followed by regional and local investigations of climate-related shocks in the areas selected for the pilot, an appraisal of markets and value chains, and assessments of local institutions and capacities. These will help to fine tune the pilot, inform the choice of local partners and feed into planning of the next phases.

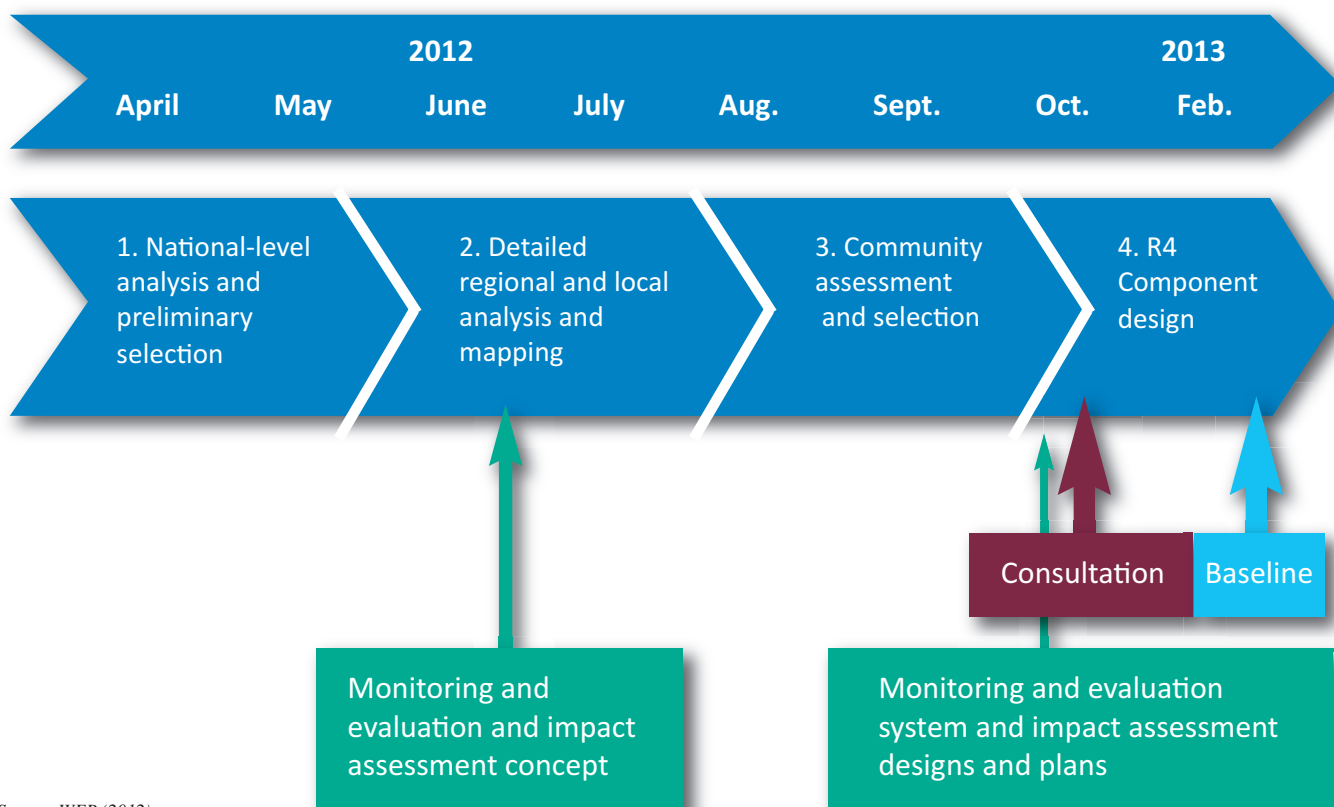
The next major output will be a seasonal livelihoods and risk analysis, which will review the literature and involve communities and partners in a workshop to find answers to the following questions:

- What is the optimum strategy for addressing resilience in terms of target groups and timing?

- What are the best modes of intervention – for example short-term transfers, long-term investments, capacity-building?
- Which asset-building interventions are possible, and when?
- At which time of the year are transfers the best way to improve access to food?
- What are the risks and opportunities associated with alternative transfer modalities?

This output will inform the design of R4 components, the monitoring and evaluation system, the method of impact assessment and the baseline study.

**Figure 9.** time line of R4 Assessment and National Planning phase in Senegal



Source: WFP (2012)



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# ACRONYMS USED IN THE DOCUMENT

ANACIM	Agence Nationale de l'Aviation Civile et de la Météorologie
ASPRODEB	Association Sénégalaise pour la Promotion du Développement a la Base
CERAAS	Centre d'Etudes Régional pour l'Amélioration de l'Adaptation à la Sécheresse
CFSVA	crop and food security vulnerability assessment
CIMA	Conference Interafricaine des Marchés d'Assurance
CNAAS	Compagnie Nationale d'Assurance Agricole au Sénégal
CNCR	Conseil National de Concertation et de Coopération des Ruraux
CNSA	Conseil National pour la Sécurité Alimentaire
CP	country programme
CSE	Centre de Suivi Ecologique
DSRP	Document de Stratégie pour la Croissance et la Réduction de la Pauvreté
FAO	Food and Agriculture Organization of the United Nations
FFA	food for assets
GAFSP	Global Agriculture and Food Security Programme
GDP	gross domestic product
ISRA	Institut Sénégalais pour la Recherche Agricole
LOASP	Loi d'Orientation Agro-Sylvo-Pastorale
MFI	microfinance institution
NGO	non-governmental organization
PCE	Programme Croissance Economique
PNIA	Plan National d'Investment Agricole du Sénégal (2011–2015)
PRRO	protracted relief and recovery operation
R4	Rural Resilience Initiative
SCA	Stratégie de Croissance Accélérée
SFC	Savings for Change
WAMU	West African Monetary Union
WFP	World Food Programme



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## COLLABORATION

The R4 Rural Resilience Initiative is a strategic collaboration between the World Food Programme and Oxfam America, with no commingling of funds. Each partner has its own sponsors as listed. R4 is inviting donors to support expansion.



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