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# Senegal

## Managing Risks in Rural Senegal

### A Multi-Sectoral Review of Efforts to Reduce Vulnerability

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## Monetary Equivalent

Monetary Unit = CFA Franc  
1.00 dollar US = 500 CFA Francs

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### ACRONYMS AND ABBREVIATIONS

ACEP	<i>Alliance de Crédit et d'Épargne pour la Production</i>
ANCAR	<i>Agence National de Conseil Agricole et Rural</i>
ANEJ	<i>Agence National Pour l'Emploi des Jeunes</i>
AGETIP	<i>Agence d'Exécution des Travaux d'Intérêt Public</i>
BCEAO	<i>Banque Centrale des Etats de l'Afrique de l'Ouest</i>
CMS	<i>Crédit Mutuel du Sénégal</i>
CNCAS	<i>Caisse Nationale du Crédit Agricole du Sénégal</i>
CR	<i>Communautés Rurales (Rural Local Governments)</i>
CSA	<i>Commissariat à la Sécurité Alimentaire (Food Security Commission)</i>
CSS	<i>Caisse de Sécurité Sociale</i>
DJOMECE	<i>Djolof Mutuelle d'Epargne et de Crédit</i>
DPS	<i>Direction de la Protection Sociale</i>
DRDR	<i>Directorates of Rural Development</i>
DSRP	<i>Document de Stratégie de Réduction de la Pauvreté</i>
ESAM	<i>Enquête Sénégalaise auprès des Ménages</i>
FAO	<i>Food and Agriculture Organization</i>
FB	<i>Fonds de Bonification</i>
FC	<i>Fonds de Calamité</i>
FG	<i>Fonds de garantie</i>
FSCA	<i>Fonds de Sécurisation du Crédit Agricole</i>
GDP	<i>Gross Domestic Product</i>
GECs	<i>Groupement d'épargne et crédit</i>
GOS	<i>Government of Senegal</i>
HIV/AIDS	<i>Human Immune-deficiency Virus/Acquired Immune Deficient Syndrome</i>
IDA	<i>International Development Association</i>
IDEN	<i>Inspection Départementale de l'Education</i>
ILO	<i>International Labor Office</i>
IPM	<i>Institution de Prévoyance Maladie</i>
IPRES	<i>Institution de Prévoyance Retraite du Sénégal</i>
IPS	<i>Institution de Prévoyance Sociale</i>
IRSV	<i>Inspection Régionale des Services Vétérinaires</i>
ITBN	<i>Insecticide-Treated Bed Net</i>

MDGs	Millennium Development Goals
MFI	Micro-Finance Institutions
MICS	Multi-Indicator Cluster Survey
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOH	Ministry of Health
MFFDS	Ministry of Women, Family and Social Development
NAC	National Agriculture Caisse
PAREP	<i>Programme d'appui à la réduction de la Pauvreté</i>
NGOs	Non-Governmental Organizations
PASEC	<i>Programme d'Analyse des Systèmes Educatif</i>
PDEF	<i>Programme Décennal de l'Éducation et de la Formation</i>
PIV	<i>Périmètres Irrigués Villageois</i>
PLCP	Project to Fight against Poverty
PNDS	National Development Health Plan
PRSC	Poverty Reduction Support Credit
PSIA	Poverty and Social Impact Assessment
AFDS	<i>Agence de Fond de Développement</i>
SONACOS	<i>Société Nationale des Oléagineux du Sénégal</i>
UEMOA	<i>Union Economique et Monétaire de l'Afrique de l'Ouest</i>
UNACOIS	<i>Union Nationale des Commerçants et Industriels du Sénégal</i>
UNCAS	<i>Union Nationale des Coopératives Agricoles du Sénégal</i>
UNDP	United Nations Development Program
UNICEF	United Nation Fund for Children
WFP	World Food Program

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## EXECUTIVE SUMMARY

**The main objective of the study is to provide analytical support to the Government of Senegal in the design and implementation of policies to reduce the vulnerability of the rural poor.** Despite relatively robust economic growth since the mid-1990's, the development of Senegal's rural areas continues to lag further behind, hindered by structural vulnerabilities, unequal access to basic public and private services, and a limited range of strategies to prevent, mitigate and cope with risks.

**Although economic growth in recent years has reduced poverty in Senegal, these gains have been less for rural populations, home to 6 million out of the total population of 10 million.** The rural economy remains largely agrarian and sixty-five percent of the rural population is poor. Better-off rural households are either less dependent on agriculture in that they are more likely to hold public sector employment or be engaged in services and commerce, or, if engaged in agriculture, have greater concentrations of land and/or animals. Despite the greater poverty in rural areas some households have found effective strategies for economic growth within this environment.

### Nature and Severity of Risks

**Natural risks are intertwined with the agricultural nature of the rural economy and its Sahelian setting.** Cyclical droughts reduce agricultural production and decimate herds. However, the impacts of these shocks are highly variable depending on the agricultural season, the agro-ecological zone, the type of crop and whether land is under irrigation. Over the last 25 years, Senegal experienced six years that could be characterized as major precipitation shocks with late onset of rains, irregularity in spatial distribution, and an early end of the rainy season. In drought years, loss of production of groundnuts has been valued between US\$35–135 million and for millet/sorghum between US\$24–60 million. Despite the overall fragility of precipitation, certain localities are affected by floods (Saint Louis, Matam, Louga, Tambacounda and Kolda) causing deaths, displacement, destruction of property and important loss of crops and animals.

**Other natural risks involve pests, plant and animal diseases.** Senegal periodically experiences locust swarms, most recently in 1988 and 2004. Unlike general drought, locust damage is geographically sporadic. An estimated 20 percent of rural households were affected in 2004 with grain losses estimated at less than 50,000 tons (about US\$14 million), plus extensive damage to livestock pastures in certain regions. Other endemic infestations affecting agriculture and livestock are less spectacular but can cause significant production losses, including grain-eating birds, aphids, white fly and various animal diseases. Prevention and treatment of parasitic infestations remains limited.

**Economic risks in the rural areas are related to those of an open economy, changes in the agricultural production and commercialization systems, and income and purchasing power risks.** While employment is a major economic risk in urban areas, this is not as relevant for rural Senegal where most of the labor force is self-employed or engaged in informal or part-time activities to diversify income. Groundnuts and

groundnut products, the main agricultural export crop, have seen exports decrease over time partly because of poor political management of sub-sector reforms since the mid-90s, as well as depletion in the quality of seeds and soil and downward trends in world prices over the last decade. The transition to a more liberalized market structure has caused dislocations, including lack of access to critical inputs like seeds and fertilizers. The 1994 devaluation of the CFA spurred economic growth overall, but the growth was not strictly 'pro-poor' as gains were less apparent for rural producers due to a drop in the real value of crops after the devaluation and an erosion of rural purchasing power.

**Rural populations are more exposed to health shocks and face greater constraints in accessing health services.** Malaria is the most widespread health issue facing Senegal. Nationally, malaria accounts for 31 percent of morbidity and 32 percent of mortality, and is more likely to strike rural populations. It is estimated that the direct and indirect effects of malaria reduce annual GDP growth by 0.35 percent in Senegal. Infant mortality, maternal mortality and child malnutrition are also much higher in rural areas. Contributing to the high maternal mortality rates in rural area, 45 percent of rural women give birth either alone or with a family member or friend, while only 12 percent of urban births took place in such risky settings. Although Senegal has one of the lowest HIV prevalence rates in Sub-Saharan Africa, at an estimated 1.5 percent of the adult population, risks to rural populations come from transmission through labor migrants, a lower level of knowledge about prevention and treatment options, and less access to testing and life-saving treatment.

**In the face of a health shock, rural populations tend to use health services less than urban dwellers.** When sick, two-thirds of rural households sought out health services versus three-quarters for urban residents, declining by poverty level. More importantly, rural residents access lower quality health services, including greater use of traditional healers, and less likelihood of using public and private hospitals and clinics. Financial access appears to be a significant factor, along with physical access and perceived quality of care. For those rural residents who said they had been sick, fully 40 percent did not seek treatment because it was too seen as too costly, although this is interrelated with both distance and quality.

**Risks to educational accumulation include never enrolling, dropping out during the course of the year or between years, or not learning the sufficient skill base.** The estimated gross primary enrollment rate is 95 percent in urban areas and 70 percent in rural areas. This translates into over 300,000 rural children of primary school age that are not in school, one-third of whom are in the Diourbel region and other significant numbers in Kaolack and Louga. There is little difference in attendance rates between poverty quintiles (not true of urban areas). As constraints to physical access have begun to ease through extensive investments in rural classrooms, demand-side factors and issues related to quality and cost are coming more to the forefront. Factors that appear to most impede rural primary educational attainment are illness of the child, lack of perceived relevance (due to a combination of low returns to primary education in rural areas, low levels of parental schooling, and parental preferences for religious and Arabic education), and child labor and economic decisions made both in times of good and bad harvests.

**Regional conflict in the Casamance and community and household level occurrence of theft, property disputes and violence are the principal sources of social risks in rural Senegal.** Conflict in the Casamance since the early 1980s has displaced populations, left people disabled from land mines and destroyed infrastructure and resulted in a loss of tourism receipts and private investments and a slow down in public investments. Nationwide, livestock theft is a growing problem and heightens rural vulnerability given the use of livestock as a store of wealth and a hedge against shocks.

**Most villages experience multiple negative shocks.** The greater the number of shocks, the greater was the likelihood that villagers perceive a worsening situation. Nonetheless, even within the same village, these shocks hit households differently. With its close ties to agricultural production and weather patterns, there is an important seasonal aspect to rural vulnerability. This critical period, known as the 'hungry season', exacerbates vicious cycles and is a time of heightened vulnerabilities. Peak labor demands occur at a time of highest malnutrition and malaria. The malaria peak also coincides with the rainy season when transport for health emergencies is most difficult. Lack of available income in the pre-harvest period coincides with heightened need for cash to pay for health treatment and may delay the entrance of children into school as fees can only be paid after the harvest.

### **Informal and Market-Based Risk Management Mechanisms**

**Households and communities seek to decrease their vulnerability through long-standing practices of risk management in the face of the vagaries of life in the Sahel.**

Informal strategies to prevent shocks from manifesting take many forms including vaccinating children and livestock, irrigation, clearing to prevent bush fires and so on. Strategies to mitigate the impact of a shock center on diversification of production and revenue. Within rain-fed agriculture, throughout the 1990s there has been diversification away from groundnuts and other cultivations that have been most affected by adverse weather patterns and into such crops as watermelon and *niébé*. Coping strategies include reduction in quantity and quality of food eaten, sale of animals, use of traditional medicines, non-enrollment of children in school and recourse to temporary migration.

**Social networks and local organizations are the frontline of defense in the face of shocks to households.** Religious organizations, women's groups, informal savings clubs (*tontines*) and culture and sport organizations are present in the vast majority of rural communities and include all income categories equally. Associations around economic advancement, education water and health management are less prevalent and may be more exclusionary in their membership. Rural households contribute financially to the maintenance of these networks, across all income groups.

**Households also seek to diversify against rural risks by out-migration.** Even though marriages and other family events are the main reason for rural migration, a significant amount of migrant households cite economic reasons (e.g. lack of jobs, a new job in a different location, and access to land). International migration has grown in importance, with an estimated half a million Senegalese residing abroad. Statistically, migration to other African nations accounts for the largest number of Senegalese émigrés. From this

migration, international remittances to Senegal have grown steadily and account for about 6 percent of Senegal's GDP. Anecdotal evidence suggests that there are regions where this can be an important, and even predominant, income source. Informal systems to transfer remittances tend to be lower cost than using formal financial systems, though risks are higher. Formal transfers are largely affected through the Post Office with its extensive rural presence, and increasingly micro-finance institutions (MFIs).

**Among the market-based risk management mechanisms, modern financial instruments, including savings and credit, are essential tools for consumption smoothing and growth.** Accumulation of savings in financial stores allows for more efficient consumption smoothing in the face of shocks, self-insurance against risk, safekeeping of wealth accumulation and increased credit worthiness. In addition to financing investment and growth, credit is crucial to smoothing consumption in the face of emergencies. Most rural savings are still 'on the hoof', although formal and informal financial savings are growing in importance. The micro-finance industry in Senegal has flourished in recent years. The rural areas are an important segment of the market for several of the larger MFIs. However, most funding of agricultural credit is provided through the semi-public commercial bank CNCAS.

**Insurance helps households mitigate the adverse effects on income and consumption of health crises, death, disability, old-age, crop loss, business failure and losses through theft, fire and accident.** Formal insurance mechanisms are extremely limited in Senegal, and virtually non-existent in rural areas. The most active segment of the insurance market involves mutual health associations, which have increased significantly since pilot efforts in the mid 1980s and now count over 90 nationwide with 66,000 paying members and 220,000 total beneficiaries, researchers estimate that well under 10 percent of total beneficiaries are in rural areas, mostly involved in community-based health mutuals. There appears to be potential to extend health insurance through the larger-scale producer cooperatives and federations as well as pilot efforts through MFIs. However, health insurance only works for groups of people with economic resources to pay the premia and where the availability of quality services incites the member to pre-purchase some future stream of services.

### **Public Sector Policies and Expenditures to Manage Risk**

**Risk management activities are distributed across several ministries and agencies,** including: (a) Ministry of Family, Women and Social Development, and the Ministry of National Solidarity (MFFDS/SN); (b) Ministry of Health and Medical Prevention; (c) Ministry of Education; (d) Ministry of Labor and Public Administration; (e) Ministry of Small and Medium Enterprise Development, Micro-Finance and Women Entrepreneurs; (f) Ministries in charge of agriculture, rural water and livestock; (g) Ministry of Interior; and (h) Ministry of Youth as well as selected programs under the Prime Minister's Office.

**The Government spent US\$43 million in 2004 on social assistance, safety nets and disaster management, including community development programs of the MFFDS.** The focal point for disaster management is the Civil Protection Department of the Ministry of the Interior, supported by the MFFDS/SN and NGOs like the Red Cross to provide

emergency supplies, cash and rebuilding materials. The Ministry of Agriculture responds to the after-effects on production capacity. Responses to floods in 2003-2004 were quickened with the entry into disaster relief of the recently created National Solidarity Fund. But, the parallel approaches of community committees and top-down distribution through local officials can reduce efficiency and create overlap.

**For social assistance and safety nets, the Ministry of Women, Family and Social Development (MFFDS) and the Ministry of National Solidarity (MSN) have the basic mandate to protect the most vulnerable families and individuals.** MFFDS has a long list of social assistance and community development programs targeting women, disabled, children at risk, elderly, and vulnerable rural communities. At the MSN, the National Solidarity Fund finances disaster relief and intends to expand into infrastructure, micro-credit and social assistance. The Commissariat for Food Security (CSA) ensures food security through food distribution and monitoring of country conditions, including extensive rice distribution largely through religious leaders. Programs use different approaches and criteria, with little coordination and monitoring.

**To manage agricultural risks many projects in the investment budget support the general development of agriculture, contributing in various ways to the prevention of shocks.** The bulk of investments in agriculture and livestock are to increase productivity through irrigation, improvement of technologies, and support to the development of producer organizations. Irrigation-related investment projects alone account for between 40- 60 percent of the Ministry of Agriculture investment budget.

**In addition, from the late 1990s a series of financial mechanisms were put in place to mitigate and cope with risks to agriculture and to seek to ensure an adequate flow of credit to the sector.** Collectively known as the Funds for Security of Agricultural Credit (*Fonds de Sécurisation du Crédit Agricole FSCA*), they include a guarantee fund, and interest rate subsidy on agricultural credit through CNCAS and a fund to respond to agricultural calamities. From 1998-2004, 28 billion CFA (US\$56 million) was allocated through these funds to mitigate and cope with shocks to rural producers. It is difficult to assess the overall impact of the FSCR mechanisms. The various funds have kept some measure of credit flowing at a time of stress, but, they do not properly address longer-term sector creditworthiness and solvency issues.

**The public sector, including central government, donors and local government, spent US\$176 million on health in 2004, equivalent to 2 percent of GDP.** Despite growth in the number of health centers and health posts, health services have had difficulty in keeping pace with population growth in recent years. Rural residents perceive an overall lower quality of service, centered on high cost and ineffective treatment. These drawbacks affect management of health risks like control of maternal mortality. In terms of malaria prevention and treatment, incremental funding has been mobilized, but delivery of bednets and revisions to treatment protocols are limited by weaknesses in the community health system in rural areas and inability for the rural poor to pay for services. The Government has scaled up efforts to prevent and treat HIV-AIDS, though rural populations were less likely to benefit. Malnutrition shows signs of being effectively addressed through the

Nutrition Enhancement Project, though scalability in rural areas is constrained by cost and presence of technically capable NGOs.

**In 2004, the Government and donors spent about US\$52 million on rural primary education.** The Government has made significant efforts to increase the supply of primary education in rural areas. Despite this investment, incomplete schools are still more frequent in rural than urban areas and the MOE continues to have difficulty retaining rural teachers and rural children are less likely to receive textbooks. School lunches provide an incentive for families to send their children to school, but their coverage is limited, costs can be significant depending on level of benefit and there is evidence that the poorest households are less likely to receive them. The MOE is also attempting to address demand-side factors by diversifying the educational offerings, including instruction in Arabic in certain regions.

**Given its transversal nature, many ministries and agencies are involved in activities to generate employment, but programs that specifically seek to create jobs amounted to about US\$ 4 million in 2004.** These are all fully domestically-financed and most have been created within the last few years as the pressure to address employment, particularly among youth, have increased. There is little systematic attention to the creation of temporary employment through public works and infrastructure. However, a review of the targeting of several mutli-sectoral local development projects found that programs like AFDS and PNIR have been effective at channeling resources to small-scale infrastructure in the poorest rural communities.

**In terms of developing savings and credit mechanisms, more Government efforts have sought to use existing MFIs to channel subsidized credit to specific groups.** This may work at cross purposes with the objective of building sustainable financial services for rural areas. The Government invests little in direct support to the development of the industry, though donors have made substantial direct investments.

### **Study Recommendations**

**The PRSP and sectoral policies identify main risks facing rural Senegal.** But, there has been less attention to whether programs and expenditures line up with these risks, who benefits and the impact on reducing risks. It is important for policymakers to identify the risk being addressed as well as the justification for intervention. Does the mechanism proposed adequately address the risk? Who is covered or excluded? How much prevention, mitigation or coping is 'bought' with this public spending?

**Recommendations to enhance the efficiency and effectiveness of response to natural disasters center on integrating disaster responses and better use of early warning systems.** Responses to risks tied to the person need to be integrated with response to risks tied to production to improve overall coherence. Reaction time and cost can be reduced through early warning systems, including clear guidelines on responsibilities. Methodologies for estimating damages should be systematically applied to better identify those affected and structure a response. And, the high cost of coping with natural

calamities (for example locusts in 2004) justifies a greater investment in the prevention of shocks.

**The core challenge for extending and improving safety nets and social assistance is to create mechanisms tied to programmatic objectives to reduce vulnerability.** This involves the consolidation of the various transfers to vulnerable groups (women, elderly, disabled etc.) into a coherent set of interventions and a transition from the current ‘unconditional transfer’ mode to a tighter focus on the truly vulnerable, use of improved targeting tools and more systematic monitoring of outputs and impacts.

**The central role of the State as ultimate risk management mechanism for rural production poses several problems, including fiscal sustainability, moral hazard and overall efficiency.** As a Sahelian country with 95% of land under rain-fed agriculture, there are three main strategies for mitigating the climatic risk: diversification, irrigation, and non-farm employment. Better management of agricultural risks can be achieved through (a) the prevention of shocks through developing irrigation, including small scale groundwater irrigation in the Groundnut Basin, and facilitation of access to appropriate technologies; (b) recourse to private sector services to manage the credit securization funds; (c) investigation of the applicability of agricultural insurance instruments, like weather-indexed crop insurance; (d) reconsideration of the policy of blanket rural debt forgiveness; and (e) development of better informational tools to underpin agricultural risk management.

**For education, addressing rural risk requires demand-side strategies as well as continuing the good momentum in building and staffing rural schools.** Expansion of school lunches may be an effective strategy, as well as the diversification of educational programs relevant for rural populations, including language of instruction and local curriculum concerns. Options to address the trade-offs parents face between farm labor, and agricultural cycles in general, and schooling will need to be explored. And, the school-based health program requires better rural coverage oriented to critical rural health risks.

**Health policies can boost prevention of critical rural health shocks through:** (a) an expansion in the presence of midwives at the health post level; (b) investing in better community-level services, including outreach equipment and materials to reinforce the referral system; (c) ensuring that proposed incentive system for workers is effectively implemented to create more stable staff in rural areas; (d) international experience with fee waiver programs should be consulted to structure the proposed exoneration of fees; (e) to prevent malaria through greater use of bed nets, the full force of rural associations should be enlisted, including associations who have more village presence, the social marketing strategy reassessed, and an early warning system installed in the North; (f) effective models of interventions to prevent malnutrition should be mainstreamed and scaled-up; (g) HIV-AIDS efforts should be targeted to specific risks and characteristics of rural populations and treatment models diversified to allow greater access by rural residents; and (h) community-based health insurance schemes expanded.

**The biggest gaps in government policies and expenditures are for rural income diversification and expanded financial services.** While most attention to date has been on improvements within agricultural production, there has been relatively less attention to diversifying to non-agricultural sources of rural income. To enhance income diversification, a greater employment focus on rural public works and infrastructure development is needed to help the poor cope with shocks and agricultural cycles. In addition, an evaluation of the lessons learned from income-generating projects in rural areas is urgently needed to better orient the vast array of projects and expenditures to this end. Expansion of savings and credit mechanisms is crucial. Existing practices of subsidized credit lines need reconsideration since they make MFIs more vulnerable to delinquency, erode the credit culture, and distort the market for sustainable interest rates. Options to promote expansion of MFIs into rural areas, drawing on international best practice and country experience, should be analyzed. The Government should also explore avenues to optimize the impact of remittances. The Post Office and MFIs will be key points of service to pay out remittances, although Western Union and others also pursue links to retail networks (shops, pharmacies, gas stations, etc) and this could be explored further. Competition will help reduce the fees for money transfers.

**Looking at risks from a multi-sectoral perspective helps identify vicious cycles that will require collaboration between sectors.** The revision of its Poverty Reduction Strategy Paper and development of a National Social Protection Strategy in the coming months affords the Government an opportunity for making these linkages more explicit. This is also an opportunity for redressing geographical imbalances through the scaling up of public investments and expenditures in rural areas. The transition to more sophisticated risk management instruments is an integral part of the development process. Enhancing rural households' ability to prevent, mitigate the impact of or recover from the frequent shocks they face will be a key determinant in Senegal's attainment of the MDGs.

## CHAPTER I: Objectives and Context of the Study

### Conceptual Background

1. **Despite relatively robust economic growth since the mid-1990's, the development of Senegal's rural areas continues to lag further behind,** hindered by structural vulnerabilities, unequal access to basic public and private services, and a limited range of strategies to prevent, mitigate and cope with the risks faced by rural households. Reducing vulnerabilities of the rural population is a key development challenge in the medium-term and central to Senegal's ability to meet the MDGs.

2. **Rural areas are exposed to a variety of shocks that impede households from accumulating assets and human capital to help them rise out of poverty.** Covariate shocks that affect the whole community or country, such as drought and commodity price shocks increase income volatility. Idiosyncratic (household-level) shocks include health crises, life-cycle events associated with birth, old age and death, social risks associated with crime, and economic risks of business failure or loss of migrant remittances. Vicious cycles between these risks heighten vulnerability. The multi-sectoral nature of the issue requires an integrated perspective to better manage risks in rural Senegal.

### Definition of Vulnerability, Social Risk Management and Social Protection

3. **Vulnerability is defined in terms of particular risks and exposed populations.** Vulnerability analysis seeks to identify the likelihood that someone, whether poor or not, will experience a significant loss in welfare as the result of a change in circumstance (or shock). This looks both at the nature of the forces acting upon a person's welfare and the underlying ability to protect themselves from the risks they face.

4. **Poverty and vulnerability are intertwined.** Being poor increases vulnerability by the very nature of limited assets, less recourse to savings and borrowing in times of stress, reduced human capital, and less income to pay for essential services. Vulnerability in turn reinforces poverty. Households more likely to experience shocks to income are more likely to be poor. Poverty and risk both impact on households' abilities to improve their well-being in the future.

5. **The poor are most exposed to a broad range of risks and have the fewest instruments to deal with these risks.** With precarious underlying health conditions, marginal land and less physical and financial access to social and economic services, the rural poor often experience irreversible effects from even small shocks to their consumption and well-being. While the patterns are different across countries, the poorest households struggle most with shocks, adopting coping strategies which are costly in terms of both short-term and long-term well-being. Shocks may create poverty traps that militate against the accumulation of human and physical assets by the poor and result in household decisions about consumption and investment that undermine the foundations of future economic growth.

6. **A basic categorization of risk includes:**

- (a) Natural risks: drought, floods, land degradation etc.
- (b) Risks to human capital (health and education accumulation): illness, injury, accidents, disability, epidemics (e.g., malaria), school drop-out etc
- (c) Life-cycle risks: birth, maternity, old-age, family break-up, death, etc.
- (d) Social risks: crime, violence, theft, social upheaval, etc.
- (e) Economic risks: unemployment, harvest failure, business failure, resettlement, output collapse, balance of payments shock, financial crisis, currency crisis, etc.

7. **Social risk management presents a framework for identifying the appropriate risk prevention, mitigation and coping strategies to minimize the adverse impact of shocks.**<sup>1</sup> Looking at poverty reduction not only as a process of accumulating stocks – of wealth, education, health, savings – but of addressing key risks to the process of moving out of (or avoiding moving back into) poverty, leads to an analysis of strategies to prevent, mitigate or cope with those risks. Prevention strategies reduce the probability of a downside risk occurring. Mitigation strategies decrease the potential impact of a future downside risk. Coping strategies seek to relieve the impact of the risk once it has occurred. Risk management instruments may be informal (family or social group based), market-based (like private insurance), or public arrangements. Table 1 provides a categorization of social risk management approaches along the continuum by type of provider.

**Table 1: Examples of Social Risk Management Instruments**

	<b>Informal</b>	<b>Market-Based</b>	<b>Public</b>
Risk Prevention	Drought-resistant crops Hygiene for disease prevention Proper feeding and weaning Flood control Condom use/abstinence/fidelity	Purchase of bed nets Private investment in irrigation Investments in fencing to prevent theft	Disease and pest prevention Flood control Policing Preventive health programs Expansion of access to education Sound macroeconomic policies
Risk Mitigation	Investment in social networks (reciprocal gift giving, membership in social and religious organizations) Employment diversification Holding of real assets (livestock, gold)	Crop insurance Microfinance Health & life insurance crop diversification ; Diversification of financial assets Financial savings	Social security Support for extending financial markets to the poor Support for permanent job creation Disability policies Protection of property rights
Risk Coping	Sale of assets Reduced food intake Withdrawal from school	Selling of financial assets	Labor intensive public work Social assistance Disaster relief Curative health services

Source: Builds from Holzmann 2001

8. **Social risk management measures are public interventions to assist individuals, households and communities better smooth income and consumption cycles and lower the likelihood of devastating loss of welfare and to provide support to the critically**

<sup>1</sup> (Holzmann and Jorgensen, 1999 and 2001, Holzmann 2003).

**poor.** This is a broad definition and encompasses programs, like flood control and malaria prevention. Such interventions are not commonly thought of under the narrower categorization of social protection programs as pensions, social security, insurance and risk pooling, labor market interventions, social assistance and safety nets. This paper adopts the broader definition since issues such as access to preventive health care or decreasing vulnerabilities of agricultural production are critical in rural areas.

### **Social Risk Management within Senegal's PRSP**

9. **Senegal's PRSP 2003-2005 acknowledges the essential vulnerabilities of rural populations.** Of the three main pillars of the PRSP, the 'wealth creation' pillar calls for reducing vulnerabilities in agriculture through rural water management, broader access to land for vulnerable groups, legal reforms and diversification of income sources, as well as better animal health control and access to financing for livestock producers. The PRSP also seeks to expand rural savings and credit mechanisms and support employment through labor-intensive public works. The 'capacity building and promotion of basic social services' pillar emphasizes basic education for the most underprivileged strata of society and reduced disparities between urban and rural areas, while improving quality overall. In health, provision of sufficient infrastructure, reduced expenditures for the poor, increased recourse to health insurance and increased prevention through community-based approaches are envisioned. Investments in water, transport and environmental quality will further improve health and human capital outcomes. Within 'protection of vulnerable groups', safety net and social assistance measures are framed in terms of specific vulnerable groups, including children at risk, women, the disabled, elderly, displaced populations, unemployed youth, slum dwellers and the rural poor. Better targeting and greater emphasis on community-level delivery mechanisms is a priority.

10. **Senegal's first annual PRSP Progress Report for 2003 reported broad progress in its PRSP implementation, but also a need to reinforce actions for vulnerable groups, where little had been accomplished.** The Government has created wealth with sound macroeconomic policies, improvements in the investment climate, and progress in long overdue structural reforms in the groundnut and electricity sectors. Human capital has also received substantial attention through the implementation of reforms aimed at strengthening public expenditure management and implementation capacity for delivery of core social services. However, improvements in the living conditions of vulnerable groups have been less evident, with few of the planned priority investments in this area carried out.

### **Objectives of the Study**

11. **The main objective of the study is to provide analytical support to the Government of Senegal in the design and implementation of policies to reduce the vulnerability of the rural poor.** The study is designed to provide inputs into the development of the national social protection strategy and of the country's second Poverty Reduction Strategy for 2006-2009, and more generally, to inform policies and programs in the rural areas. The particular focus on rural areas and the poorest segments of society will help redress some of the existing imbalances observed in sectoral strategies and public expenditures and it is in the countryside that it will be most difficult to meet the MDGs.

12. **The study seeks to answer the following key questions:**

- (a) What are the main risks and shocks facing rural households?
- (b) What are the principal characteristics of key vulnerable groups?
- (c) What are the existing risk management strategies used by rural households to prevent, mitigate and/or cope with vulnerability and income variability?
- (d) What is the current strategy and level of Government effort to reduce rural vulnerabilities, including scope, coverage, targeting and effectiveness of programs?
- (e) And what policy reforms or public expenditures should be prioritized to best increase resilience to risk for rural populations

13. Regarding Government interventions, the study will review public policies and programs considered important for social risk management in rural areas. These are: (i) social assistance and safety nets to vulnerable groups, including food aid, child labor and other programs for children at risk, programs for the elderly, the disabled, youth, women and other targeted groups; (ii) disaster management, including drought, flood and pest control; (iii) investments in managing critical agricultural risks to prevent shocks as well as support to farmers affected by natural and economic risks; (iv) efforts to manage critical health risks, including malaria, maternal health, malnutrition and HIV-AIDS prevention; (v) investments in reducing critical educational risks, including provision of classrooms, teachers and school lunches; (vi) labor market interventions, such as job creation via credit, training and public works; (vii) savings and credit, including expansion of financial services to rural areas; (viii) social insurance, including health insurance and other forms of risk pooling; and (ix) expansion of service and infrastructure coverage to remote areas, including the targeting of investments to the most vulnerable communities.

### **Data and Methodology**

14. **Several existing data bases were exploited to measure vulnerability, frequency of shocks, and overall profile of the conditions facing rural populations (Annex A).** The main drawbacks of the available data are: (a) the absence of national household survey panel data to permit better understanding of the changes in vulnerability over time; and (b) none of the data sets were developed specifically to assess risks and shocks. Nonetheless, they provide enough insights into the magnitude of the main risks in rural Senegal to develop a reasonably sound profile. Expenditure information was collected directly from ministries and program managers. Although beyond the scope of the study, some supplemental information was gathered from NGOs.

### **Outline of the Report**

15. Following this introductory section, Chapter 2 develops a profile of rural vulnerability. Chapter 3 reviews informal and market-based risk management instruments used by rural households. Chapter 4 reviews the public sector response, including an analysis of key programs and expenditures to assist rural households. Chapter 5 concludes with a set of recommendations to decrease and better manage rural vulnerability and hence build more sustainable poverty reduction.

## CHAPTER II: Risks and Vulnerable Groups in the Rural Areas

### *Core Questions:*

*What are the principal characteristics of Senegal's rural population? Who are the key vulnerable groups? What are the main risks and shocks facing rural households? How do they interact across sectors and communities to heighten vulnerability?*

### A. Characteristics of the Rural Population and Determinants of Rural Poverty

#### Overview of Rural Population

16. **Out of a national population of 10 million, about 6 million Senegalese live in rural areas.** Over two million people live in the greater Dakar urban area. Thies, Ziguinchor and Saint Louis also have a sizeable urban population (Table 2). The rural population makes up more than 80 percent of the inhabitants in the rest of the country. Diourbel and Kaolack, in the Groundnut Basin have the greatest numbers of rural poor.

**Table 2 : Senegal Population and Number of Rural Poor, 2002**

Region	Population, ('000)	% Rural	Total Rural ('000)	Total Rural Poor ('000)
Dakar	2,267	3.3	75	43
Diourbel	1,050	84.0	882	651
Fatick	613	87.4	536	295
Kaolack	1,066	76.5	816	613
Kolda	836	88.1	737	561
Louga	678	81.4	551	255
Matam	423	86.1	364	204
Saint Louis	689	63.5	437	246
Tambacounda	606	83.1	503	330
Thies	1,290	56.5	729	458
Ziguinchor	438	56.4	247	182
Total	9,957	59.0	5,877	3,867

*Source:* Senegal Population Census 2002, Direction of Statistics, Ministry of Finance

#### Profile of Rural Poverty

17. **Although economic growth in recent years has reduced poverty in Senegal, these gains have been less for rural populations.** In 2002, 57 percent of the population lived below the poverty line.<sup>2</sup> Poverty is more widespread in rural areas, where two-thirds are poor (Table 3). Poverty in rural areas declined by six percentage points since 1994, compared to a 14 percentage point decline for Dakar residents over the same period. The poverty gap is larger in rural areas, meaning the rural poor tend to be further from the poverty line, and poverty is more severe. The Gini coefficient<sup>3</sup> for inequality indicates that income is distributed relatively more evenly in rural areas (0.30) than in urban areas (Dakar

<sup>2</sup> The poverty lines are defined according to the cost of a basket of basic needs. Three different poverty lines were used to account for the differential cost of living in Dakar, other urban areas and rural areas.

<sup>3</sup> *Gini coefficient of inequality.* The coefficient varies between 0, which reflects complete equality, and 1, which indicates complete inequality.

– 0.37 and other urban – 0.35). Income inequality for individuals worsened between 1994-2001 nationally and in both urban and rural areas.

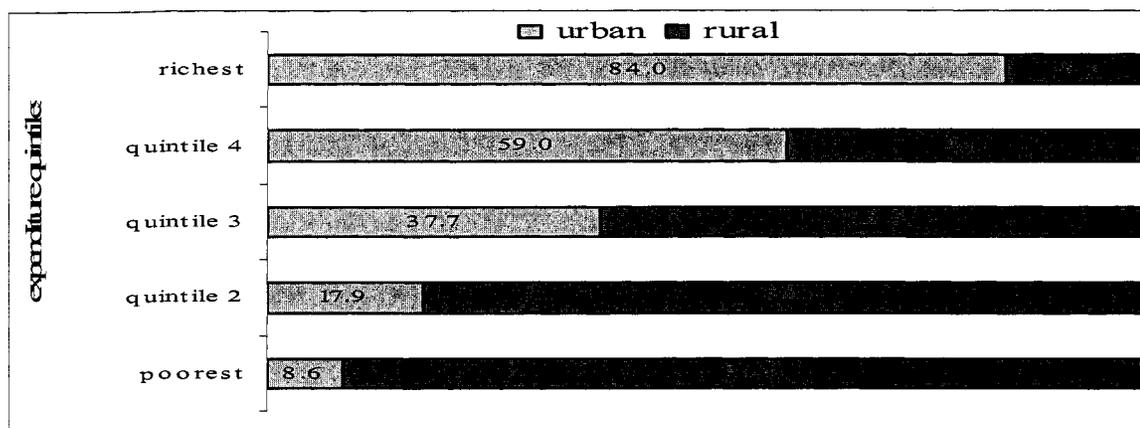
**Table 3 : Poverty and inequality in Senegal, 1994 - 2002**

	Household level				Individual level			
	National	Dakar	other urban	Rural	national	Dakar	other urban	rural
	1994-95							
Incidence of poverty (%)	61.4	49.7	62.6	65.9	67.9	56.4	70.7	71.0
Depth of poverty (%)	20.5	15.4	21.4	22.3	23.6	17.7	24.4	25.3
Poverty severity (%)	9.1	6.4	9.5	10.0	10.6	7.4	10.8	11.7
Gini Coefficient	38.6	45.8	39.7	31.7	32.6	36.7	34.0	29.4
2001-02								
Incidence of poverty (%)	48.5	33.3	43.3	57.5	57.1	42.0	50.1	65.2
Depth of poverty (%)	14.8	9.5	13.4	17.8	18.3	12.0	16.1	21.4
Poverty severity (%)	6.2	3.7	5.7	7.5	7.9	4.7	6.9	9.4
Gini Coefficient	37.4	41.9	38.3	29.9	34.2	37.3	35.2	30.1

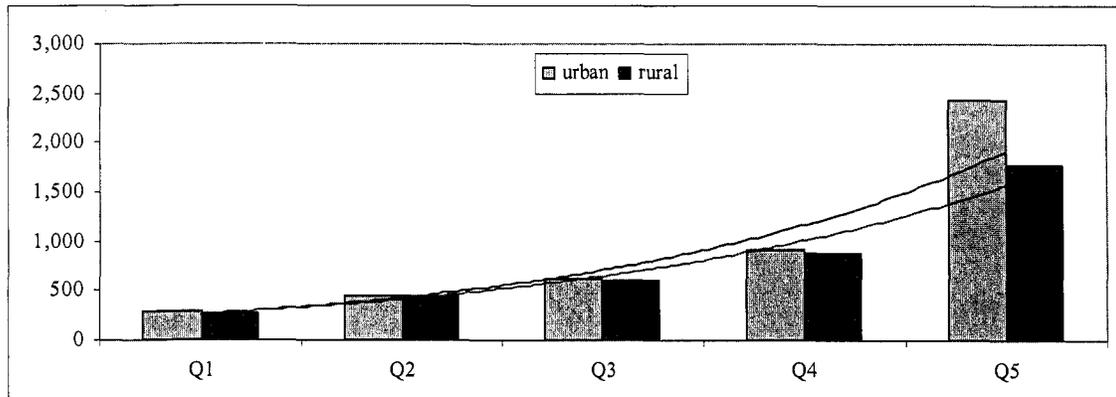
Source: Senegal Poverty Assessment, World Bank 2004 based on ESAM I (1994-95) and ESAM II (2001/2002)

18. **Poverty differs across rural regions in Senegal.** Rural poverty is most widespread in Ziguinchor, Kolda, Diourbel and Kaolack, at above 70 percent, and lowest in rural Louga (46%), Fatick (55%), Saint Louis (56%) and Dakar (58%). In just one region, Ziguinchor, the poverty rate is slightly higher in urban than in rural areas (Statistical Annex Table II.a). Despite the greater poverty in rural areas, rural households account for 16 percent of the wealthiest quintile nationwide and these households enjoy consumption levels greater than 60 percent of all urban households (Figures 1 and 2). On the other end of the income spectrum, rural households make up 91 percent of the poorest quintile. These variations in rural poverty are important, since not all rural households are poor and some have found effective strategies for economic growth within this environment.

**Figure 1 : Rural-Urban Distribution among poverty quintiles (%)**



**Figure 2 : Per-Capita Daily Expenditures by quintiles, rural/urban (CFA)**



### Characteristics of the Rural Poor

19. **The rural economy remains largely agrarian, with about 70 percent of rural households engaged in agriculture.** As a subset of this, livestock is important both as the basis of some regional economies and as a household risk management instrument. An estimated 300,000 households are engaged in the sub-sector (cattle and small ruminants). Remittances are an important source of income both for rural and urban households.

20. **There are key differences between the lowest and highest expenditure quintiles in rural areas.** Per Table 4 (next page), poorer households are larger than the better-off ones. Better-off rural households are either less dependent on agriculture in that they are more likely to hold public sector employment or be engaged in services and commerce, or, if engaged in agriculture, have greater concentrations of land and/or animals.<sup>4</sup> Moreover, the rural non-poor have higher quality jobs, with 50 percent reporting permanent employment versus 27 percent of the poorest households. The poor are more dependent on seasonal activities. Polygamous households are more likely to be poor, and households led by a single or widow head less likely. There are no large differences in educational outcomes of heads of households between poor and well-off households, except if they have more than primary level. The percentage of poor households with disabled heads is almost three times higher among poor than better-off households (see Box 1 on most vulnerable groups). In addition, auto-consumption is significantly higher for the poorest quintiles.<sup>5</sup>

<sup>4</sup> Wealthiest quintile households engaged in agriculture have 35 % of holdings over 6 hectares and 37 percent of those between 4-6 hectares. The poorest quintile holds less than 5 percent of the larger holdings. The PSIA survey of producers in the Groundnut Basin confirms this, with 64 percent of revenues of poor households from agriculture versus 40 percent for the non-poor and 28 percent for the wealthiest quintile.

<sup>5</sup> World Bank preliminary estimates (Senegal Poverty Assessment, forthcoming 2005) confirm that rural households with a head who reported owning land had higher levels of consumption (by 68 percentage points for every extra hectare of land) than other rural households. Gains to education were less visible in rural areas, where having a literate household head was associated with a gain in consumption of 16-17

21. The rate of female headed households is quite high at over 50 percent. This is above the Sub-Saharan average of 31 percent and reflects the significant effect of labor migrations, among others. However, rural households headed by women are not more likely to be poor and nationally female households on average actually tend to be less poor than male-headed households. Although the link with poverty is not strong, there are specific issues that face female-headed households in rural areas. For example, with less male labor available, agricultural output risks declining and there may be an increased reliance on child labor. Women face greater restrictions on effective access to land and credit. Moreover, lower literacy rates than male headed households put female-headed households at a disadvantage in terms of access to information on diverse issues.

<b>Table 4 : Rural Household Characteristics by quintiles (in % except indicated)</b>		
	Bottom two quintiles	Top two quintiles
<b>Household size (#)</b>	14.0	10.8
<b>Per-capita expenditure, CFA/day</b>	358.6	1,326.3
<b>Access to land 0 ha</b>	14.0	26.4
1- 2 ha	0.6	1.6
2-4 ha	3.4	3.1
4- 6 ha	3.5	4.3
6 ha et +	77.9	64.3
<b>Livestock None</b>	14.4	18.3
Large animals	10.8	8.2
Small animals	14.9	17.2
Both	59.6	56.3
<b>Head: Married monog.</b>	56.4	59.1
Married polygam.	36.6	29.2
Widow(er)	4.3	6.5
Divorced	1.1	1.6
<b>Female-headed</b>	51.7	51.9
<b>Literacy</b>	26.3	30.6
<b>Education None</b>	88.0	84.3
Primary	9.0	8.1
Secondary	2.2	5.5
<b>Disabled</b>	2.8	1.0
<b>Job Status: Employed</b>	78.3	77.6
Unemployed	5.9	7.4
<b>Employment: Public</b>	0.9	5.2
Private	3.3	2.0
Own-account	95.3	92.0
<b>Activity: Agriculture</b>	79.1	65.9
Commerce	7.7	13.2
Construction)	2.8	2.2
Services	2.3	3.7
Public administration	0.5	4.1
<b>Transport – commun.</b>	1.8	2.6
<b>Job: permanent full-tim</b>	27.2	50.1
permanent part-time	10.7	13.6
Seasonal	59.0	31.9
Daily	1.5	2.7
Other	1.5	1.6
<b>Auto-consumption</b>	11.4	6.7

percent in urban areas but with no gain in rural areas. In addition, in rural areas, monogamous households had higher levels of expected consumption (by 14 to 17 percentage points) than polygamous households.

### Box 1: The Most Vulnerable Groups

Beyond general poverty levels, there are several critically vulnerable populations. Often these groups come from rural areas or are at greater risk by virtue of living in rural areas:

Orphans: Nine percent of Senegalese children aged 0-14 are orphans and 10 percent of 5-14 yr old are fostered (i.e. not orphans but reside in households separate from parents). Children that have lost both parents are six percentage points less likely to attend school full-time and single orphans are 3 percentage points less likely. Female orphans face the highest risk of loss of schooling.

Children in Dangerous or Exploitative Situations: According to various surveys and government estimates about 400,000 children aged 6-18 are exposed to dangerous or exploitative situations:

- 100,000 in onerous family work in agriculture, fishing and livestock,
- 30,000 boys involved in artisan and informal sector activities,
- 50,000 girls (6-18) employed as domestic workers, mostly coming from poor rural area.
- 100,000 children (*talibés*) living away from family mostly involved with coranic schools, or *daara*. A subset of these is made to beg in the streets for long hours and provided little education.
- 100,000 in extreme situations – street children, sexually exploited, in conflict with the law.

Disabled: There are an estimated 120,000 people with disabilities in Senegal. Disabled in rural areas are more likely to be poor, and have less access to specialized equipment or training.

Young Women Giving Birth: Rural women are more likely to marry and bear children at a young age. 9 percent of rural births are among girls 13 – 19 versus 4 percent in urban areas.

*Sources:* “Study on the Practice of Trafficking in Person in Senegal” by B. Moens et al., for USAID .2004; “Orphanhood and Child Vulnerability: Senegal”. L. Guarcello, S. Lyon, F. Rosati, July 2004; Senegal ESAM II; MFSSD Letter of Sectoral Policy 2004.

## B. Access to Critical Infrastructure and Services

22. **In addition to consumption-based measures of poverty, access to basic services is overall lower for rural residents.** Underlying conditions of vulnerability are increased when access to critical basic services is limited. Health shocks are more frequent in the absence of adequate drinking water and sanitation. Long distances to schools and health centers decrease the likelihood of utilization and improvement of human capital stocks. Distance to markets, roads and public transportation reduces economic integration and hampers access to services. For access to roads and markets: 40 percent of rural households live more than an hour-distance from food markets, and a third of rural inhabitants have to walk more than an hour to reach main roads and public transportation. For water, 93 percent of urban and 84 percent of rural households live within a 15 minute walking distance from the nearest water source. However, in terms of quality, over half of rural households get their water from open or unprotected sources, versus 6 percent of urban households. In education, two-thirds of rural children have access to a primary school within reasonable walking distance (under one kilometer), 16 percent walk more than 3 kilometers. And for health services, more than half of rural households live over 3 kilometers from a health post.

23. **However, data suggests that within rural areas, poor households do not necessarily live farther away from infrastructure and services than do better-off households.** The national household survey finds that it is the wealthiest rural households that tend to live the furthest distance from water sources, schools, and health infrastructure (Statistical Annex Table II.b). The PASEC household survey reinforces this in its finding that the wealthiest rural households also lived further from financial services (Statistical Annex Table II.c). This finding must be linked to the spatial structure of land holdings and village settlement patterns, but bears further investigation.

### C. Estimation of Frequency and Severity of Risks and Shocks

24. **The vulnerability of rural populations is related to the risks they face and the underlying capacity to address those risks.** This section assesses the main risks and shocks experienced by rural populations and identifies those that, due to their frequency or magnitude and inter-relationship with other risk factors, pose the greatest challenge for poverty reduction. This includes natural,<sup>6</sup> economic, health, education, and social risks.

#### C.1. Natural Risks and Shocks

25. **Natural risks are intertwined with the agricultural nature of the rural economy and its Sahelian setting.** Cyclical droughts reduce agricultural production and decimate herds. However, the impacts of these shocks vary depending on the agricultural season, the agro-ecological zone (Box 2), the type of crop, and availability of irrigation.

26. **Senegal has about 3.8 million hectares of arable land.** About 2.1 million hectares is under cultivation, of which 95 percent is currently rain-fed agriculture. Half of the land under cultivation is for millet/sorghum, 38 percent for groundnuts, 4 percent in rice paddy, 4 percent in corn, and 1 percent in vegetable production. Irrigation potential exists for 350,000 hectares (less than 10 percent of all arable land), with current levels of irrigation reaching 105,000 hectares (less than 5 percent of cultivated land). Therefore,

#### Box 2: Senegal's Ecological Zones

- The **Senegal River Valley** including the regions of Saint Louis and Matam which has 75 percent of the country's irrigated hectares;
- The **sylvo-pastoral zone** which regroups the region of Louga and the department of Ranerou where livestock is the main activity;
- The **Niayes** zone along the Atlantic coast from Dakar to Saint Louis is oriented to vegetable production (10 % of irrigated hectares);
- The **Groundnut Basin** of Fatick, Kaolack Diourbel and Thies (and Kebemer) where groundnuts, millet/sorghum and corn predominate;
- **Western Senegal** and the upper Casamance with cotton and irrigated agriculture;
- The **lower and mid-Casamance** with rice development (15 percent of irrigated hectares)

<sup>6</sup> Risks of long-term environmental degradation and climate change are outside the scope of this paper.

most agriculture is subject to the vagaries of rainfall in a drought-prone region.

### Rainfall and Drought

#### 27. Rainfall is characterized by wide fluctuations between years.

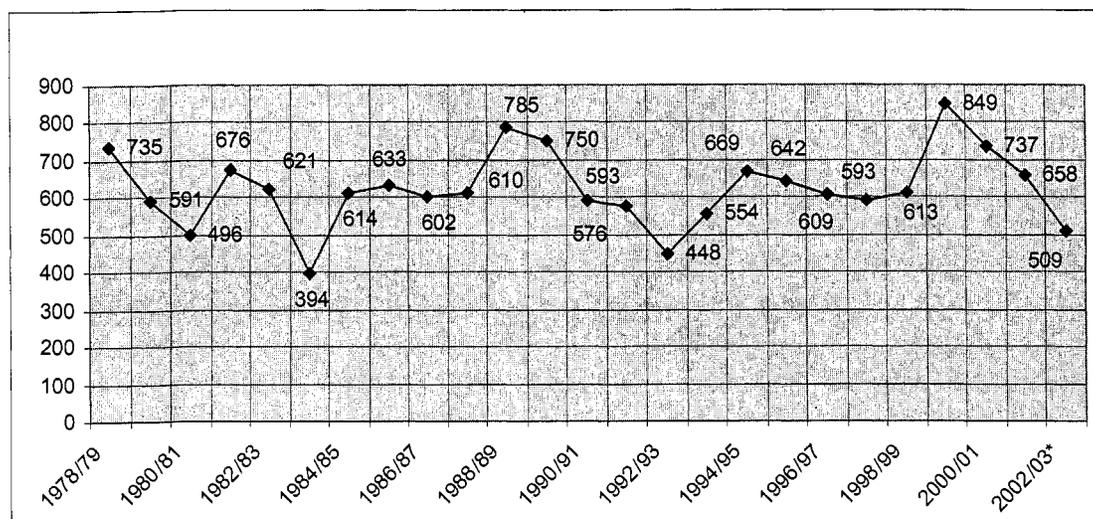
Over the last 25 years, rainfall in Senegal has fluctuated between a minimum of 394 mm and a maximum of 849 mm per year (Figure 3). Only one year out of five is considered a good year for rain, at over 725 mm. Over the last 25 years, apart from five good years, the remainder had low rainfall and/or a bad repartition of rain over time and space resulting in lowered levels of agricultural production. This rainfall irregularity is observed equally at regional levels and varies by climactic zone. In the Southern Casamance, the region with the highest average rainfall at 1100mm, annual precipitation can vary from minus 33 percent to plus 70 percent of the mean (see Statistical Annex Table II.d, Figures II.a and II.b).

Year of Rainfall Shock	Rainfall (annual mm)	% change from annual average	% change ground nuts	% change in millet
1979	591	-20%	-29%	-29%
1980	496	-36%	-24%	-8%
1983	394	-21%	-46%	-28%
1990	593	-22%	-28%	-10%
1992	448	-29%	-27%	-9%
2002	509	-17%	-72%	-13%

*Source: Bank estimates*

Only one year out of five is considered a good year for rain, at over 725 mm. Over the last 25 years, apart from five good years, the remainder had low rainfall and/or a bad repartition of rain over time and space resulting in lowered levels of agricultural production. This rainfall irregularity is observed equally at regional levels and varies by climactic zone. In the Southern Casamance, the region with the highest average rainfall at 1100mm, annual precipitation can vary from minus 33 percent to plus 70 percent of the mean (see Statistical Annex Table II.d, Figures II.a and II.b).

**Figure 3 : Average Annual Rainfall 1978 – 2003 (in millimeters)**



*Source : National Meteorological Department*

28. Over the last 25 years, Senegal has experience six years that could be characterized as major precipitation shocks. These were characterized by late onset of rains, irregularity in spatial distribution, and an early end of the rainy season. These shocks caused significant reductions in agricultural yields (Table 5). Ground nut yields fell to between 700-900 kg/ha versus 1,100 kg/ha during good harvest years. Production shortfalls varied between 145,000 tons and 570,000 tons (between CFA17.4 billion and CFA 68.4 billion revenue losses at CFA 120kg average price) depending on the year. The pattern for millet/sorghum is much the same, production decreases of 80,000 to 200,000 tons (CFA12 to 30 billion revenue losses at CFA150/kg average price). An

improvement of average annual precipitation of 1 mm increases by 1 kg/ha groundnut yield and 0.4/kg for millet. However, the rainfall levels only explain 39 percent of the variability in groundnut yields. Additional factors include degradation of soil quality, timing of rains, use of inputs and other shocks correlated with irregular rains such as parasites and locust invasions.

29. **The most recent rainfall shock, in 2002, was a difficult year both for the amount and the timing of rainfall.** This led to a drastic decrease in groundnut, cotton and *niébé* yields. Coping crops used traditionally as diversification suffered losses as well, including watermelons down 7.5 percent and sesame down 26 percent. An overall decrease of 18 percent in basic grain production aggravated the structural food deficit in the country and caused the Government to carry out extensive food assistance and safety nets for farmers (reviewed in Chapter IV). In fact, total groundnut production, at 265,000 tons, was the lowest recorded since independence. This shock also affected livestock, with a 5 percent reduction in stocks. Overall, the economic losses caused by the out-season rains of 2002 are estimated at 31 billion CFA (about \$62 million dollars).

30. **Rainfall variations affect most rural households, and the poorest suffer the largest welfare losses.** 85 percent of rural households responded that they had experienced one or more bad harvests over the last 10 years (Statistical Annex Table II.e).<sup>7</sup> Table 7 shows production changes for producers in the Groundnut Basin 2000-2004 by household poverty level and consumption quintile. In 2002, all poverty levels experienced production decreases. However, as the poorest households are more dependent on agricultural production alone for income, and in fact they produce a greater amount of groundnuts, the absolute economic impact of the 2002 shock was much greater on the poorest households.

**Table 6 : Annual Groundnut Harvest (in kilos) per Household, by poverty level**

Agricultural Year	Non Poor	Poor	Q1	Q2	Q3	Q4	Q5
2003-2004	948.6	2,932.5	3,731.9	2,112.5	1,224.6	804.6	838.4
2002-2003	915.9	1,968.7	2,068.7	1,856.1	1,324.5	731.3	632.5
2001-2002	1,613.8	2,961.7	3,607.1	2,264.8	1,651.1	1,325.3	2,124.1
2000-2001	1,509.0	3,024.8	4,040.9	1,876.8	1,797.3	1,526.5	1,233.0
<i>Source: PSIA Groundnut Basin Survey</i>							

## Floods

31. **Despite the overall fragility of precipitation in Senegal, certain localities are adversely affected by floods.** Over the last ten years, several areas suffered from floods caused both by localized intense rains and river overflows, concentrated in Saint Louis, Matam, Louga, Tambacounda and Kolda. These floods harm hundreds of thousands of

<sup>7</sup> While residents of Dakar were not affected by bad rain years, 37 percent of households in other urban said they were affected by at least one bad harvest, showing the urban linkages of the agricultural economy.

people, causing deaths, displacement, destruction of houses and other infrastructure, and loss of crops and animals. Characteristics by region include:

- (a) In Saint Louis and Matam floods are recurrent along the Senegal River. Since the early 1990s, there have been important floods in 1994, 1999 and 2003, with particularly devastating effects in 1994 and 1999. The floods in 1999 lasted until mid-October in many areas, killing people and destroying roads, houses, crops, and other assets, affecting an estimated 100,000 residents. 70 percent of the irrigated plots (*périmètres irrigués villageois PIV*) in Podor were adversely affected. In addition to crop loss and destruction of houses, the flooding promotes the infestation of aquatic plants (Dia 2004 and Fall 2000).
- (b) Flooding in Kolda varies by department. In 2003, heavy rains combined with lack of drainage infrastructure affected populations who have increasingly settled in potential flood zones along the Gambia, Casamance and the Kayanga rivers.
- (c) In Tambacounda, during July-October 2003, strong rains exacerbated overflow of natural storage areas and the resulting flooding caused extensive damage to banana plantations. Seventy percent of the 1,000 hectares were destroyed. The floods affected an estimated 22,000 hectares of cultures under production by 3,200 producers, for an estimated economic cost of 3.6 billion CFA.
- (d) In the Saloum Delta region, two forms of local flooding are common, one from rains and the other from penetration from the sea, resulting in erosion of sandy river banks, isolation of populations, and the salinisation of arable lands.

### **Locusts, Pests and Parasites**

**32. Senegal periodically experiences locust swarms, most recently in 1988 and 2004.** Locust invasions, which have been present intermittently in the Sahel for thousands of years, present a high risk to agricultural production and revenue. During the most recent episode, according to an FAO evaluation (FAO 2004), out of 11 regions in the country, seven were adversely affected by the locusts – Saint Louis, Diourbel, Thies, Matam, Fatick, Louga and Dakar. The loss of production in basic grains averaged 22 percent, including 34 percent for millet (compared to average of previous five year) and 30 percent for sorghum. Overall loss of grain production was over 45,000 tons. The region of Saint-Louis in the north accounted for half of total losses. Half of grazing pastures in the north (Louga, Saint-Louis, Matam) and 80 percent in Diourbel were devastated. Locust damage in 2004 did not significantly affect the main agricultural land in the southwest.

**33. An estimated 124,000 households were affected by the 2004 invasion, or 20 percent of all rural households.** Unlike general drought, locust damage is geographically sporadic, even within regions affected. Where the swarms land and feed, crop loss can be total. Households affected were in the regions of Matam, Thies, Diourbel, Saint Louis and Louga (Table 7). Production losses are estimated less than 50,000 tons (about CFA 7Bn at CFA150/kg average farm gate price). The damage seems to have been mitigated somewhat thanks to the early engagement and resources committed to the locust fight campaign.

**Table 7 : Estimated Losses in Grain Production Due to Locusts, 2004**

Affected Region	Av. annual production 1999-2003	Losses due to locusts (tons)	%	# Households affected	Tons per household
Thiès	53 112	11 685	22%	22 239	0.52
Diourbel	57 038	14 830	26%	22 149	0.67
Saint-Louis	1 504	752	50%	19 439	0.04
Louga	36 412	14 565	40%	14 595	1.00
Matam	18 699	2 992	16%	42 853	0.07
Fatick (Gossas)	26 665	2 666	10%	2 164	1.23
<b>Total</b>	<b>193 430</b>	<b>47 490</b>	<b>25%</b>	<b>123 439</b>	<b>0.38</b>
<b>Total Senegal</b>	<b>1 108 300</b>	<b>47 490</b>	<b>4.3%</b>		

*Source: Rapport FAO/PAM/CILSS, December 2004*

34. **Other endemic infestations affecting agriculture and livestock are less spectacular but nevertheless cause significant production losses.** For crops, the main risks include: (a) grain-eating birds (*quelea-quelea* and *passer luteus*) that damage harvests in the Senegal River Valley; (b) grasshoppers that attach to young sprouts at the beginning of the rainy season (*oedaleus senegalensis* notably), especially in the regions of Kaolack, Tambacounda, Fatick, Diourbel and (*Oedaleus nigeriensis* and *Zonocerus variegates*) in Kolda and Ziguinchor; (c) other insect swarms (*amsacta moloneyi*) in the Kaolack, Louga and Diourbel regions that attack niébé, groundnuts and maize; (d) floricoles insects (cantharides) that eat the young buds on millet in the Groundnut Basin area; (e) Aphides (*aphis craccivora*) which transmit leaf curl virus to groundnut and niébé; and (f) white fly (*bemisia tabaci*) that affects cotton production.

35. **In general, prevention and treatment of parasitic infestations remains limited.** Not counting 2004 which was an exceptional year due to the mobilization around emergency locust operations, an average of 428,000 hectares are inspected each year, or about 20 percent of land under cultivation. Over the last six years, 63 percent of fields inspected were infected and 53 percent of those fields found to be infected were treated (Statistical Annex Table II.f).

### Threats to Livestock

36. **Animal production is threatened by drought and other climatic and pest/parasitic effects on pastures.** Loss of grazing pastures translates into the sale of animals at lower prices and changes in transhumance patterns that can cause weight loss to animals of up to 30 percent. It is difficult to estimate the overall losses as herders may move animals over national boundaries, sell off at lower than expected prices, etc.<sup>8</sup> Per Table 8, with the 2002 drought there was a reduction in the number of cattle, sheep and goats, but family poultry increased, consistent with their role in household coping strategies. However, it is worth noting that the effect of drought on livestock production is much smaller than on agricultural production, hence the important role of livestock as a hedge against consumption loss in the face of drought.

<sup>8</sup> Moving further afield in search of pastures also causes herder families to pull their children out of school.

**Table 8 : Evolution of Animal Stocks 1999 - 2003 (in '000 heads)**

Year	Cattle	Sheep	Goats	Pigs	Horses	Donkeys	Camels	Poultry-Industrial	Poultry-Family
1997	2 898 000	4 198 000	3 578 000	191 000	444 240	375 000	4 000	4 956 000	13 118 000
1998	2 912 490	4 344 930	3 703 230	213 919	445 128	375 749	3 960	5 287 000	15 055 283
1999	2 927 052	4 497 003	3 832 843	239 590	446 018	376 501	3 920	4 710 000	11 276 779
2000	2 986 000	4 542 000	3 879 000	269 000	471 000	399 000	4 000	5 595 000	18 900 000
2001	3 061 000	4 678 000	3 995 000	280 000	492 000	407 000	4 000	6 115 317	19 542 600
2002	2 996 937	4 540 380	3 899 972	291 450	496 095	399 547	4 000	5 174 255	20 207 048
2003	3 017 513	4 613 508	3 968 737	303 368	501 225	399 547	4 008	5 261 866	20 813 260

Source : Rapport sur la Situation Economique et Sociale du Sénégal DPS 2003

37. **Major diseases include plague, foot and mouth disease, Newcastle disease, horse plague, and botulism (Statistical Annex Table II.g).** The Ministry in charge of Livestock tracks animal diseases and promotes vaccinations. In 2002 (most recent data), MAE reported about 1,300 animal deaths, but many losses go unreported. In the PASEC survey, three-quarters of rural households cited livestock loss over the last 10 years, with epidemics as the most frequent cause, followed by theft and then drought. (Table 9).

**Table 9 : Frequency and cause of livestock depletion, 2002 in %**

	Rural	Dakar	Other urban	Total
<b>Households with livestock loss in last 10 years</b>	73.3	11.8	35.3	53.0
Reason cited :				
Loss following an epidemic	52.3	23.3	33.4	48.1
Theft, loss	21.5	27.9	35.8	24.1
Drought/ natural calamity	16.0	11.6	15.8	15.8
Significant sale	9.1	23.3	9.5	9.7
Other	1.0	14.0	5.3	2.3
Total	100.0	100.0	100.0	100.0

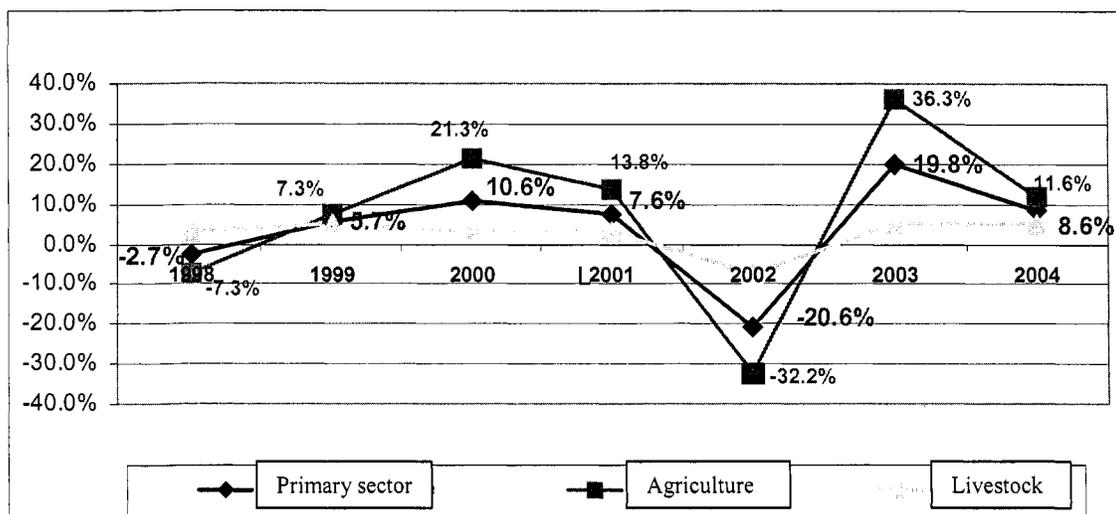
Source: PASEC data set

### Effect of Agricultural Shocks on the National Economy

38. **Since the devaluation of the CFA in 1994, the Senegalese economy has regained dynamism, registering an annual growth rate of over 5 percent, although weather-based shocks create a drag on potential growth.** GDP growth was interrupted in 2002, when the economy experienced a slowing down of growth to 1.1 percent. This downturn was explained in part by the drop in agricultural production in large part due to poor precipitation, off-season rainfall and flooding along the Gambia River. Figure 4 traces the evolution of economic growth in the primary sector from 1998 to 2004. The restoration of economic growth to 6.3 percent in 2003 and 6.1 percent in 2004 was supported by growth in the primary sector of 20 percent in 2003 and 9 percent in 2004.<sup>9</sup>

<sup>9</sup>The tertiary sector of the economy accounts for over half of GDP. The primary sector accounts for under 20 percent of GDP and this percentage has fallen slightly over time. However, there are strong linkages between agriculture and activities in the secondary (processing) and tertiary (commercialization) sectors. A 1% increase in agricultural growth results in 0.81% and 0.92% increase in livestock and edible oils sub-

Figure 4 : Primary Sector Growth Rate, 1998-2004



Source: Ministry of Finance, Bank estimates

## C.2. Economic Risks and Shocks

39. **Economic risks in the rural areas are related to risks of an open economy, risks tied to production and commercialization systems, and income and purchasing power risks.** While unemployment is a major economic risk in urban areas, this is not as relevant for rural Senegal where most of the labor force is self-employed or engaged in informal or part-time activities to diversify income. Underemployment and low revenues from productive activities are more important than outright job loss.

### Open Economy Risks

40. **Senegal is an open economy and its rural producers face risks from exchange rates and world price fluctuations.** Agriculture accounts for 20 percent of total exports, comprised principally of groundnut products (crude oil and cakes, accounting for half of total agricultural exports), cotton (raw and woven products) and to a lesser but growing extent horticulture. Groundnut production is stagnant and exports have decreased over time partly because of poor political management of sub-sector reforms since the mid-90s, as well as depletion in the quality of seeds and soil. The tariff structure that provided incentives for local industry to import and process cheaper edible oil categories for domestic markets, combined with downward trends in world prices over the last decade also played an important role in the decline. Until recently, government pricing policy did not transmit world market signals and producers were offered stable revenue, although guaranteed prices were well below the market price. Reforms undertaken since mid 90s promoted market-led prices negotiated between producers and processing firms.

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sectors respectively in the same year, 0.51% and 0.69% positive effects the following years in food processing and trade sub-sectors respectively.

41. **In terms of exchange rate risks, the main shock was the 1994 devaluation of the CFA.** A recent World Bank study on the effects of the 1994 devaluation found that virtually all segments of the population, including the rural poor, benefited from improvements in standard of living following devaluation, but the growth was not strictly ‘pro-poor’ as gains in the upper half of the income distribution were greater. The slower economic growth of the rural economy following the devaluation was due to (a) bad weather; (b) the devaluation-led public investment boom that primarily benefited the manufacturing and service sectors; and (c) a drop in the real value of crops after the devaluation (Azam, Dia, Tsimpo and Wodon 2005).<sup>10</sup>

### **Risks Tied to Production and Commercialization Systems**

42. **The system for financing and commercializing agricultural production, particularly of groundnuts, has undergone structural reforms in recent years.** Supply of inputs and commercialization of agricultural products have been increasingly liberalized over the last 20 years. For the groundnut sector, the ongoing reforms accelerated in 1997 resulted in the suppression of SONAGAINES in 2001 and the establishment of a direct delivery system, without any intermediaries or brokers between the producer and the milling company. Even though this new system is generally more efficient than direct Government involvement, the transition has caused dislocations as markets adjust.

43. **Lack of access to seeds, and to lesser extent fertilizer, is a critical issue and the by far the most significant reason for reductions in land area under cultivation.** In the PSIA survey of the Groundnut Basin producers, 72 percent of non-poor households and 68 percent of poor households that reported reducing the area of land under cultivation cited lack of seeds as the principal reason (Statistical Annex Table II.h). For the poorest quintile, lack of fertilizer was also a significant reason (12 percent of responses). Risks associated with climate were a lesser reason for withdrawing acreage from production. The lack of access to critical inputs stems from difficulties with rural credit markets and changes in the structure of production following the privatization of rural industries.

### **Purchasing Power and Price Risks**

44. **Over the last ten years (1994-2003) agricultural producers of cotton, groundnuts and millet have seen their purchasing power eroded.** The general consumer price index has risen faster than the evolution of prices for main agricultural products (Table 10). Notably, groundnuts and millet have experienced absolute price decreases in recent years. Purchasing power for rice producers has maintained, though they are confronted by strong competition from imported rice of lower quality. Corn producers had strong gains, both in absolute price and purchasing power.

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<sup>10</sup> Aside from movements in the exchange rate, macro-economic risks in the form of increasing world oil prices, will ripple through to affect agriculture both in terms of petro-chemical input costs, as well as processing and transportation costs. World Bank staff estimates indicate that a US\$5 per barrel increase in oil prices above the current WEO projections would cut average annual GDP growth by about 0.6 percentage points during 2005-2010 overall.

**Table 10: Evolution of Purchasing Power (PP) and Price Indexes, 1990-2002**

Year	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002
Millet (CFA/kg)	83	73	80	125	132	126	125	83	83	83	83
Cotton (CFA/kg)	100	100	150	170	170	185	185	185	185	185	185
Groundnuts (CFA/kg)	80	80	120	125	131	150	160	145	145	120	120
Rice	85	85	100	115	90	102	96	101	100	100	100
Corn	74	57	83	120	141	128	132	134	127	154	143
IHPC	73,7	72,5	90,8	97,1	100	102	103	104	104	108	110
ind Millet Purchasing Power (PP)	85,3	76,3	66,8	97,5	100	94	92,2	60,7	60,3	58,5	57
index PP cotton	79,8	81,1	97,2	103	100	107	106	105	104	101	99
Index PP groundnut	82,9	84,2	101	98,3	100	113	119	107	106	85,2	93
index PP rice	128,1	130,3	122,4	131,6	100,0	111,5	103,9	108,3	106,4	103,4	101,0
index PP corn	111,6	87,4	101,6	137,3	156,7	140,0	142,8	143,7	135,2	159,2	144,4

Source: *Gestion de Risques Agricoles*, Niang, working paper 2005

### C.3. Health Risks and Shocks

45. **Health shocks have effects beyond quality of life, impacting on income, productivity, schooling and ultimately, economic growth.** Loss of days on the job translates into less wage earnings and/or domestic production, as well as loss of service output (e.g. teacher days and other essential services). Health crises increase household expenditures and deplete savings, including transportation, medical fees, drugs and in the event of death expenses associated with funerals. The cost effects of health crises are particularly acute in the absence of any risk pooling or insurance mechanisms. The loss of savings in turn increases overall household vulnerability to other adverse events. Effects of health shocks on education attainment include reduced learning and may lead to drop out and repetition. Death of a parent exposes orphans to a significant risk of not enrolling in school. To assess these health risks and shocks, this section first looks at the general morbidity and mortality profile, then reviews the critical areas of malnutrition, maternal mortality, malaria and other endemic diseases and HIV-AIDS.

#### Overall Morbidity and Mortality Profile

46. **Senegal has made important strides in several health outcomes, but lags in several critical areas for its income class.** Life expectancy, at 54 years, is above the SSA average of 49 (1999) reflecting Senegal's higher per capita income, increasing urbanization, low HIV prevalence and improved coverage of primary education over regional comparators. However, maternal mortality remains high at 510 per 100,000 live births (DHS II 1993), and total fertility at 5.7 children per woman is above regional averages. For its income level, Senegal has among the highest under five mortality rates. Neonatal mortality accounts for half of the infant mortality rate and is associated with prematurity and low birth weight, neonatal tetanus, pneumonia and birth trauma. Infant mortality rates are 40 percent higher in rural areas, and child mortality (age 1-5) is 162 percent higher.

47. **Malaria is the leading cause of morbidity and mortality in Senegal.** From the ESAM II household survey, malaria/fever was reported to be the most common disease in rural areas (half of all self-reported causes of illness), followed by diarrhea and respiratory problems. Children and the elderly had malaria (or at least reported fever) more frequently than other groups (Statistical Annex Figure II.c and Table II.i). Malaria is estimated to cause 26 percent of child deaths (Table 11).

<b>Under five mortality</b>	<b>Prevalence</b>
1. Malaria/fever	26 %
2. Malnutrition	22%
3. Diarrhea	21%
4. Tetanus	14%
5. Acute respiratory	7%
<b>Maternal Mortality</b>	
1. Hemorrhages	41 %
2. Obs. Ind./ non obstetric.	23 %
3. Infections	20 %
4. Eclampsia/high blood pressure	7 %
5. Other causes	9 %
<i>Source: ISED 1993, EDS 1997. From draft Country Status Report on Health in Senegal, World Bank 2005 forthcoming.</i>	

48. **Public health service administrative data confirm this general morbidity profile.** Based on an average of 1996-2001, The Government reports that about 900,000 cases of malaria presented for treatment annually, with 220,000 cases of skin ailments, 180,000 cases of acute respiratory illness, 170,000 cases of diarrhea and dysentery, and 60,000 cases of parasitosis as the leading causes of morbidity nationwide. Malaria is also the leading cause of death reported, averaging 1,500 reported deaths per year. Diarrhea claims 280 deaths reported and respiratory illness 250.<sup>11</sup> Although HIV-AIDS is not cited as a major cause of morbidity, it accounts for an increasing share of patient beds at the main infectious disease hospital in Dakar, from 10 percent in 1991 to 60 percent in 1999. Official morbidity figures do not include information on underlying malnutrition as a cause and complicating factor of illness, but estimates of child deaths rank it as the second leading cause. Statistics are not disaggregated between urban and rural areas. However, when sick, 18 percent of rural households missed more than 7 days of work/school due to illness compared with 14 percent of urban households.

### **Malnutrition**

49. **One-quarter of rural households report that they often or always face difficulties with the provision of food.** This is fairly constant across poverty quintiles, with the slight difference that 46 percent of the highest quintile households said they never or rarely faced difficulties providing food, versus 39 percent of the lowest quintile. And, 20 percent of urban households also report persistent difficulties with provision of food. However, it is worth noting that this self-perception may differ sharply from what is actually consumed due to differences in perception and expectation as to what constitutes a meal. (Statistical Annex Table II.j).

50. **Different sources report different figures in terms of child malnutrition, but all agree that rates are much higher in rural areas.** According to the ESAM II, in rural

<sup>11</sup>Due to limited utilization of health services, the administrative figures on morbidity and mortality greatly understate the actual number of people experiencing health shocks. Although there are only 1,500 reported deaths from malaria annually in Senegal, the MOH estimates actual annual deaths at closer to 8,000.

areas more than 43 percent of children under five show signs of stunting (an indicator of chronic poor health and diet), 24 percent are underweight and 10 percent show signs of wasting, compared to 21 percent, 12 percent and 8 percent respectively in urban areas. Malnutrition indicators are highest for Diourbel, Kaolack, Fatick and Tambacounda. According to the MICS 2000 survey, about 21 percent of rural children under five had moderate or severe malnutrition, as measured by weight for age and height for age compared with about 14 percent of urban children (Statistical Annex, Tables II.k and II.l).

## Maternal Mortality

**Table 12 : Selected Maternal Health Indicators**

Indicator	Urban (%)	Rural (%)
% of all women 15-49 that use modern contraception	12	3
% of married women 15-49 that use modern contraception	18	3
% of women 15-49 having had a birth in last year by source of pre-natal care		
Nurse-Midwife	83	62
No one	11	27
Doctor	5	4
Matrone	1	5
Total qualified personnel	89	71
% of women 15-49 having had a birth in last year by caregiver during birth		
Friend / Relative	4	31
Nurse-Midwife	80	30
No one	8	14
Traditional birth attendant	1	11
Matrone	5	11
Doctor	2	2
Total qualified personnel	87	43

Source: MICS 2000

51. **Health shocks to women of childbearing age are a critical risk in rural areas.** Maternal mortality in Senegal is alarmingly high, and in some rural areas exceeds 1,200 per 100,000 live births. Maternal mortality is linked with other adverse outcomes. Studies in other Sahelian settings find that maternal mortality raises the likelihood of child mortality.<sup>12</sup> It also raises the likelihood of children not enrolling in school in Senegal by 3 percentage points (Guarcello et. al . 2004). The higher maternal mortality rate for rural women is caused by a number of factors, including earlier age of initial childbearing, higher fertility rate, complicating factors from malaria and poor nutrition, and lack of care before and during birth. The higher fertility rate reflects lower average age at marriage, less access to contraceptives, lower female education level, as well as rural preferences for larger households. Only 3 percent of rural women report using contraception versus between 12-18 percent of urban women; and 71 percent of rural women report receiving pre-natal care by a qualified health personnel versus 89 percent of urban women. This

<sup>12</sup>From a survival analysis of 39 villages in Burkina Faso, an estimation of hazard rate ratios showed death to mother and being a twin as strongest factors for mortality child mortality. If mother dies in first year of life, 7.4 fold increase in infant mortality risk, if mother dies within second year, a 3.9 fold increase in mortality risk (Becher, et. al. 2002).

coverage falls when it comes to the actual birth, where risks are highest. Forty-five percent of rural women report giving birth either alone or with a family member or friend. Only 12 percent of urban births took place in such risky settings. The presence of nurse-midwives to attend urban births was 2.5 times more likely in urban than in rural settings (Table 12).

### **Malaria and Other Endemic Diseases**

52. **Malaria is the most widespread health issue facing Senegal.** Nationally, malaria accounts for 31 percent of morbidity and 32 percent of mortality. Incidence varies over the year, with a pronounced spike during the rainy season (particularly September and October). For example, in one area under long-term demographical surveillance (Niakhar), 89 percent of all malaria deaths were concentrated between August and December, with the peak in October (Ndiaye et al 2001). In the north, malaria is mostly seasonal with mortality and morbidity concentrated within a period of a few months.<sup>13</sup> In the southern areas of the country, malaria is endemic, with less pronounced peaks. At highest risk of mortality are pregnant women and children from six months to five years old. Malaria is associated with severe anemia in pregnant women, low birth weight and consequent infant mortality. Malaria also hits hardest at those exposed to other health risks, including malnutrition and HIV AIDS, and maternal mortality is complicated by malaria risk.<sup>14</sup> With resistance to chloroquine, the burden of malaria has increased, as evidenced in a two- to three-fold increase in hospital admissions and deaths, and a six-fold increase in pediatric malaria mortality from data collected since chloroquine resistance emerged in Senegal in the late 1980s (Trape et al 2003).

53. **The chances of contracting malaria are many times higher in rural areas than in the cities.** The mean annual entomologic inoculation rate (EIR) is 7.1 in the urban centers, 45.8 in periurban areas and 167.7 in rural areas (Robert et. al. 2003).<sup>15</sup> This lower likelihood of being bitten by an infected mosquito in urban areas is due a less hospitable environment (e.g. due to pollution, lower vector capacity), mosquito avoidance behavior by households (e.g. screens, insecticides, bed nets), and higher human population density. MICS 2000 reports that 13 percent of children 0-59 months slept under some form of mosquito net versus 23 percent for urban children.

54. **Malaria affects income, production and learning.** A cross-country analysis of the overall effect of malaria on economic growth rates estimates that malaria reduces GDP growth in Senegal by 0.35 percent year. (McCarthy et. al. 2000). Economic impacts include loss of labor and agricultural productivity and foregone growth in industries like tourism. In addition, malaria causes loss of school days and may negatively impact long

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<sup>13</sup> Malaria has become problem in the Senegal River Valley area where the construction of two dams has resulted in ecological changes. Severe flooding during the rainy seasons in late 1990s resulted in a change from malaria being seasonal and relatively rare to malaria being transmitted throughout the year.

<sup>14</sup> In a study of Niakhar in the Fatick Region, overall mortality in women 15-49 years of age did not differ by season, but maternal and direct obstetric deaths were significantly more frequent during the rainy/malaria season than during the rest of the year (with a peak in September), even after adjusting for place of delivery (Etard et. al. 2003). The ambulatory center for treating AIDS patients in Dakar reports spikes in hospitalizations of AIDS patients during October (CTA 2003).

<sup>15</sup> The EIR is expressed as the number of infected bites per person per year.

term learning capacity.<sup>16</sup> Average infection in school children is 30-50 percent, but is most common in the South at 62 percent of school children.

**55. Rural populations are also exposed to other endemic diseases, including concentrations of schistosomiasis in certain regions.** Construction of dams and irrigation along the Senegal River Valley has increased schistosomiasis. Prevalence appears to have increased among school children in recent years, from 19.5 percent to 22 percent in endemic zones in 1996-2002. This affects the health of school-aged children, causing an increase of liver-related complications that will be costly to manage in the coming years. Senegal has successfully addressed onchocerciasis (river blindness) in recent years through annual mass treatment of infected villages, reaching 606 villages in 2003, with a decline in community prevalence from 9.5 percent to 0.2 percent in 1996-2003.

## **HIV-AIDS**

**56. Senegal has one of the lowest HIV prevalence rates in Sub-Saharan Africa, at an estimated 1.5 percent of the adult population.**<sup>17</sup> This translates into an estimated 75,000 adults and 5,000 children under 15 currently infected (CNLS 2004). Factors that have contributed to keeping the prevalence rate low consist of favorable geographical location (lower rates overall in the West African region), initial prominence of the less virulent HIV-2 strain, social mores that proscribe certain risks, an early and aggressive policy by Government and civil society to educate the population about the risks of HIV-AIDS, and a program to screen for sexually-transmitted diseases among high-risk groups.

**57. Prevalence rates vary by region, though data does not permit firm conclusions about rural areas.** As presented in Figure 5, the highest rates are observed in the frontier regions of western and southern Senegal, including Kolda (2.9%), Tambacounda (2.6%), and Ziguinchor (2.3%).<sup>18</sup> Kolda and Tambacounda are two of the most rural regions of Senegal with over 80% of the population living in rural areas. By contrast, Dakar has an HIV prevalence rate of 1.7%.

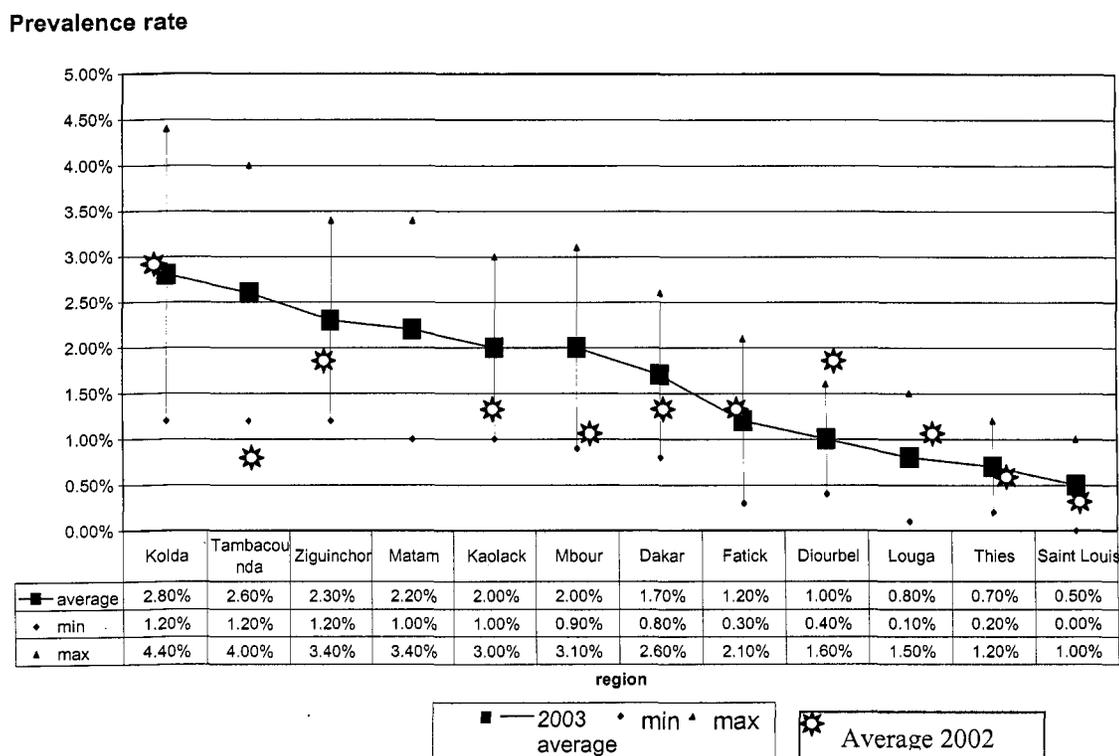
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<sup>16</sup>One study of Dakar estimated that during the period of maximum transmission, clinical malaria prevalence was 1.36% and malaria was responsible for 36% of school absences due to medical reasons. At the end of the period of minimum transmission, clinical malaria prevalence was 0.15% and malaria was responsible for 3% of school absences due to illness (Trape 2003). In the Senegal River Valley, absenteeism due to malaria attacks was 70%.

<sup>17</sup> Based on prevalence rates among pregnant women at sentinel sites. DHS is currently being completed and includes a sampling of HIV prevalence rates in the population at large.

<sup>18</sup> The Government's proposal to the Global Fund for Malaria HIV-AIDS and Tuberculosis posits that the Southern region of the country is at greater risk in part due to the conflicts in that area which weaken social control and encourage the development of sexually risky behavior. Cross-border relations with higher prevalence countries like Guinea and Gambia may play a role as well.

**Figure 5: HIV Prevalence among Pregnant Women, by Region, 2002 and 2003 (average and confidence interval)**



58. **Rural populations are vulnerable to HIV-AIDS because they have less pertinent knowledge of the disease and less access to health services.** Most rural residents say they have heard of HIV-AIDS, which testifies to the awareness campaigns of Government and civil society. But, rural women know less about specific transmission risks and prevention measures than urban women. Although three-quarters of rural women had heard of AIDS, only 29 percent could identify ways to prevent its transmission, versus 47 percent of urban women (Statistical Annex Table II.m). Sixty-two percent of girls could not identify a single transmission risk (40 percent for urban girls), and fewer rural women know where to get an HIV test. There are large regional variations, with the largest lack of awareness in Kolda and Tambacounda, the regions with the highest prevalence rate.

59. **Labor migrations, which are critical for rural survival, also appear to increase HIV risks.** About half of all AIDS cases being treated at the country's main out-patient clinic report extended periods abroad, most frequently (64 percent) in other African countries. Relatively fewer AIDS patients report travel to Europe (6 percent) or the US (1 percent) (CTA 2003). A study of villages around Matam noted that 27 percent of returned male international labor migrants were infected compared to less than one percent of non-migrants (Kane et. al. 1993). A survey in rural Ziguinchor found that seropositivity was associated with history of blood transfusions, injections, sexually-transmitted diseases and seasonal migration (Pison et. al. 1993). In rural areas, HIV appears to be mainly transmitted first to adult men through sexual contacts with infected women met during

seasonal migrations and second to their wives or partners once back home.<sup>19</sup> Given the high rate of female-headed households, in large part due to labor migrations, there are a substantial portion of rural women for whom this risk is present.

60. **Moreover, economic and power relationships between genders put women at risk.** In one study of southern Senegal, seasonal migrants and divorced or widowed women were more likely to declare casual sex. Overall, 28 percent of sexually active men and 27 percent of the sexually active women declared at least one casual sex partner in the last 12 months. Casual sex was motivated by material needs for 66 percent of the women who reported it (Lagarde et al 1996).

### Health Shocks and Access to Health Services

**Table 13 : Place of consultation if sick and if consulted, rural all ages (%)**

Place of consultation	Household Poverty quintile					Total
	Q1	Q2	Q3	Q4	Q5	
Health Post	12	8	11	9	7	10
Public Hospital/dispensary	17	20	21	24	29	20
Public health center	43	47	43	42	47	44
Private doctor/dentist	0	0	1	1	0	1
Traditional healer/Marabout	18	15	15	14	9	16
Midwife/nurse	0	0	0	1	2	0
Religious hospital/dispensary	1	2	2	3	2	2
Case de santé – health hut	7	6	5	4	3	5
<b>Reasons for not consulting health services</b>						
Not necessary	33	31	40	44	43	36
Too costly	45	45	34	35	24	40
Too far	1	18	18	20	21	17

Source: ESAM II

61. **In the face of a health shock, rural populations tend to use health services less than urban dwellers.** Two-thirds of the rural sick used health services versus three-quarters for urban residents, declining by poverty level. (Statistical Annex Table II.n). More importantly, rural residents access lower quality health services. Rural inhabitants were far more likely to go to traditional healers than urban populations (16 percent versus 6 percent), were twice as likely to go to a public health centers, and used public and private hospitals and clinics less (36 percent versus 67 percent). The poorest households were the most likely to go to traditional healers. Moreover, utilization of the health huts (*cases de santé*) was very limited as a curative service (Table 13).

62. **Financial access and distance are critical factors in use of health services in rural areas** For those rural residents who said they had been sick but did not seek

<sup>19</sup>Women migrants do not appear to present the same level of risk. A study of female Serere migrants found that they maintain traditional Serere marriage and sexual practices with moderate risk for HIV infection and do not create a link between low risk and high risk groups (Velyvis 2003).

treatment, 40 percent cited high cost as the reason (Table 13). This was even more pronounced for poorer rural households. Costs may include not only consultations and medicines, but also the costs in terms of lost time for work and costs of transport to the facility. These costs discourage populations from seeking prompt medical attention, which is time-critical in the case of onsets of malaria, birth complications and other health shocks.<sup>20</sup> Overall, rural household spend about 2.1 percent of their annual household expenditures on health versus 0.6 for urban households (Statistical Annex Table II.o). Moreover, the relationship between cost, quality, distance and use is inseparable. Rural and urban households alike make assessments about the quality of care they will receive for the price, including transportation and other costs of seeking treatment.

#### **C.4. Risks and Shocks to Educational Accumulation**

**63. Risks to educational accumulation include never enrolling, dropping out during the course of the year or between years, or not learning the sufficient skill base.** These shocks may translate into lower lifetime earnings, less potential for diversification of income sources, and increased exposure to health risks especially for uneducated women. International studies have shown that children are more at risk of never starting school if their parents had no schooling, thus transmitting vulnerability across generations. Levels of female education are directly linked to health outcomes, including knowledge of HIV/AIDS, fertility and utilization of health services. Literacy levels remain low in rural areas. Literacy is higher among men (52%) than women (30%), and for both genders each new generation has a higher literacy level than the prior one, with no difference across poverty levels. (Statistical Annex Tables II.p and II.q).

#### **General Enrollment Patterns**

**64. The estimated gross primary enrollment rate is 95 percent in urban areas and 70 percent in rural areas.** This translates into over 300,000 rural children of primary school age that are not in school, in contrast to only 36,000 children out of primary school in urban areas (Table 14). For rural areas, a full one-third of these are in the Diourbel region, with other significant numbers in Kaolack and Louga. It is not possible to say how many of these do not go because there is no school in the area, but extensive investments from 2000-2004 increased the number of primary schools from 4,751 to 6,060 and the number of classrooms from 21,530 to 30,483 reducing this as a general factor.

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<sup>20</sup>In Touba, 64% of households used informal health care for malaria due to cost reasons (Faye et. al. 1996)

**Table 14 : Difference Between School-Aged Population and Enrollments, by region**

	Number Enrolled			Number School-Aged		Difference	
	Rural	Urban	Total	Rural	Urban	Rural	Urban
Dakar	12 191	316 961	329 152	12 989	379 773	798	62 812
Diourbel	47 675	29 351	77 026	152 714	29 164	105 039	- 187
Fatick	87 564	18 018	105 582	92 798	13 389	5 234	- 4 629
Kaolack	75 252	51 229	126 481	141 350	43 373	66 098	- 7 856
Kolda	115 568	26 190	141 758	127 602	19 161	12 034	- 7 029
Louga	49 330	23 249	72 579	95 495	21 870	46 165	- 1 379
Matam	37 206	7 832	45 038	63 059	10 223	25 853	2 391
Saint Louis	58 660	42 262	100 922	75 707	43 605	17 047	1 343
Tamba	60 035	19 513	79 548	87 185	17 737	27 150	- 1 776
Thies	105 015	92 238	197 253	126 250	97 256	21 235	5 018
Ziguinchor	61 184	46 226	107 410	42 817	33 054	- 18 367	- 13 172
<b>Total National</b>	<b>709 680</b>	<b>673 069</b>	<b>1 382 749</b>	<b>1 017 966</b>	<b>708 605</b>	<b>308 286</b>	<b>35 536</b>

*Source:* MOE, Bank estimates. *Note:* negative balances (more children in school than in the general population) are possible both due to out-of-age children in school and/or cross-regional attendance

65. **Within the rural areas, there is little to no difference in attendance rates between poverty quintiles (Table 15).**

While economic constraints may keep poorer families from sending their children to school, it is not clear what the constraints are among the richest rural quintile. A number of factors are possible. First, if children's attendance is strongly influenced by parental education levels, then the fact that adult illiteracy is relatively flat across rural poverty quintiles would help explain some of this. Another possible factor is the role of religious education and coranic schools among the rural elite.<sup>21</sup> Other possibilities include the perception by better-off rural families that education is not that valuable, which may be particularly prevalent among certain trader groups where children follow in the family trading practice. And finally, the opportunity cost of child labor is higher in those households with more access to land or grazing areas, who typically are wealthier.

Poverty Quintil	Never	Attending now	Dropped out
1 (poorest)	58.2	35.2	3.8
Quintile 2	57.7	38.0	2.3
Quintile 3	60.2	34.6	3.9
Quintile 4	60.2	35.8	4.0
5 (wealthiest)	57.0	37.6	3.3
Total	58.7	36.1	3.4

*Source:* ESAM-II *Note:* These figures differ from MOE enrollment figures as they are limited to school-age children (net enrollment)

66. **The most common reason rural households themselves cite for their children leaving school is lack of interest or that school is not useful, followed by health problems, too costly, and need to work at home.** One-third of those children who had dropped out said school was not useful or they had no interest (Statistical Annex Table II.r). Twenty percent cited health problems, 13 percent high costs and 12 percent that they had to work at home. Distance in fact was perceived as a lesser issue, cited only by 5

<sup>21</sup> However, removing Diourbel from the data does not change the general pattern.

percent of children who had dropped out.<sup>22</sup> In terms of the costs of schooling, although primary education in theory is free, various fees are levied usually through parents committees, as well as the cost to the families of books, supplies and other inputs. On average, rural families spend about 1 percent of their annual consumption on education expenses.

### Determinants of Educational Attainment in Rural Areas

67. **Analyzing household and community-level determinants of rural schooling supports several of these self-perceptions.** A multivariate model was developed from the PASEC data set to explore determinants of primary enrollment, primary completion, primary dropout and years of schooling attained for rural children (Table 16).

Table 16 : Determinants of Rural Primary Schooling Outcomes

Household/Community Characteristics	Years of Schooling		Primary Enrollment		Primary Graduate		Drop-Out	
	Rural Sample		Rural Sample		Rural Sample		Rural Sample	
	Coef.	T-stats	Coef.	Z-stats	Coef.	Z-stats	Coef.	Z-stats
Sex	<b>0.80</b>	<b>4.37</b>	-0.02	-0.14	<b>0.21</b>	<b>1.95</b>	<b>-0.27</b>	<b>-2.2</b>
Age	<b>1.28</b>	<b>12.51</b>	<b>0.48</b>	<b>2.61</b>	<b>0.83</b>	<b>7.66</b>	<b>0.39</b>	<b>3.69</b>
Agesq	<b>-0.03</b>	<b>-9.01</b>	<b>-0.03</b>	<b>-4.44</b>	<b>-0.02</b>	<b>-6.07</b>	<b>-0.01</b>	<b>-2.43</b>
Head of HH - Primary Ed.	<b>-0.43</b>	<b>-1.8</b>	0.00	0.02	<b>-0.34</b>	<b>-2.96</b>	<b>0.26</b>	<b>1.84</b>
Socio-Economic Status	<b>-0.14</b>	<b>-2.63</b>	-0.01	-0.29	<b>-0.050</b>	<b>-1.66</b>	<b>0.09</b>	<b>2.63</b>
Child Sick	<b>-1.23</b>	<b>-2.09</b>	-0.75	-1.21	-0.23	-0.68	<b>0.74</b>	<b>2.25</b>
Distance to School	-0.08	-0.4	-0.09	-0.51	-0.08	-0.69	<b>0.27</b>	<b>2</b>
# of positive community interventions	<b>0.14</b>	<b>1.85</b>	0.06	0.95	-0.03	-0.6	-0.01	-0.17
# of negative community shocks	-0.02	-0.21	-0.02	-0.31	0.06	1.1	-0.03	-0.4
# of bad harvests	<b>-0.30</b>	<b>-2.23</b>	0.05	0.44	<b>-0.15</b>	<b>-2.22</b>	0.09	1.51
# of good harvests	0.06	0.74	<b>-0.15</b>	<b>-2.14</b>	0.05	0.97	-0.03	-0.36
N	750		631		963		958	
Adj. R-squared	0.4246		0.577		0.3308		0.2307	

Note: Bold denotes statistically significant at 5% confidence interval; years of schooling is for children aged 6-25.

Source: PASEC Dataset, Bank estimates

68. **The factors that most impede rural primary educational attainment are:**

- (a) The older the child, the less likely they are to enroll in primary school and the more likely to drop out. Further, years of school and likelihood of graduating from primary school are positively correlated with age, as one would expect.
- (b) In terms of gender, boys are more likely to graduate, have more years of schooling and to avoid dropping out. The gender difference disappears when it comes to enrolling, demonstrating the increases in girls entering primary school.

<sup>22</sup> The ESAM survey question only asked for those children who dropped out. Distance may be more of a factor for those who never enrolled.

- (c) Socio-economic status is negatively correlated with graduating from primary and the number of years of schooling and positively associated with drop-out. While the better-off rural households are as likely to initially enroll their children in school, they are less likely to continue. (Possible factors were discussed in para. 65).
- (d) The educational attainment regression shows, for both rural and urban samples, that when the highest level reached by the head of the household is limited to primary, the child is likely to complete fewer years of schooling.
- (e) Distance is only a factor in drop-outs, but not initial enrollment (but this only applies for behavior within communities with schools given the sample frame).
- (f) Positive community interventions, typically local development projects and small-scale infrastructure, were associated with more years of schooling. This may be picking up social capital aspects associated with more dynamic communities, proximity or more physical investment in completing classrooms.
- (g) Health shocks to the child are negatively correlated with the number of years of school completed and higher drop-out rates. Health shocks to the parents do not appear to significantly affect rural children's schooling.<sup>23</sup>
- (h) Negative crop shocks that adversely affected households over the past 10 years have been detrimental to the number of years of schooling that rural children are able to complete and their likelihood of graduating from primary education. However, good harvest years also appear to decrease the likelihood of enrollment, possibly due to demands for family labor in years of good rains.

69. **There is some additional evidence to support the effect of child labor on the lower rural primary enrollment rates among the better-off households.** In the survey of the Groundnut Basin, 9 percent of children (12 percent of boys) were involved in groundnut production (Table 17). More importantly, this share rose with household wealth, to 16 percent of boys from the wealthiest quintile. The opportunity cost of schooling is viewed as greater among the better-off households.

**Table 17 : % Children Working in Groundnut Production, by gender and poverty level**

	Non Poor	Poor	Q1	Q2	Q3	Q4	Q5
% children who work	11.6%	7.6%	7.5%	7.2%	12.9%	10.1%	12.0%
% boys who work	14.8%	9.1%	8.3%	10.1%	17.0%	11.9%	16.3%
% girls who work	6.8%	5.7%	6.5%	3.7%	7.5%	7.3%	4.0%

*Source:* PSIA survey. *Note:* for Groundnut producers only.

### C.5. Social Risks

70. **Regional conflict in the Casamance, theft of livestock and property disputes are the principal sources of social risks in rural Senegal.** A separatist movement in the Casamance has caused loss of welfare in the southern region of Senegal since the early 1980s, including armed conflict, land mines and increasing insecurity resulting in livestock theft and acts of banditry. A peace agreement was signed in March 2001 and the situation has greatly improved in 2004-2005. It is estimated that up to 60,000 people have been

<sup>23</sup> However, parental health shocks were associated with less educational attainment in urban areas.

displaced, 500 wounded by land mines, and 95 killed. Some 230 villages were abandoned and 4,000 students displaced due to destruction of schools.<sup>24</sup> Several rural health centers closed due to difficulties to recruit personnel. The impact on HIV prevalence is unclear, but higher rates are often associated with conflicts, and Ziguinchor and Kolda are among the highest rates in the country. Insecurity has resulted in loss of tourism receipts and private investments and a slow down in public investments.

**71. An important and growing social risk for rural residents is the theft of livestock which affects many regions.** As previously mentioned, theft accounts for 22 percent of the responses of rural residents as to the cause of livestock loss. This general observation is echoed by the finding of a social assessment in the poorest rural villages in Senegal that found that “although it can be said that the team anticipated problems of rural theft of livestock, the researchers never imagined the scale of theft as a problem in the daily lives of rural villages today as was reported during the interviews. It was a significant factor affecting the prioritization of village needs in every case” (Sey and Wilson 2001). The Ministry of Livestock estimates annual losses due to theft at 2 billion CFA (US\$4 million). Given the importance of livestock as a store of wealth and a hedge against shocks to consumption, livestock theft significantly heightens rural vulnerability.

**72. There is also increasing tension and potential conflict over rural property rights.** The juxtaposition of traditional property rights and those conferred through the modern legal framework, the absence or clear territorial boundaries between local governments as well as rural and urban administrative areas, conflicts over traditional usufruct rights of pastoralist and lack of regulatory instruments are at the origin of these problems. These have manifested as conflicts between agriculturalists and herders in agro-sylo-pastoral zones. Additional conflicts have occurred between hereditary land users and those conferred rights through recent irrigation investments along the Senegal River Valley (White 2000), as well as resistance by the Peuhl to expansion of agricultural lands in Kolda. Moreover, there are a growing number of potential conflicts resulting from return migrants seeking to procure land through local governments. The exact number of people affected or economic impacts of these property right conflicts is not known, but they demonstrate a rural space and economic systems in flux and in need of effective and transparent governance mechanisms to reduce the risks to investments and livelihoods.

#### **D. Overview of Risks, Multiple Shocks, Vicious Cycles, and Seasonal Concentrations**

**73. Most villages experience multiple negative shocks.** In the PASEC survey of 32 rural villages, only four experienced no village-level shocks in the last 10 years. These villagers were about as likely to say the overall situation had gotten worse as to say it had improved. The greater the number of shocks, the greater was the likelihood of a worsening situation perceived by villagers. For the villages that had experienced at least four shocks, 80 percent felt their overall situation had worsened (Table 18).

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<sup>24</sup>Despite this dislocation, children continued to attend school, even in if in provisional buildings. Ziguinchor Region, including its rural areas, has some of the highest primary enrollment rates in the country.

Community Shocks	# villages affected	Likelihood of perceived deterioration
None	4	50%
1 shock	5	64%
2 shocks	12	70%
3 shocks	6	73%
At least 4 shocks	5	80%
<i>Source:</i> PASEC dataset. Shocks include drought, livestock loss, insect infestation, fire, epidemic, famine accidents, enterprise closing, flooding and other		

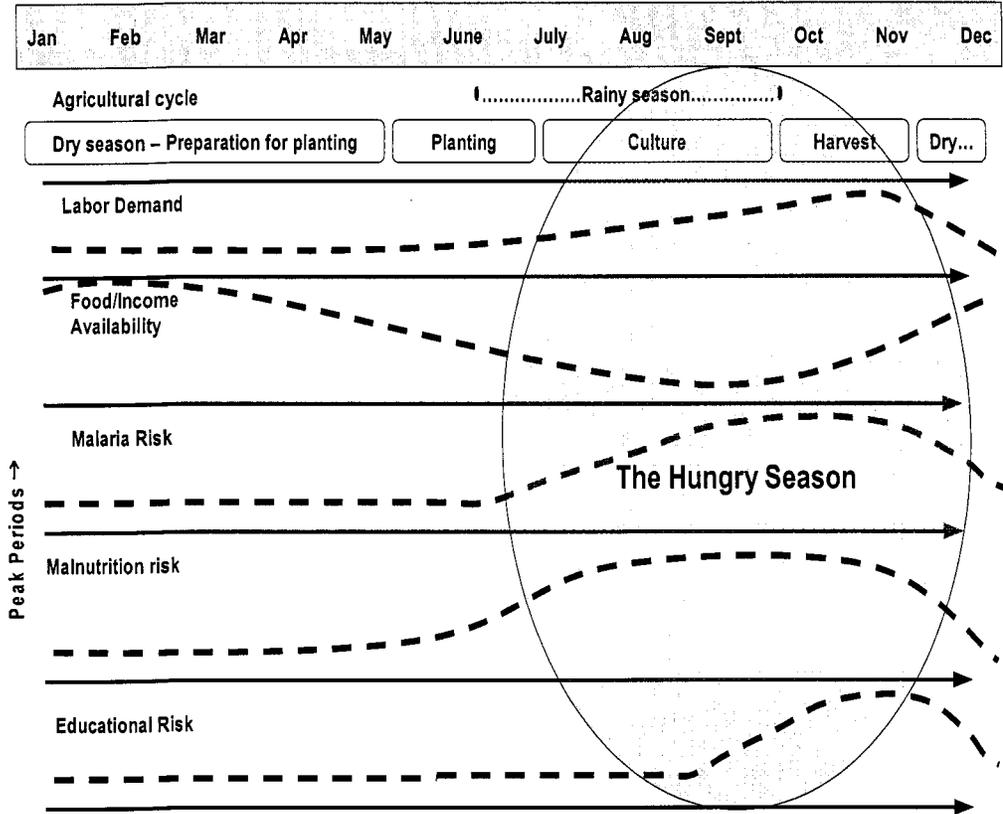
Type of Shock	(%)
Drought	84
Insects/Crop Disaster	76
Famine	70
Herd decimation	58
Flooding	50
Catastrophe /Accident	48
Closing of health center	30
Enterprise closing	30
Epidemic	20
Fire	16
<i>Source:</i> PASEC dataset	

74. **Even within the same village, these shocks hit household differently.** From the PASEC survey, villagers estimated that drought and agricultural shocks were the most widespread. But even in the case of drought, only an estimated 84 percent of households suffered, and only 70 percent were subject to famine (Table 19). This is very similar to a recent WFP food security rural household survey which found that about one-third of households within villages were not at risk for food insecurity (WFP 2004). Flooding was perceived to only affect about half of villagers. And closing of a health center was seen as impacting 30 percent of the population, perhaps reflecting limited use of health services.

75. **With its close ties to agricultural production and weather patterns, there is an important seasonal aspect to rural vulnerability.** Mutually reinforcing patterns of risk overlap in time to make parts of the year extremely difficult. This critical period, known as the ‘hungry season’, exacerbates vicious cycles and is a time of heightened vulnerabilities (Figure 6). Peak labor demands occur at a time of highest risk of malnutrition and malaria. Malaria peak coincides with the rainy season when transport for health emergencies is most difficult. Lack of available income in the pre-harvest period is concentrated at the same time as heightened need for cash to pay for health treatment for malaria and to pay schooling costs associated with the beginning of the academic year in October. This timing often delays the entrance of children into school as fees can only be paid after the harvest. Interventions timed to address critical risk periods will be more effective if they take into account the cyclical realities of rural areas.

76. **Certain negative shocks increase the likelihood of other adverse events occurring.** A drought may prompt temporary labor migration, which increases exposure to HIV for both the migrant and the partner who stays in the village. A bad harvest and the resulting income shock may reduce the likelihood that a woman with a pregnancy complication seeks out adequate health care or increase the risk that a child drops out of school. Not having attended school as a girl reduces likelihood of neonatal tetanus shots as a mother. These vicious cycles of vulnerability make it difficult for rural households to move out of poverty, or drive those that have improved their situation back into difficulties.

Figure 6 : Seasonal Concentration of Rural Risks



77. **Table 20 summarizes the leading risks and vulnerable groups in rural Senegal.** These risks create vulnerable groups that range in size from about 85 percent of rural residents at risk of being adversely affected by cyclical drought, to smaller groups, like those who are HIV positive or wounded by land mines in the Casamance conflict. Groups exposed to general vulnerability, like the 1.8 million rural residents in the lowest consumption quintiles or the 1.4 million of the poorest households who are engaged in seasonal agricultural labor, are less likely to be able to cope with any type of shock.

**Table 20 ; Summary Estimates of Rural Populations at Risk**

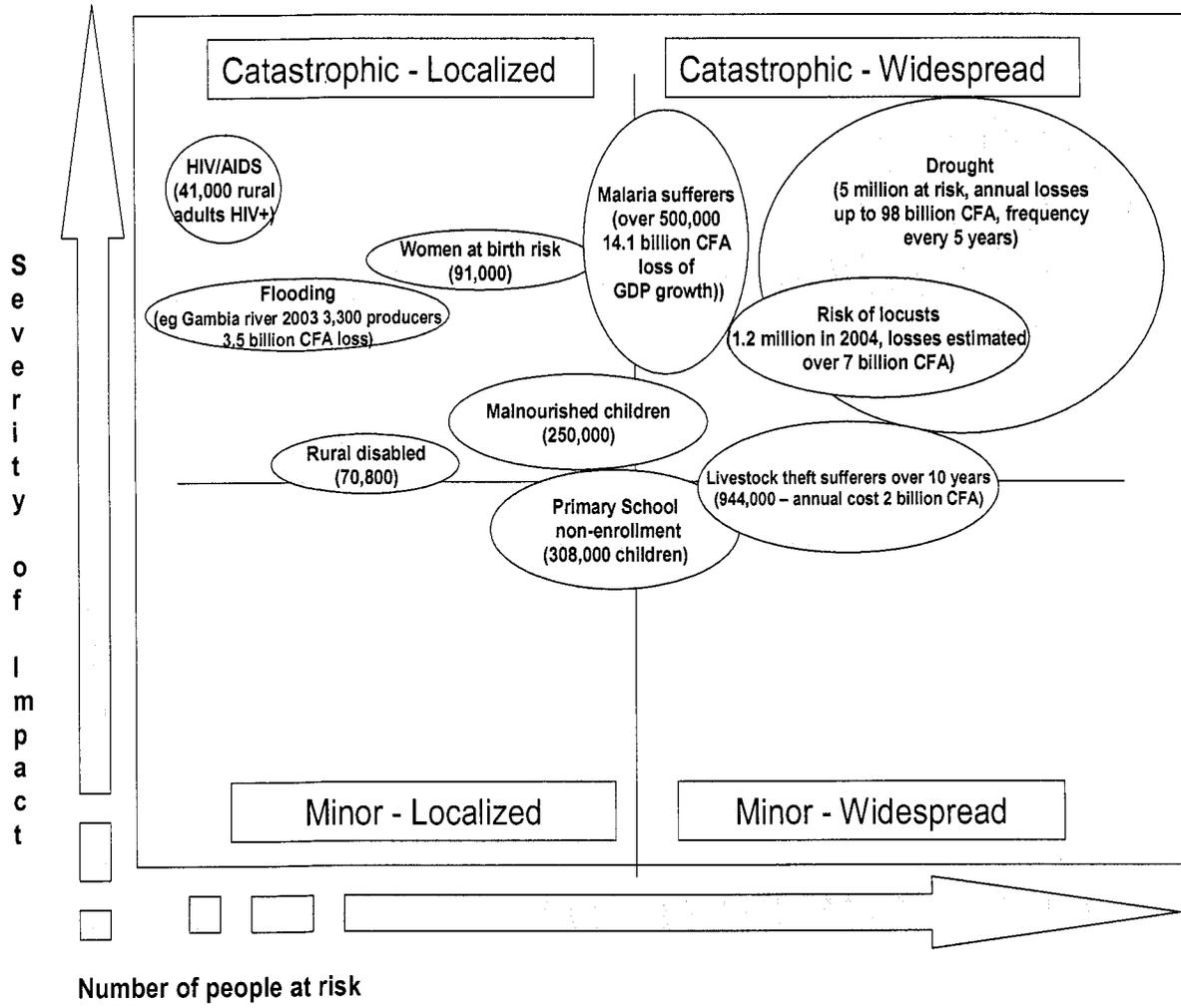
<b>Risks and Vulnerabilities</b>	<b>Indicators</b>	<b># Individuals</b>
<b>Poverty</b>	# Under poverty line	3,832,000
	# in poorest two quintiles (approx. under 1\$ per day)	1,800,000
<b>Natural Risks</b>	At risk of bad harvest at least once year over last 10	5,000,000
	At risk of livestock loss from epidemic over 10 yrs	2,230,900
	At risk of loss from locust (2004)	1,175,400
<b>Health Risks</b>	# getting water from open well, river and other unsafe source	3,138,000 <sup>25</sup>
	Population that often or always face difficulties with provision of food	1,500,000
	Malaria sufferers	+500,000
	Rural malnourished children (0-5)	250,000
	# of rural women 15-49 likely to give birth in extremely risky situations (alone or attended by friend)	91,000
	# of pregnant rural women not receiving pre-natal care	61,400
	# of children 0-5 likely to die before 5 <sup>th</sup> birthday	36,300
	Of those, from malaria/fever	9,500
	Estimated rural adult population 15-50 yrs infected with HIV/AIDS	41,000 <sup>26</sup>
Rural AIDS orphans	12,000	
<b>Education Risks</b>	Illiterate adults	4,111,600
	Rural children in school but not receiving school lunches	511,200
	Rural children of primary age who are not in school	308,000
	Difficult physical access to schools -7-12 yr olds who live+ 3 kms	188,000
<b>Employment Risks</b>	Bottom 2 quintile households with principal occupation as seasonal labor	1,400,000
<b>Social Risks</b>	At risk of livestock loss from theft over 10 yrs	944,000
	# displaced from Casamance conflict	60,000
	# wounded by land mines	500
<b>Other</b>	Disabled	70,800
	Orphans (0-14 lost at least one parent)	238,000
<b>Inaccessibility</b>	# living over 1 hour away from public transportation	1,939,262

78. **Figure 7 highlights where these risks and vulnerabilities fall along a spectrum of extensiveness and severity.** For risks that have a minor in impact, like routine illnesses, small brush fires, etc., self-insurance via personal savings is typically adequate to cope with associated costs and welfare losses. In such situations, recourse to negative coping strategies which impact on longer-term ability of households to improve their socio-economic status are unlikely for all but the most destitute families. As risks move up the severity scale, the justification for risk-pooling and public intervention increases. In addition, for co-variate risks that affect a wide range of the population and/or multiple risks concentrated in particular populations or at times of the year, the ability to risk pool is curtailed and recourse to public interventions is important.

<sup>25</sup> Based on 2001 household survey data, does not take into account investments made since that date.

<sup>26</sup> Assumes national prevalence rate applied to rural population, in absence of specific data on rural prevalence

Figure 7: Severity and Frequency of Risks in Rural Areas



## CHAPTER III: Informal and Private Risk Management Mechanisms

*As a first line of social risk management, how do rural households prevent, mitigate and cope with risk? What are the main responses at the household and village level? What are the main informal and market-based mechanisms?*

### A. Overview of Household and Community Social Risk Management Strategies

79. **Households and communities seek to decrease their vulnerability through long-standing practices of risk management in the face of the vagaries of life in the Sahel.** Strategies to prevent shocks from manifesting take many forms including vaccinating children and livestock, irrigation, clearing to prevent bush fires and so on. Strategies to mitigate the impact of a shock include diversification of production and revenue (e.g., crop diversification, sale of garden produce and firewood, petty commerce) as well as self-insurance and risk pooling through social networks and informal savings clubs (*tontines*). Coping strategies include reduction in quantity and quality of food eaten, sale of animals, use of traditional medicines, non-enrollment of children in school and recourse to temporary migration. Some short-term coping strategies can have long-term negative consequences, particularly when they lead to asset depletion, erosion of human capital and environmental degradation. Mitigation instruments like holding livestock as hedge against hardship are ill-suited against covariate shocks like drought.

80. **Diversification of sources of income and types of assets held is practiced by almost all rural households.** Diversification reduces risk exposure, stabilizes income flows and increases potential liquidity in times of crisis. From the PSIA survey, poorer households in the Groundnut Basin were more likely to have their household income concentrated in agricultural production, versus non-poor who were more diversified into livestock and other economic activities. Within rain-fed agriculture, throughout the 1990s there has been diversification away from groundnuts and other cultivations that have been most affected by adverse weather patterns and into such crops as watermelon and *niébé*.

81. **Risk management strategies vary by place and may change over time.** A 2004 vulnerability assessment found that rural households in northern Senegal responded to food insecurity primarily through sale of animals, migration and income diversification, whereas adjustments to the daily diet, with high short-term impacts, were more prevalent in Tambacounda, Kaolack and Fatick (WFP 2004). Oral histories taken from the region of Ndam Mor Fadamba found that in response to major catastrophic events over the last 60 years, such as the locust invasion of 1950, a village fire in 1967, the drought of 1973, a rat infestation in 1976, and locusts in 1988, changes in eating patterns and recourse to food aid had declined in importance as coping strategies (IIED 1993) in preference to rural-urban and international migration and the selling of large animals. The sale of small animals like chickens remained a core coping strategy throughout this period.<sup>27</sup>

<sup>27</sup> A study of rural vulnerability in Kenya found that small ruminants are usually more liquid, and in the face of idiosyncratic shocks, display better market integration (Christiansen and Subbarao 2004).

## B. Membership in Social Networks and Solidarity Groups

82. **Social networks and local organizations are the frontline of defense in the face of shocks to households.** Local-level networks and organizations exist to organize social relations, mobilize and regulate collective action particularly around production systems and management of natural resources, and to reduce and manage local risks. Mutual assistance through labor exchanges at critical agricultural periods is common. These groups and associations may be important not only to foster village solidarity, but also to create links with the State or other external actors like NGOs in order to attract resources.

83. **Patterns and forms of association are heterogeneous in rural Senegal.** The main membership associations consist of producer's cooperatives, economic interest groups (GIEs), producers' cooperatives and workers' unions, water and irrigation user associations, village development associations, women's groups, youth and sport associations and religious organizations. These organizations can be village-based or federated in larger regional or national networks. They can be inclusive of all members of a certain village, typical of community organizations, or more exclusive with membership limited as in the case of producer organizations. Moreover, these may be induced through Government efforts, as in development of producer cooperatives in the peanut basin and rural women's groups (*groupements de promotion feminine*) in the last twenty years.

84. **The associative tissue is very dense in rural Senegal, creating webs of solidarity that are critical in such a risk-prone environment.** As presented in Table 21, religious organizations, women's groups, informal savings clubs (*tontines*) and culture and sport organizations are widespread, present in the vast majority of rural communities. Parent-student committees are prevalent (at 58%) and can be expected to increase over time as education opportunities expand in the rural areas. Associations around economic advancement, water and health management are available to only about one-third of rural households. For water and health, this reflects the lower coverage of these infrastructure services.

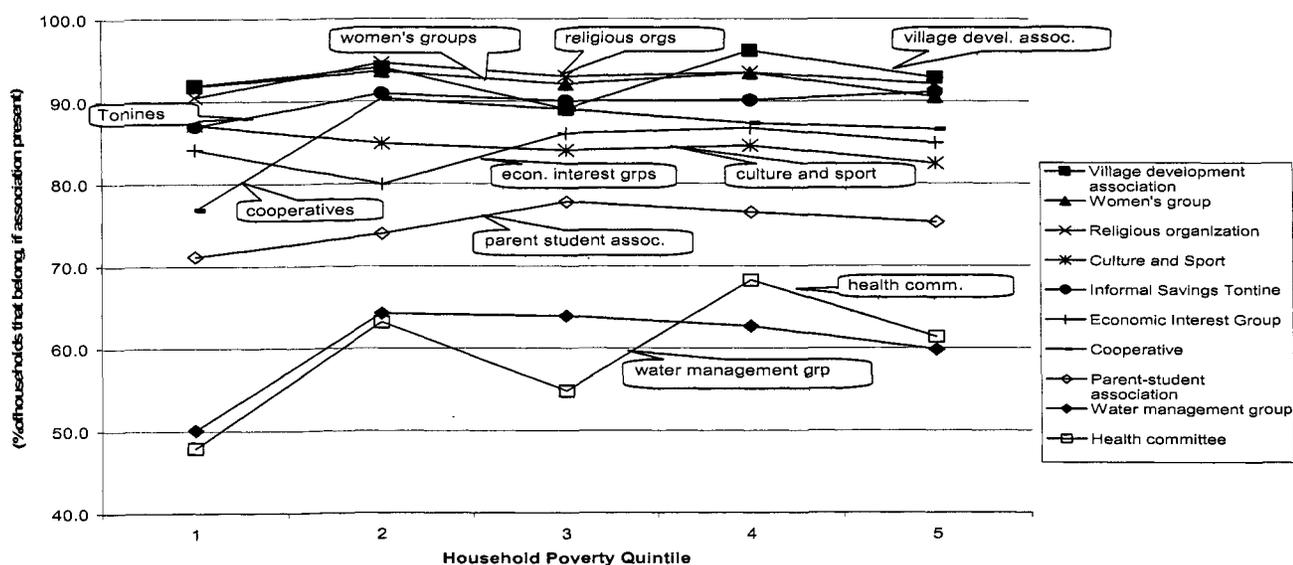
Type of Association	Is organization present in village?
	Yes
Religious Organization	80
Women's Promotion Group	69
Informal Savings club (Tontine)	67
Culture and Sport association	67
Parent-Student Association	58
Economic Interest Group (GIE)	39
Village Development Association	35
Cooperative	33
Water Management Group	31
Health Committee	28

Source: ESAM II Perceptions of Poverty, 2001

85. **This associative density appears to increase over time, with more formal and production-oriented organizations emerging.** A 2002 survey of villages in the Senegal River Valley, the Groundnut Basin and the Niayes, found that 78 percent of villages had at least one association, up from 22 percent reporting they had such organizations twenty years ago. Producer's organizations had grown at the fastest rate. Analysis of the determinants of organizations at the village level found that village size, presence of non-agricultural activities (like fishing villages), larger holdings and closer proximity to other villages were associated with greater numbers of associations (de Janvry et al 2003).

86. **Membership varies by type of organization, with some much more inclusive than others.** As shown in Figure 8, when present, the vast majority of community members in a village belong to religious organizations, women's groups, village development associations, informal savings clubs, culture and sports organizations and economic interest groups - even the poorest households. Cooperatives have broad membership, though participation is lower for the very poorest households. Three-quarters of households are members in communities with a parents-student association. Membership is lowest and least inclusive of the poorest among health and water committees.

Figure 8 : Share of Households that Belong to Group by Poverty Quintile



87. **There is some evidence that the pattern of distribution of benefits among members varies by type of organization.** From the survey of 280 villages cited previously, the more inclusive and more informal community organizations tended to be more selective of distribution of private or semi-public goods among members (79% receive benefits). The more exclusionary formal producers' organizations were restrictive of membership, but distributed benefits more widely (to 92% of their members (de Janvry et al 2003).

88. **Rural households contribute financially to the maintenance of these networks, across all income groups.** Overall, 68 percent of rural households report making financial contributions to associations (e.g. religious, social, cooperatives). In absolute amounts, rural households give an annual average of 18,500 CFA to associations. Even the poorest rural households contribute 2 percent of their total expenditures (roughly equivalent to health spending). (Statistical Annex Table III.a).

89. **These patterns of density and membership are important in designing programs that seek to build on existing social networks.** First, despite the overall density of associations, there are a critical number of villages, typically the smallest and more remote, that do not have associations and tend to rely on family-based networks, with fewer links to 'outside'. These are the most vulnerable and most difficult to reach with programs that work through existing associations. Second, existing informal associations may be extensive, but not be as inclusive in their distribution ex-post of benefits. And lastly, organizations which have more established conduits to the state, namely school, health and water committees, may not be the best channels for broader public interventions because they are less present, have limited membership and the poorest may not be as represented.

90. **Relying on family and informal redistribution and support alone has its limits.** Gift giving is an important part of social traditions. In both rural and urban areas, the value of gifts given is spread fairly evenly between immediate family, friends and other people/associations. Most giving stays locally. Among rural households, 63 percent of gifts remain in the village and 28 percent within rural areas, and about 8 percent goes to urban areas. The pattern is similar in urban areas. This gift giving is consistent with Zakat, one of the five compulsory duties in the Muslim religion, which consists of giving a fixed part of wealth to needy people. Eligible recipients are as close as possible to the giver within the family, the village and then outside the village. For rain-fed crops, 10 percent of the harvest should be donated to vulnerable groups such as economically destitute people, disabled people, orphans, refugees and prisoners etc. For irrigated crops only 5 percent is required. However, community solidarity networks are limited in that they are not effective for covariant shocks when everyone needs help at the same time.

### **C. Labor Migration and Remittances**

#### **Migration**

91. **Households seek to diversify against rural risks by anchoring part of their revenue outside of the risk zone, through out-migration.** Migration has become an important risk coping mechanism for many rural households. With little access to services, unpredictable crop production and greater exposure to shocks, family survival strategies often focus on having one or several family members go to urban centers, and ideally abroad, to look for work. The importance of migration is not so much that it relieves pressure in the sending communities since it is often the 'ablest' that move. Rather, migration establishes linkages with localities from which remittances are sent back to villages and 'toe-holds' to which future migrants may move using family contacts.

92. **Even though marriages and other family events remain the main reason for migration, a significant amount of migrant households cite economic reasons, such as a lack of jobs, a new job in a different location, and access to land.** The data also indicates that the rich are more likely to move in search of better employment opportunities, while the poor are more likely to be forced to move due to conflicts, diseases and other insecurities. About 3 percent of rural households report having moved due to insecurity, disaster and conflict. Data from the PSIA Groundnut Basin survey report that

one-third of adults had departed at least once, mostly due to employment opportunities elsewhere. Men cited lack of seeds and women cited marriage as well. Upper income households were more likely to have members depart for educational opportunities (6 percent) (Statistical Annex Tables II.b and II.c).

93. **International migration has grown in importance.** There are an estimated 400,000-500,000 Senegalese residing abroad, and about 70 percent of households reported a member abroad in 2001. Although historically strong to France, particularly from the Senegal River Valley, in more recent times migration has diversified, including growing migration towards other European countries, particularly Italy, and the United States. Statistically, migration to other African nations accounts for the largest number of Senegalese émigrés. The largest recipient countries have historically been Cote d'Ivoire, though the recent conflict there may change this pattern, Gabon, Mali and Guinea. Urban households were most likely to have a migrant in Europe, whereas the majority of rural migrants went to other African countries (Statistical Annex Table III.d).

### Remittances

94. **Remittances from abroad provide a cushion against internal shocks and may promote economic growth.** Some studies have found that remittances have an impact on reducing poverty in receiving countries (Adams and Page, 2003). Remittances tend to be stable over time and may even rise in times of economic difficulty in the recipient country (Ratha 2003). However, some argue that remittances dampen growth over the long term by reducing motivation to work and invest or by creating pressures to currency overvaluation (Chami and others 2003). There is concern that remittances may worsen income inequality, including remittance-driven price increases for land and housing.

95. **International remittances to Senegal have grown steadily and account for about 6 percent of Senegal's GDP (Table 22).** This compares to an average of 1.5 percent of GDP for all developing countries in 2002, and 2.9 percent of GDP for the low-income countries. These levels understate the overall amount of resource transfers as they capture only formal transfers through banks, money transfer operators like Western Union, currency bureaus, and post office-based financial services. Informal transfers in cash or in-kind through family members, friends, traders and informal networks are substantial and by some estimates may be as large as or larger than recorded transfers (Global Development Finance 2004).

**Table 22 : International Remittances to Senegal, 1994-2004**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Current prices in million US \$	105.2	116.2	104.8	105.0	106.4	142.6	216.0	283.6	231.2	236.8	248.5
As % of GDP	2.9%	2.6%	2.3%	2.4%	2.3%	3.0%	4.9%	6.2%	6.7%	6.4%	6.2%

Source: IMF Balance of Payments, Bank estimates.

96. **While there is little systematic data on the share of remittances in rural household income, anecdotal evidence suggests that there are regions where this can**

**be an important, and even predominant, income source.**<sup>28</sup> For example, the Soninke and Pular ethnic groups from the Senegal River Valley have strong traditions of rural to international migration and studies report that remittances may account for as high as 90 percent of their household income (Cotoula and Toulmin 2004).<sup>29</sup> The PSIA survey of the groundnut basin confirms the widespread nature of these transfers. Thirty percent of poor and 25 percent of non-poor households reported receiving non-pension transfers (national and international), equivalent to 27 and 36 percent of household income, respectively. (Statistical Annex Table III.e). From ESAM II, 72 percent of rural households with international migrant members reported they send money back.

**97. The priority use of remittances appears to be to smooth consumption and address basic needs.** Recent studies estimate that current consumption accounts for about 75 percent of remittance use (Sander and Barro 2003, C. Diop 2003, A.S. Fall 2002). Higher amounts may be transferred at critical moments, like to pay school entrance fees or to pay for labor at peak agricultural periods. About ten percent goes into savings accounts, often with the idea of future investments in real estate. The remainder goes directly into investments to purchase of land, buildings, or start-up capital to finance commerce or services (e.g. taxis). Very little appears to finance agricultural investments, though there are anecdotal reports of vegetable production and livestock purchases. On a community level, ethnic groups with strong migrant traditions have formed associations of émigrés abroad to raise funds and finance larger-scale projects, like schools, health centers and mosques, in their villages of origin.

**98. Systems for informal transfer of remittances are varied and most likely account for the lion's share of transfers to rural areas.** These informal systems encompass cash transfers through friends, relatives and traders, as well as in-kind transfers that are either hand-carried to rural residents, or financed through private shopkeepers that then distribute goods through their kiosks. As they rely on social and family networks, they are easier to use for rural populations with little schooling and limited knowledge of formal banking procedures. And, émigrés that lack legal status may hesitate to use formal channels as they may require providing identification or opening a bank account. Moreover, informal transfers are not subject to any ceilings, like formal transfers.

**99. The Post Office and, increasingly, micro-finance institutions, transfer remittances to rural households through formal channels.** The formal banking system has limited presence in rural areas.<sup>30</sup> The Post Office (*la Poste*) has the largest reach of any financial service provider in rural Senegal, with 137 branch offices. All accept financial transactions. The Post Office uses its own transfer systems for within country money

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<sup>28</sup>Some researchers have estimated that remittances may represent between 30-80 percent of recipient household income (van Doorn 2002) and in regions of high migration, like Louga, remittances may represent 90 percent of household income (Tall 2001 in AS Fall, 2003).

<sup>29</sup>In an ethnographic review of the rural community Moudery, whose inhabitants are mostly Soninke with long experience of migrations, of the 32 elected local councilors, 7 have dual nationality and 22 have been or are migrants (as reported in Cotoula and Toulmin 2004). Moudery scores high for rural areas in terms of composite access to infrastructure and has a full complement of basic infrastructure except full road access.

<sup>30</sup>In addition to postal transfers, formal international transfers are also effected through wire transfers between bank accounts and private transfer operators like Western Union and MoneyGram.

transfers, but has contracted with Western Union for international transfers. The Post Office channels most of the domestic financial transfers in the country and accounts for almost the vast majority of all transfers to rural locales. It is well-known to villagers and trusted and offers an array of services, including savings accounts. However, there are occasional liquidity problems at rural branches that require multiple visits from recipients.

100. **The rapid expansion of decentralized financial structures (micro-finance institutions–MFIs) is creating alternative conduits for remittances.**<sup>31</sup> Most MFIs focus on traditional functions of savings and credit (see following section), but an increasing number are entering the market of money transfers. Two MFIs are formally involved in the remittances market – l'UNACOIS (*Union Nationale des Commerçants et Industriels du Sénégal*) and the *Djoloff Mutuelle d'Epargne et de Crédit* (DJOMEC) in collaboration with a private company, Money Express, to handle international transfers. Most expansion in remittance transfers to rural areas is expected to come through micro-finance institutions, either as they diversify the services they offer or enter into partnership with private banks, specialized money transfer services and/or the Post Office due to the advantageous position they have in terms of extensive outreach to clientele and their ability to offer a range of services including credit. This expansion of services through MFIs plus the growth of private sector transfer services like Western Union and Money Gram should create competitive forces that will reduce the cost of transferring remittances.

101. **There are several policy constraints on further or faster development of formal money transfer services.** Financial sector liberalization has increased the presence of and diversity of formal money transfer mechanisms, driving down unit costs and providing for quicker transfer mechanisms. However, UEMOA regulations limit amounts that can be transferred both internally and internationally (below US\$5,000, depending on zone). For rural areas, the greatest impediment to increasing formal remittance flows is the lack of basic financial service backbone. In addition, the potential benefits of remittances are mitigated by the high fees of wire services or lack of security of informal transfers.

#### **D. Savings and Credit**

102. **Modern financial instruments, including savings and credit, are essential tools for consumption smoothing and growth.** The poor need appropriate and sustainable financial services. Accumulation of savings in financial stores allows for more efficient consumption smoothing in the face of shocks, self-insurance against risk, safekeeping of wealth accumulation and increased credit worthiness. In addition to financing investment and growth, savings and credit are crucial to smoothing consumption in the face of emergencies. For example, research from Tanzania found that households respond to transitory income shocks by increasing child labor, but that the use of child labor as a buffer is lower when households have access to credit, even controlling for wealth and household characteristics (Beegle et al. 2003) In Indonesia, households that were situated in closer physical proximity to micro-finance institutions had significantly less decrease in consumption following a health shock, controlling for wealth affects, mainly due to the

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<sup>31</sup> The term used in Senegal '*structures décentralisés financiers*' includes micro-finance institutions, savings and credit unions, etc. This report uses 'microfinance institutions' MFIs as its equivalent.

savings effect of having financial services in close proximity.<sup>32</sup> Access to credit and savings mechanisms may also be important for education attainment and to permit economic diversification by capitalizing petty commerce activities, a critical aspect of income diversification in rural areas.

103. **Most rural savings are still ‘on the hoof’, although formal and informal financial savings are growing in importance.** From the PASEC survey of rural villages, livestock and small animals were the most common savings mechanism, but, over half of villages cited access to savings accounts and a significant percentage mentioned informal savings through tontines or holdings of cash. The survey found that 12 percent of rural households responded that a member had a deposit at a bank, credit union (*mutuelles d’épargne et crédit*) or other formal financial institution, versus 25 percent of urban households. Forty percent had savings in a tontine (versus 53 percent urban). Rural poor were far more likely to save in tontines than better-off rural households (57 percent of lowest quintile versus 18 percent in highest) (Statistical Annex Tables III.f and III.g).

104. **Credit sources are also largely informal, with most people depending on friends and family for loans.** For both urban and rural residents, family and friends or other individuals (probably private money lenders) account for most loans to households (23). Formal credit sources, including government agencies, agricultural development banks, commercial banks and credit unions provide only 9 percent of loans (in number not value) that rural residence say they have gotten, versus 20 percent for urban households. One concern about the reliance on informal sources, particularly on private individuals, is the usurious levels of effective interest rates and, in the case of shocks, the development of debt traps that may lead to further impoverishment.

Source of Loan	Rural	Urban
Other individual	31%	31%
Family/relative	21%	13%
Friends	21%	20%
Landlord/owner	6%	5%
Informal association	6%	5%
Credit mutual	3%	9%
NGO	3%	2%
Government agency	2%	3%
Cooperative	2%	1%
Tontine	2%	1%
Agricultural devel. bank	1%	3%
Commercial bank	1%	5%
Employer	1%	3%

*Source: PASEC data set / Bank estimates*

105. **The micro-finance industry in Senegal has flourished in recent years.** Over the last ten years the number of MFIs has grown from 18 to 724 organizations, including various types of savings and credit unions (*mutuelles d’épargne et credit MEC, groupement d’épargne et credit GEC*, etc.) and NGOs or poverty reduction projects that handle micro-finance. As of 2003, total client base was estimated at over 500,000,<sup>33</sup> with over US\$85 million in savings deposits and US\$115 million in credits. The overall portfolio is healthy, with a default rate below 3 percent among the main networks. There are 7 large networks

<sup>32</sup> For communities with a micro-finance (BRI) branch, health shocks had no net effect on consumption; in contrast consumption lowered by 2 to 3 percent in areas without a BRI. Savings, even in the relatively small amounts, were useful for consumption smoothing. (Gertler, Levine and Moretti 2002).

<sup>33</sup> As some ‘clients’ are savings groups, some estimates put the total number of individuals served by decentralized financial system at over 700,000 (IBM, 2004).

of savings and credit unions that regroup over 400 individual GECs and over 100 MEC. These networks account for about 85 percent of the micro-finance market.<sup>34</sup> Nominal interest rates currently average around 18 percent, but taking into account commissions, fees and obligatory savings, effective interest rates can reach 50 percent (IBM 2004).

**106. Micro-finance institutions tend to serve a poorer clientele than commercial banks, though they too face constraints serving the poorest strata of society and have a far greater presence in urban areas.** A 2001 survey of MFIs to assess targeting and impact found mixed results depending on which poverty measures were used. On dimensions related to human capital, MFI clients were better off than the Senegalese average; though on housing and access to land quality, clients tended to be worse off. Overall, micro-finance institutions that had more rural outreach were found to do the best job at reaching the poor (BCEAO/CGAP 2001). Constraints on expansion of MFIs in rural areas include low levels of literacy, dispersed population and difficult access, lack of collateral, and the inherent riskiness of agricultural production the Sahel. Nonetheless, some of the MFIs orient a significant portion of their portfolio to rural areas. For example, CMS estimates that about 25 percent of its portfolio is in rural areas (see Box 3 on CMS).

**107. The majority of rural households that obtain credit use it for consumption smoothing.** For both urban and rural households, personal uses – especially family consumption - account for over three-quarter of the loans taken (in number, not amounts). Households most often use credit to stabilize consumption and confront crises and to invest in social capital. Loans are taken more frequently to diversify sources of income out of agriculture (14 percent) than to invest in agriculture (9 percent). About 7 percent of loans went to finance health care and education (Statistical Annex Table III.f).

**108. Most funding of agricultural credit is provided through the semi-public commercial bank CNCAS, to finance seeds, fertilizers and other inputs for the agricultural year.** The MFIs play only a marginal role, providing about 4 percent of all agricultural credit. Over the agricultural seasons 1997/1998 – 2002/2003, the CNCAS injected a total of 67.5 billion CFA (US\$130 million). Most of this (80-85 percent) was for short term loans which finance inputs to that year's agricultural campaign. Some medium-term credit is available for equipment and commercialization credits for agricultural transporters. Except rice and horticultural produce which are cropped under irrigation conditions in the Senegal River Valley and the Niayes areas, the bulk of CNCAS short-term credit goes to rain-fed crops like groundnuts and cotton. Reimbursement rates tend to be very low and as low as 28 percent in 2002 when the country experienced drought that severely impacted groundnut production (Statistical Annex Table III.i).

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<sup>34</sup> These networks are: *Alliance de Crédit et Épargne pour la Production (ACEP) Crédit Mutuel de Sénégal (CMS), Union des Mutuelles du Partenariat pour la Mobilisation de l'Épargne et Crédit du Sénégal Réseau des Caisses d'Épargne et Crédit des Femmes de Dakar (RECEC/FD), Réseau des Mutuelles d'Épargne et Crédit de UNACOIS (REMECU), Union des Mutuelles d'Épargne et Crédit (UMEC), Union des Mutuelles d'Épargne et Crédit de UNACOIS (UMECU)*

## E. Insurance

109. **Insurance helps households mitigate the adverse effects on income and consumption of health crises, death, disability, old-age, crop loss, business failure and losses through theft, fire and accident.** Without access to formal market-based insurance mechanisms which allow for risk pooling, households must 'self-insure' against loss through savings and asset accumulation, use informal social-based arrangements, and/or face significant reductions in income and consumption in the face of these adverse events (or hope for emergency support from public safety nets). The vast networks of solidarity groups, significant expenditures on membership, gifts, ceremonies and the like can be viewed as one big informal insurance system, committing people to mutual obligation in times of need. The need to self-insure reduces opportunities for riskier and more profitable investments, and may lock assets into lower-return holdings. In addition, informal systems may be helpful for idiosyncratic shocks, but are less effective at covering covariate risks affecting the whole community, like drought and macro-economic shocks.

110. **Formal insurance mechanisms are extremely limited in Senegal, and virtually non-existent in rural areas.** Formal social protection, under the guise of social security and social insurance provides coverage almost exclusively to the public and formal private

### **Box 3: Micro-Finance in Rural Areas – the Experience of *Crédit Mutuel du Sénégal* (CMS)**

CMS is one of the three largest MFIs in Senegal, and with PAMECAS and ACEP, accounts for about three-quarters of market share. CMS was created in 1980 out of a program to support the creation of credit and savings mutuals largely among agricultural communities in the Groundnut Basin. Today, CMS has 71 member *caisses*, of which 42 are in rural communities. As of 2004, CMS had US\$57 million in deposits, of which 25 percent rural, and US\$40 million in outstanding loans, of which 30 percent rural. Savings have almost doubled and loans almost tripled over the last 3 years.

CMS builds rural savings and credit unions from the bottom up, with local populations forming '*caisses*' with a minimum of 300 members, administered by a local Administrative Council. CMS clients have access to three types of credit: (a) personal credit for purposes like purchase of durable goods etc, (b) professional credit, which in rural areas is mainly to finance the purchase of seeds and equipment, but can also finance commerce; and (c) a 'hungry season' credit initially designed to help finance consumption needs prior to harvest, although it has been rarely accessed for limited debt capacity of peasants. Most credit is short-term (under one year) and credit amounts are accorded in relation to savings capacity. Clients must save for at least six months before accessing credit, a maximum amount of 3 times savings.

CMS provides transfer services for salaries to government and private company workers posted to rural areas, as well as government pension payments. For rural teachers this has reduced the cost and time lost of going to the capital for monthly payment. Domestic and international money transfer services will begin offered in the coming months. In addition, CMS has joined with other MFIs in West Africa to form the recently created IMAO (*Institut Mutuel de L'Afrique de l'Ouest*), a commercial bank, to provide longer-term credit and attract capital not linked to member savings.

In terms of expanding access to rural populations, CMS management notes that the most significant constraint is the US\$30,000 average upfront installation costs (building, motorcycle, etc). Moreover, there is an on-going consolidation, or rather federation, of smaller, rural *caisses* which are merging with larger ones nearby to enhance the sustainability of rural finance.

(salaried) sector. For formal sector workers, who fall under the Labor Code, social insurance including health, retirement and disability coverage is provided by the autonomous *Institutions de Prévoyance Sociale* (IPS). These include the *Caisse de Sécurité Sociale* (CSS), the *Institution de Prévoyance Retraite du Sénégal* (IPRS) and the *Institutions de Prévoyance Maladie* (IPM). The CSS covers maternity, work-related accidents and illnesses. IPRES provides pensions, disability and life insurance and the IPM manages health care. For public sector employees, health coverage and other benefits are provided directly by the Ministry of Finance and pensions through the national retirement fund. Public and private social security in Senegal covers about 300,000 people, including about 5 percent of the rural population (ILO 2002).<sup>35</sup>

111. **The most active segment of the insurance market involves mutual health associations.** In Senegal, health mutuals are defined as non-profit associations that provide insurance to their members and their families to help support the costs of health care. This excludes private health care insurers by nature of their non-profit status and membership-based structure. Payment of monthly dues gives members the right to benefits defined by the particular association. Health mutuals are viewed as an alternative model to public financing of health, transferring cost from the public to the private sector, as well as a form of social protection to pool risks and to mitigate the cost of illness.

112. **Health mutuals have increased dramatically since pilot efforts in the mid-1980s and now count over 90 nationwide.** A recent survey of health mutuals undertaken by the Government of Senegal and the Canadian Research and Development Institute estimates 66,000 paying members and 220,000 total beneficiaries of existing health mutuals, or about 2.2 percent of the population.<sup>36</sup> These include those who join ‘complementary’ health mutuals formed by public sector workers’ associations to provide coverage for co-payments, purchase of medicines, and other expenses not covered under the public system, community health mutuals typically based in neighborhoods or villages, and professional mutuals organized mainly by informal sector professional associations, like artisans, women’s associations, etc. Despite the growth of health mutuals, researchers estimate that well under 10 percent of total beneficiaries are in rural areas.

113. **Several donor agencies, including USAID and ILO, work directly with private organizations to develop health insurance schemes.** For example, the ILO is supporting health insurance mutuals as part of its strategy to extend formal social protection systems to workers. Because income loss from health shocks undermines other social protection measures like long-term savings for old-age, Strategies and Tools Against Social Exclusion and Poverty (STEP) was initiated to develop appropriate health insurance models for the informal sector. With a Senegal country budget of about US\$ 400,000 per year, STEP supports the *Union des Cooperatives Agricoles du Senegal* (UNCAS) a farmer’s organization of 800,000 members to establish a social protection system, including health insurance. An initial pilot test in the Niayes region linked health posts, the health center of Tivaouane and the regional hospital in Thiès. A second pilot test in Diourbel was recently

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<sup>35</sup> The PSIA survey confirms this low coverage of formal old-age insurance, with an average of 1.9 percent of poor households and 1.5 percent of non-poor households receiving pensions.

<sup>36</sup> ILO estimates are slightly higher, at 120 health mutuals covering about 324,000 beneficiaries (Protection

launched. The first scheme covers about 1,200 people who pay 300 CFA each in monthly premiums for generic drugs, hospital visits, obstetric services, pre-natal check-ups and in-patient care hospitalization. STEP is also supporting PAMECAS (a micro-finance network of 130 000 members) to explore linking health insurance with micro-finance. After a pilot test 2003, PAMECAS plans to extend the experience more of its members of the network.

114. **The ultimate potential of community-based schemes is as yet untapped.** Benefits include protecting against the financial hardships imposed by illness, the freeing up of other self-insurance means (savings and credit) to be put to greater productive use, better health outcomes by encouraging timely use of services, and the potential to reach a wider client base than for-profit insurance providers. However, constraints include the ability to reach the poorest, exclusionary decision-making at the local level, limited scope of the risk pool for small community schemes exposing them to covariate shocks, and weak managerial and leadership capacity that threatens long-run sustainability. There appears to be potential to extend health insurance through the larger-scale producer cooperatives and federations due to the experience with collection of membership fees and administration. However, given membership patterns of producer cooperatives, these may exclude some of the poorest households. Micro-insurance offered through micro-finance institutions is another option, but its reach into rural areas will depend on MFI rural expansion.

**Box 4: Extending Health Insurance to Rural Areas - Evidence of Impact**

**Impact evaluation of mutual health insurance systems in rural Senegal shows that risk-pooling and pre-payment, no matter how small-scaled, can improve the financial protection for the poor.** The Thies region is home to one of the first community-based health insurance schemes in the country, initiated in 1990 around the services provided by a non-profit hospital, St. Jean de Dieu. Ninety percent of the schemes operate in the rural area. To join costs 1,000CFA per household and monthly premiums are between 100 and 200 CFA, or an estimated 2 percent of annual household income. Only hospitalization costs are covered (50 percent reduction in hospital costs). The share of households in each village that are members ranges from about 30 to 90 percent. An impact evaluation based on household surveys of members and non-members found that membership had a strong effect on the probability of going to a hospital when sick and a strong negative effect on expenditures in the case of hospitalization. Members stressed that health insurance led to a reduction in their worries. In the case of serious illness, they no longer depend on assistance from their social network or money from the local money-lender. However, there was little participation by the poorest households, who appeared not to be able to afford the premiums.

*Source: Jutting and Tine 2000*

## CHAPTER IV: Review of Public Policies and Expenditures on Social Risk Management in Rural Areas

*What is the main focus of public interventions to manage risk and shocks in rural areas? Which Ministries are involved? What is the level of expenditure, program coverage, targeting and geographical distribution of public social protection measures for rural populations? How aligned are these expenditures with the main rural risks?*

### A. Overview of Institutional Framework and Taxonomy of Programs

115. **Risk management activities are distributed across several ministries and agencies**, including: (a) Ministry of Family, Women and Social Development (MFFSD) and the Ministry of National Solidarity (MSN); (b) Ministry of Health and Medical Prevention; (c) Ministry of Education; (d) Ministry of Labor, Public Administration and Professional Organizations; (e) Ministry of Small and Medium Enterprise Development, Micro-Finance and Women Entrepreneurs; (f) Ministries in charge of agriculture, rural water and livestock; (g) Ministry of Interior; and (h) Ministry of Youth. These ministries account for 43 percent of the 2005 national budget (investment and recurrent), though only part of this is to manage rural risks.<sup>37</sup> The review covers 2003 actual expenditures and preliminary figures available at the time of review for 2004. Final figures on 2004 may vary depending on actual disbursements of authorized credits.

116. **This review covers expenditures specifically targeted to rural areas as well as national-scale programs that operate in the rural space.** The rural area cannot be looked at in isolation from national policies and programs. One of the challenges to the government of Senegal is not only to design interventions with relevance for rural areas but also to develop implementation mechanisms that ensure that rural populations receive fair coverage of programs that are meant to be national in scope.

117. **Social risk management programs have been classified into broad categories that relate to the type of risks they seek to address.** Programs with similar objectives are often divided among several ministries. The chapter is organized by type of intervention to better assess overall coverage, gaps and coherence of interventions:

- Social Assistance, Safety Nets and Disaster Management
- Managing Critical Agricultural Risks
- Managing Critical Health Risks
- Managing Critical Education Risks
- Employment Creation
- Targeting of Rural Infrastructure and Services
- Expanding Savings and Credit Mechanisms to Rural Areas

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<sup>37</sup>Also included are two programs under the Prime Minister's Office: the Nutrition Enhancement Project and the National HIV-AIDS Council and Technical Secretariat. Not included are: Ministry of Justice: which protects the legal rights of certain vulnerable groups and provide services for juvenile delinquents; Social Security System (INPRS, CSS), expenditures fall outside of the review as they are less relevant in rural areas. Information is not available on social programs funded by the National Lottery (LONASE), nor on ad-hoc transfers directly from the President's Office or through the Ministry of Local Government.

## **B. Social Assistance, Safety Nets and Disaster Management**

### **Overview of Institutions, Policies and Expenditures**

118. **Social assistance, safety nets and disaster management are meant to target individuals and households at heightened risk of extreme adverse outcomes.** These are the groups who are least likely to rebound from shocks and for whom vicious cycles create long-term poverty traps as assets are depleted and long-term damage is done to human and physical capital accumulation. This includes individuals in extreme poverty, children at-risk, displaced persons, the disabled, orphans, elderly without support, and people impacted by disasters. The majority of these groups live in rural areas.

119. **The focal point for disaster management is the Civil Protection Department of the Ministry of the Interior, supported by an ad-hoc institutional framework to provide emergency response.** As a first response, Civil Protection intervenes to protect from loss of life and stabilize the situation. In 2002, Civil Protection developed regional maps of main risks, including industrial accidents, transportation risks (auto, air, maritime, trains), fire, floods, auto and maritime safety, and crowd safety. Both the MFFDS/SN and NGOs like the Red Cross provide emergency supplies, cash and rebuilding materials. The Ministry of Agriculture responds to the after-effects on production capacity in the case of rural natural disasters (covered under the following section on agricultural risk).

120. **For social assistance and safety nets, the Ministry of Women, Family and Social Development (MFFDS) and the Ministry of National Solidarity (MSN) have the basic mandate to protect the most vulnerable families and individuals.** This area has known a great deal of institutional instability in recent years. The ministry was recently separated into two ministries and both have issued new policy orientations. The MFFDS's Letter of Sectoral Policy 2005 prioritizes actions towards children at risk, women, vulnerable families, the disabled, the elderly, and vulnerable communities. In addition, the MSN developed a "New Orientation of National Solidarity". Through its executing arms, the National Solidarity Fund (NSF) and the Commissariat of Food Security (CSA), the MSN will support: (a) social infrastructure in poor communities, (b) emergency assistance and food security to vulnerable groups, and (c) the creation of a National Solidarity Bank.

121. **The Government spent US\$43 million in 2004 on social assistance, safety nets and disaster management, including US\$22 million in poverty-focused community development programs under the MFFSD.** The more traditional social assistance and disaster management totaled almost 20 million (Table 24). Recurrent expenditures of MFFDS/SN including social assistance transfers to vulnerable groups were about US\$12 million. Over \$US20 million financed multi-sectoral community development projects supported by external partners. These are included here because they are under the tutelage of the MFFDS and target vulnerable communities, even though the bulk of investments are in small-scale infrastructure or credit rather than social assistance.

**Table 24 : Estimated Annual Expenditures on Social Assistance and Safety Nets<sup>38</sup>**

Ministry/Expenditure Area/Program	2003	2004
<b>Ministry of Women, Family and Social Development/Ministry of National Solidarity (MFFDS/SN)</b>		
Personnel	1,463,266,000	1,472,158,000
Non-Wage Recurrent	835,306,000	1,075,508,000
Transfers, total: :	1,265,338,000	1,678,338,000
<i>Of which: Minister's Office (general transfer)</i>	<i>300,000,000</i>	<i>300,000,000</i>
<i>Commissariat for Food Security<sup>39</sup></i>	<i>630,338,000</i>	<i>780,338,000</i>
<i>Social Action transfers</i>	<i>335,000,000</i>	<i>335,000,000</i>
<i>Street Children</i>		<i>50,000,000</i>
<i>Disabled</i>		<i>50,000,000</i>
<i>Elderly</i>		<i>100,000,000</i>
<i>Other</i>		<i>63,000,000</i>
<b>Total Recurrent</b>	<b>4,829,248,000</b>	<b>5,904,342,000</b>
<b>Investment MFFDS/SN</b>	<b>10,713,295,000</b>	<b>14,041,700,000</b>
<i>Of which : National Solidarity Fund</i>		<i>650,000,000</i>
<i>Support to Disadvantaged Groups</i>	<i>757,518,000</i>	<i>558,700,000</i>
<i>Support to Women's Groups</i>	<i>325,777,000</i>	<i>300,000,000</i>
<i>National Documentation Center for Women</i>	<i>42,000,000</i>	<i>10,000,000</i>
<i>Fight Against Child Exploitation</i> <i>(of which UNICEF)</i>		<i>219,000,000</i> <i>(219,000,000)</i>
<i>Small Credits to Women</i> <i>(of which Taiwan)</i>	<i>1,000,000,000</i>	<i>1,200,000,000</i> <i>(700,000,000)</i>
<i>- Agence de Fond de Développement Social (AFDS)</i> <i>(of which IDA)</i>	<i>2,548,000,000</i> <i>(2,250,000,000)</i>	<i>5,272,000,000</i> <i>(4,972,000,000)</i>
<i>-Fight Against Women's Povert (PLCP)</i> <i>(of which BAD, FND)</i>	<i>6,040,000,000</i> <i>(5,292,327,000)</i>	<i>5,444,000,000</i> <i>(5,144,000,000)</i>
<i>- Fight Against Poverty</i> <i>(of which PNUD)</i>		<i>388,000,000</i> <i>(351,000,000)</i>
<b>Ministry of Interior (BCI)</b>	<b>1,851,000,000</b>	<b>1,616,000,000</b>
Prevention and Management of Catastrophes	171,000,000	166,000,000
Fire Protection (construction, equip.)	1,680,000,000	1,450,000,000
<b>Total CFA</b>	<b>17,393,543,000</b>	<b>21,562,042,000</b>
<b>Total US\$</b>	<b>34,787,086</b>	<b>43,124,084</b>
<b>Of which externally financed</b>	<b>43%</b>	<b>53%</b>

Source: DDI, donor agency reports. Note: All of the MFFSD/SN operating budget and transfers included. Does not include CFA 250 million in 204 through Ministry of Justice for a building for youth in conflict with the law. Also does not include an ILO-managed program against child labor in the Ministry of Labor and Public Administration as no expenditures were reported in the BCI.

122. **Spending on social assistance and safety nets, not including the community poverty investments and fire protection, amounted to about 0.15 percent of GDP in 2004.** During recent drought years (2002-2003), this rose to 0.5 percent of GDP reflecting emergency food and materials to support rural populations (see Box 4.<sup>40</sup> The Government

<sup>38</sup> Does not include the emergency distribution of rice to rural areas in 2002-2003 under *Programme d'Assistance au Monde Rural* via extraordinary expenditure for US\$22 million in 2003 (see Box 5).

<sup>39</sup> Of which 380,338,000 in direct food purchase and the remainder to support CSA functioning.

<sup>40</sup> Additional resources are channeled directly to farmers to respond to shocks to production, described in the following section on agricultural risks. Farmer support programs are not typically included in social assistance estimates, but if they were the figure for 2004 for social assistance and safety nets would rise to 0.58 percent of GDP.

spends an additional 0.85 percent of GDP on social security for public sector workers, bringing the total of social security and social protection to about 1 percent of GDP. As incomes rise, spending on safety nets tends to increase as a share of GDP, although there are significant variations within regions and between regions. In a 2003 benchmarking exercise which compared public expenditures on social security and welfare (slightly different definition to one used above) in over 63 countries from 1972-97, Senegal spent an estimated 1.16 percent of GDP (Table 25). This is slightly lower than the Sub-Saharan average despite Senegal having a per capita income slightly above the SSA average.

**Table 25 : Comparative Safety Net and Social Insurance Expenditures as % of GDP**

Senegal	1.16
Sub-Saharan Africa	1.44
South Asia	1.49
East Asia and Pacific	2.373
Latin America and Caribbean	2.91
Middle East North Africa	4.66
Eastern and Central Europe	10.31
North America	11.19
Western Europe	13.57
<i>Source: Besley, Burgess and Rasul 2003</i>	

### Emergency Response to Natural Disasters

123. **Emergency relief from local flooding has been the main disaster response in 2003-2004.** Overall, the Government support was at least US\$2 million with additional support from the Red Cross. Although information is limited and depends on the specific emergency. A rough estimate of the cost per person has averaged \$30-\$120. Responses by agency include:

- (a) **Civil Protection:** The investment budget reserves 300,000,000 CFA (US\$ 600,000) per year for expenses in response to disasters and spent an additional US\$3 million annually on fire protection in 2003-2004 including buildings and equipment.
- (b) **National Solidarity Fund** was created in 2002 as an autonomous agency under the then-MFDSSN to provide support to the critically poor through a start-up budget of 1 billion CFA (US\$2 million), and a mandate to raise funds privately as well.<sup>41</sup> The first actions were in response to the 2003 floods in the region of Matam and Tambacounda, providing tents, blankets, mattresses, lamps, rice, and other basic needs, as well as financial compensation (Statistical Annex TableIV.a).<sup>42</sup> Governors transmit overall needs and Sub-Prefects identify individual beneficiaries and distribute goods locally. Commissions of local authorities and deconcentrated staff are in charge of reconstruction of destroyed houses, with the FSN providing equipment for reconstruction. FSN has spent about US\$1.3 million to date.
- (c) **MFFSD Social Action Department (DSA) and the CSA.** In the case of shortfalls, the DAS and CSA can intervene with emergency support based on their food and grain stocks. For example, in response to the late rains in 2003, the CSA sent part of its cereal stock from 2002 to Matam, Saint Louis and Louga to feed livestock.
- (d) **The Red Cross of Senegal:** The Red Cross has a community-based approach to disaster response, built on a structure of local voluntary committees. The Red Cross

<sup>41</sup> Local fundraising on the first Day of National Solidarity March 4 2005 collected CFA 431,000,000 million from government officials, embassies and other benefactors to be used in future programs of FSN.

<sup>42</sup> 100,000 CFA for death and 5,000 CFA per injured.

intervened in December 2003 with the floods in Saint Louis (assisted 500 families), in early 2004 in Matam (1,341 families), and in mid-2004 in Kanel (1,126 families), with rice, tents and bedding, mosquito nets, emergency medicines and reconstruction materials. The Government provides seconded staff and some operating funds to the NGO, and the Red Cross raises funds internationally.

### **Social Assistance to the Handicapped, Elderly, Orphans and Others in Need**

124. **Assistance to associations and individuals, totaling almost US\$2 million in 2004, is treated on a case by case rather than programmatic basis.** Requests for social assistance typically in the form of letters from individuals or groups/institutions are presented either directly to the Minister's Office, to the main office of the DAS or channeled through the regional services.<sup>43</sup> Support can be in the form of equipment or vocational training for the disabled, grants to organizations and individuals, cash or food assistance,<sup>44</sup> or payment of medical bills for the indigent through four hospitals in Dakar. In 2004, out of 3,547 requests received by the DAS, 910 were approved. The average amount financed per request is 550,000 CFA. In 2004, the DAS provided 200 disabled persons with equipment and financed 48 associations of disabled people, supported 160 training-oriented structures for children (including to *daara* to improve conditions of the *talibés*), supported 133 widows and orphans, placed 200 at-risk children into educational and training programs, and funded 97 income generating projects for elderly (Statistical Annex Table IV.b). Assistance covers only about one-quarter of the requests officially received an insignificant portion of the target vulnerable groups and few rural residents.

### **Children-at-Risk**

125. **Assistance to children-at-risk is provided in addition through two programs to fight child exploitation:**

- (a) Project Against the Worst Forms of Child Labor, through the MFFSD supported by UNICEF and the Italian government, seeks to improve the situation of children in dangerous or exploitative work in 6 regions (Dakar, Thies, Saint-Louis, Louga, Fatick and Ziguinchor). The project has provided professional training for 480 girls in Fatick, literacy training for 1,370 girls at-risk, educational materials for 800 children, the construction of 3 health posts, and a pilot to eradicate child begging.
- (b) Child Labor Program: A child labor program supported by ILO with US financing executed by a project unit in the Ministry of Labor seeks to help 3,000 children under 18 get out of dangerous work situations, including begging, domestic workers, and dangerous jobs in agriculture, fishing and livestock, as well as prevent 6,000 others from entering, supporting 1,000 families in the Fatick, Saint Louis, Thies, Diourbel, Kaolack and Dakar (average cost of about \$75 per child per year). The program supports the legal framework, training and assistance to families.

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<sup>43</sup> The DAS has 42 Centers for Social Promotion and Reinsertion staffed by social workers as well as personnel seconded by local governments or recruited by the Community Management Committee of each center. These centers, of which 12 are in Dakar and 30 in other regions including two located in rural communities, provide outreach services to address social needs.

<sup>44</sup> The DAS channels donations (muttons and dates) from Saudi Arabia for distribution to the poor.

## Support to Vulnerable Women

126. **The MFFSD assists women's groups through subsidies to women's associations, direct provision of goods and equipment, and small credits, including:**

- (a) Project to Support Vulnerable Groups, financed by the GOS ostensibly to help women reduce onerous work (e.g. by providing millet grinders, water pumps, drip irrigation). The MFFSD purchases directly the goods, valued at over US\$1 million annually, and distributes to women's groups. In 2003-2004 the bulk of purchases went for computers, office furniture, tee-shirts, refrigerators, etc.
- (b) The Program of Small Credits to Women's Groups, supported by the Government of Taiwan and GOS, helps women generate income through credit and training. During 2001-2004, a credit line of 3.1 billion CFA financed small loans to women entrepreneurs at 5 percent interest and, via CNCAS, a guarantee fund for larger loans at 8 percent interest. In 2003, 567 projects were financed for 1.6 billion CFA, with 40 percent in Dakar. The need for guarantees tends to exclude the poorest.
- (c) Support to NGOs, as *tutelle* the MFFSD oversees NGOs interventions including women's associations. In 2004, the Community Development Department approved 24 projects (average cost US\$25,000) presented by women's groups in health, education, water supply, and income generation and micro-credit.

127. **The bulk of MFFSD investments are executed through three externally-financed community development projects that work mainly in rural areas, combining training, credit and infrastructure:**

- (a) Project to Fight Poverty (*Projet de Lutte Contre la Pauvreté-PLCP*): a \$21.5 million project financed by BAD and NFD to support community groups in Tambacounda, Thies, Kolda, Diourbel, and Dakar in literacy training, income generating activities via a credit line of CFA 1.4 billion channeled through MFIs, and small-scale infrastructure (executed by AGETIP). Different credit windows exist for individuals, associations and enterprises with different loan sizes and interest rates (12 to 14 percent). From March 2003 to February 2004, 18,500 loans went to 36,900 beneficiaries for 1.6 billion CFA, with a recovery rate of 48 percent.
- (b) Social Development Fund Agency (*Agence de Développement Social- AFDS*): US\$30 million IDA-financed program in poor communities in Louga, Fatick, Kolda, Kaolack, and Dakar that supports small-scale infrastructure executed directly by communities, income generating activities through CBOs and institutional strengthening to MFIs to improve their outreach to rural areas. In 2004, AFDS financed 226 infrastructure projects (CFA 3.3 billion), mainly in health, education and water supply and 332 income-generating projects (CFA 1.4 billion) in livestock, agriculture and commerce (see Figure 9 for targeting performance).
- (c) Program for Poverty Reduction (*Programme d'Appui à la Réduction de Pauvreté - PAREP*): a UNDP-financed \$4.5 million project initiated in mid-2004, building on the *Programme Elargi de Lutte contre la Pauvreté* that had previously operated in Dakar, Diourbel, Saint Louis and Tambacounda to support local planning, provide training and credit to women (through MFIs) and build small-scale infrastructure.

## General Food Assistance

128. **The Commissariat for Food Security (CSA) ensures food security through food distribution and monitoring of country conditions.** The CSA used to stabilize prices by purchasing cereals at peak production times and selling grains in food deficit times particularly during the hungry season to prevent price spikes in periods of scarcity. This program ended with the liberalization of cereal markets in the early 1990s. CSA currently produces a monthly food security bulletin on regional grain prices, rainfall, agricultural production, grazing pastures, population migrations and remittances through the Post Office, and health, including malaria cases and nutritional status. Information is gathered through local Food Security Committees headed by the Sub-Prefects.<sup>45</sup>

### Box 5: Who Receives Assistance?

From household surveys it appears that assistance to rural populations is widespread. However, the figures are complicated by the emergency events in 2002-03 which were one of the largest relief efforts in the last ten years in response to failure of the rains in certain regions. The Government authorized purchases of 10.8 billion CFA in 2001-02 and 11 billion in 2002-2003 for distribution through MFDSSN under the Program to Assist Rural Areas (*Programme d'Assistance au Monde Rural*), involving distribution of 60,000 tons of rice in 2002 and 50,000 in 2003 to help rural families survive through the hungry season. In 2003 the program estimated that 3 million people (half of the rural population) needed assistance of a daily ration of 250 grams of rice for 3 months. The PASEC and PSIA household surveys reflect the widespread nature of this support, with almost all rural households surveyed responding that they had received assistance from the state, though in the case of the PASEC survey it appears that the poorest were less likely to have received help. There is no information on how much was received or from which program, and anecdotal evidence suggests some of this form of help is routinely distributed by local politicians to garner support. NGO interventions were negligible.

	Q1	Q2	Q3	Q4	Q5	Poor	Non-Poor
Received 'help' from Government (PASEC-all rural)	76%	82%	91%	84%	94%		
Received food assistance -all sources(PSIA groundnut basin)	90%	92%	90%	92%	86%	91%	90%
Received assistance from Gov't-all kinds (PSIA)	85%	88%	87%	87%	85%	86%	87%

129. **CSA handles most of the Government's direct distribution of food.** There are four on-going food assistance programs: (a) ad-hoc assistance to populations affected by natural disasters or supported through requests to DAS (discussed above), (b) regular rice distribution through the CSA, (c) limited amounts of food aid used within targeted programs in health and community development (via US Food for Peace and WFP), and (d) a school feeding program supported by WFP, Italy and GOS (discussed in the section on educational risks). Most direct food distribution of CSA is for the AVCER (Food Assistance to Religious Ceremonies). In 2004, CSA distributed over 5,000 tons of rice,

<sup>45</sup>In 2003, Senegal joined the international Famine Early Warning System (FEWS), funded by USAID, which collects data from CSA, MOA, National Meteorological Service, Center for Ecological Monitoring (CSE), WFP, FAO. Information is primarily used to program support from USAID and WFP.

mostly at religious events (Statistical Annex Table IV.c). Allocations are based on requests through the regional Governor's Office or directly to the central level, but information is not available on number or location of beneficiaries. A small was used for emergencies.

### **General Observations**

#### **130. Observations on social assistance, safety nets and disaster management are:**

- (a) **There is an active network of government and non-governmental organizations to respond to emergencies but responsibilities overlap.** The entry into disaster relief of the NSF has improved availability and timeliness of funds. But, at the ground level, the parallel approaches of community committees and top-down distribution through local officials can reduce efficiency. Coping strategies in flood-prone areas should not overshadow the need for preventative investments like flood control and development of mitigation mechanisms like insurance.
- (b) **Social assistance and safety net operations suffer from a dispersion of efforts and multiplicity of actors and approaches.** There are several windows of assistance for individuals and groups, with overlapping mandates, different criteria, mechanisms and program rules, and little coordination. Donor-financed programs remain in silos with few contacts between each other or with the transfer programs of the MFFSD, missing opportunities for synergies and institution building.
- (c) **Targeting criteria appear loosely defined and monitoring and evaluation is seriously under-resourced, particularly for domestically-financed programs.** The identification of all women, disabled, elderly and children as vulnerable dilutes program focus. Food distribution is not viewed in a risk management focus (i.e. programmed in accordance with agricultural production cycles or distributed via criteria generated through the food security bulletin). Moreover, there is little effort to evaluate the cost-effectiveness or impact of the assistance provided.
- (d) **The role of the FSN is unclear.** The FSN is preparing to build basic infrastructure in underserved communities, to create a National Solidarity Bank to provide subsidized credit to the poor, and even provide support to needy individuals (through a fund for medical emergencies). This appears to duplicate on-going programs of the MFFSD (AFDS, DAS). The division into two ministries creates inefficiencies and coordination challenges in social assistance and disaster management programs.

### **C. Managing Critical Agricultural Risks**

#### **Overview of Institutions, Policies and Expenditures**

131. **The public sector helps rural producers manage natural and economic risks.** The main natural risks to agriculture are drought, floods, locust and other infestations, and disease. The majority of the rural population is at risk for loss of production through extreme drought on average about every five years, with below average rainfall levels occurring one year out of three. Selected populations suffer from the other risks.

132. **In June 2004, the Government adopted the *Loi d’Orientation Agro-Sylo-Pastorale*.** Its policy orientations are to: (i) reduce the impact of economic, climatic and environmental risks; (ii) improve revenue and living conditions of rural populations; and (iii) improve the quality of life of rural populations. The law introduces a greater attention to risk management instruments and calls for a social security system for agricultural workers as well as protection against natural calamities and development of crop insurance.

133. **The Ministries in charge of Agriculture and Rural Water and Livestock have the primary responsibility for addressing agricultural risks.** The central levels of these ministries are supported by regional Directorates of Rural Development (DRDR, for agriculture) and regional veterinary services (*Inspections régionales des services vétérinaires*, IRSV), as well as departmental rural development and veterinary services. Advice and technical assistance is provided through the semi-autonomous National Agency for Rural and Agricultural Extension (ANCAR). The Ecological Monitoring Center (*Centre de Suivi Ecologique – CSE*) provides information for the management of natural resources, including mapping and satellite imagery used to monitor and predict shocks. Local actors, including local government (*Communautés Rurales*, CR) and producer organizations through the *Conseil National de Concertation et de Coopération des Ruraux* (CNCR) play an increasing role in managing agricultural risks.

134. **Overall expenditures on agriculture, livestock and related rural production amount to US\$152 million in 2004 (Table 26).** In 2004, the rural sector, including agriculture, livestock, fishing, forestry and rural water, accounted for 15 percent of the internally-financed investment budget and 24 percent of internal and external resource combined (see Statistical Annex Table IV.d). Specific risk mitigation and coping programs account for about 10 percent of total expenditures.

### **Prevention of Shocks to Agriculture**

135. **Many projects in the investment budget support the general development of agriculture, contributing in various ways to the prevention of shocks.** The bulk of investments in agriculture and livestock are to increase productivity through irrigation, improvement of technologies, and support to the development of producer organizations. Irrigation-related investment projects alone account for between 40-60 percent of the annual investment budget of the Ministry of Agriculture (between \$20-50 million per year). However, given the limited potential of irrigated land in terms of total hectares and population with access to irrigated land, these investments are trained on a fairly narrow range of the existing agriculture sector. Smaller programs to prevent certain diseases and infestations, like veterinary services, control of white fly (*bemisia*) and others account for under US\$1 million per year.

**Table 26 : Estimated Annual Expenditures on Disasters and Agricultural Risks**

Ministry/Expenditure Area/program (1)	2003	2004
<b>Recurrent budget -rural sector (ag/livestock, fish forest)</b>	<b>13,135,000,000</b>	<b>16,320,000,000</b>
<b>Investment (BCI)</b>		
<b>Total Ministry of Agriculture</b>	<b>24,686,000,000</b>	<b>45,281,000,000</b>
Irrigation projects	9,802,000,000	25,374,000,000
Support to producers organizations	748,000,000	1,300,000,000
Intensify and Modernize agriculture	8,999,000,000	11,228,000,000
<i>Of which Fonds de Bonification</i>		900,000,000
Promote Commercialization and Distribution	945,000,000	579,000,000
Promote Agro-Industry	3,287,000,000	6,756,000,000
<i>Of which Fond de Garantie</i>	500,000,000	3,100,000,000
<i>Fond de Calamité (2)</i>	1,556,000,000	4,500,000,000
Program to Combat Mouche Blanche	41,000,000	0
Program to combat termites	50,000,000	44,000,000
Program to Combat Aquatic Plants	814,000,000	0
<b>Total Ministry of Livestock:</b>	<b>2,329,000,000</b>	<b>3,706,000,000</b>
<i>Of which veterinary services/control of animal diseases</i>	480,000,000	434,000,000
<b>Total Min. Natural Resources and Environment</b>	<b>2,675,000,000</b>	<b>10,708,000,000</b>
<i>Of which Combat Brush Fires</i>	95,000,000	164,000,000
<b>Total (CFA)</b>	<b>43,325,000,000</b>	<b>76,015,000,000</b>
<b>Total (US\$)</b>	<b>\$86,650,000</b>	<b>\$152,030,000</b>
<b>Specific Risk Mitigation and Coping (CFA) (3)</b>	<b>3,536,000,000</b>	<b>9,142,000,000</b>
<b>Specific Risk Mitigation and Coping (US\$)</b>	<b>\$7,072,000</b>	<b>\$18,284,000</b>

(1) Note: Does not include groundnut price supports (para. 134)

(2) Of which 3 billion CFA LFR (Mid-Year Budget Supplement) Locust Invasion.

(3) Includes the three funds (calamity, bonification and guarantee) and programs to control fires, pest and parasites

136. **In addition, the Ministry of Livestock recently announced the launch of a program to limit livestock theft.** With an estimated cost of 1.7 billion CFA, the program would put in place a system for identifying livestock. The Government carried out a test in two regions in 2001 and 2002, building on experience in other countries like Guinea. The system registers livestock by attaching an identifier to the ear with information on village, CR, region, and owner, linked to an owner's card.

### **Agricultural Risk Mitigation and Coping Mechanisms**

137. **Following intensive and countrywide consultations on agricultural credit series of financial mechanisms were put in place in the late 1990s to mitigate and cope with risks to agriculture and to seek to ensure an adequate flow of credit to the sector:** They are collectively known as the Funds for Security of Agricultural Credit (*Fonds de Sécurisation du Crédit Agricole FSCA*).

- (a) The *Fonds de Bonification (FB)* was created to improve access of rural producers to credit, reduce the financing charges they face and thereby increase profitability of agriculture. The FB finances the difference between the interest charged by

- commercial banks (13 percent for the CNCAS) and the interest rate the Government limits to farmers of 7.5 percent. The Government pays the spread to the CNCAS.
- (b) The *Fonds de Garantie (FG)* covers part of the credit risk of agricultural and livestock loans under the justification that financial institutions would not lend to rural producers as the risk premium is too high. Delinquent loans at CNCAS are reimbursed up to 75 percent for agriculture and 50 percent for livestock. Only CNCAS so far has benefited from the FB and the FG.
- (c) The *Fonds de Calamité (FC)* is to assist rural producers cope with natural calamities, allowing them to repay loans and continue their agricultural activities. The FC is managed directly by the Ministry of Finance and can be accessed either to restore producers to creditworthiness at CNCAS or to finance supplies necessary to respond to shocks to agricultural production, such as the purchase of pesticides in the recent locust invasion. There are no clear rules for the use of these funds. Complex administrative procedures delay payments (for example compensation to banana producers for the 2002 floods has not been given yet). Over the last 4 years, payments have been made in 2000/2001 for cotton producers affected by white fly, for banana producers in Tambacounda affected by flooding in 2003/204, to clear the unpaid debt of producers for the agricultural season 2001/2002 and 2002/2003 due to globally insufficient rainfall, and to mitigate the costs of the locust infestation in 2004/2005 (see Box 5 on the 2004 locust swarm).

#### **Box 6: Managing Risks Associated with Desert Locust Swarms**

Desert locust swarms in 2004 prompted a region-wide response to cope with the current infestation as well as set up regional early warning and prevention systems to reduce the impact of future infestations. In 2004, IDA approved a region-wide Locust Emergency Project (US\$60 million) covering seven countries in West Africa. The Senegal portion would finance emergency assistance and long-term institutional capacity building, for a total program amount of US\$12.4 million. Its objectives are to reduce the hardships imposed on people and the environment by current and future locust invasions. 2004 contributions to Senegal's Desert Locust Program are estimated at US\$39 million: GOS (US\$9 million); other donors (US\$12.5 million) and FAO Trust Fund (US\$25 million).

The failure of the affected countries and their partners to maintain a minimal capacity during the long remission phases has resulted in a weakened system unable to respond in a timely fashion to prevent the current upsurge. To address this, a permanent facility would be put into place to provide early warning and prompt preventive actions in the future, and to ensure that control operations are triggered based on a realistic assessments of risks. For control activities, the evidence suggests that more targeted control programs focusing on areas planted to high-value crops and sprayed accurately may have a much higher cost-benefit ratio than large-scale campaigns.

Source: Technical Annex, Africa Emergency Locust Project (T7645-AFR) World Bank 2004

**Table 27: Financing of Funds for Security of Agricultural Credit 1998-2004, in CFA**

	Guarantee Fund (FG)	Bonification Fund (FB)	Calamity Fund (FC)	Total Financing
1998	400,000,000	300,000,000	300,000,000	1,000,000,000
1999	1,925,000,000	700,000,000	225,000,000	2,850,000,000
2000	2,100,000,000	700,000,000	300,000,000	3,100,000,000
2001	3,100,000,000	900,000,000	3,500,000,000	7,500,000,000
2002	3,000,000,000	202,500,000	-	3,202,500,000
2003	500,000,000	-	1,556,000,000	2,056,000,000
2004 (prelim.)	3,100,000,000	900,000,000	4,500,000,000	8,500,000,000
<b>TOTAL</b>	<b>14,125,000,000</b>	<b>3,702,500,000</b>	<b>10 381,000,000</b>	<b>28,208,500,000</b>

Source: Ministry of Finance

138. From 1998-2004, 28 billion CFA (US\$56 million) was allocated through these funds to mitigate and cope with shocks to rural producers. This amount is about 64 percent of the total programmed amount of 43.5 billion CFA that was included in the three year public investment program (PTIP) for the 3 funds. Per Table 27, over half was used to finance delinquent loans, one-third for calamities, and the remainder to subsidize interest rates.

139. 2004 was the most active year to date, amounting to 10.2 billion CFA (US\$20.4 million). Per Table 28, 41 percent was to respond to the locust infestation through the FC, 34 percent went to forgive debts of rural producers, with the remainder to forgive debts of producers affected by the out-of-season rains, to help banana producers cope with flood-induced losses and payments to CNCAS to finance the interest rate spread. At present, there are accumulated 'deficits' in both the FG and FB. Full payment to cover guarantees applied to delinquent loans and interest rate spreads has been less than what should have been transferred, with a shortfall of 32 percent in the FG and 12 percent in FB (Statistical Annex Table IV.e).

Destination	Amount	%	Source
Locust Response	4 200 000 000	41%	FC
Out of season rains	1 100 000 000	11%	FG
Banana Producers	530 200 000	5%	FC
Producers' Debts	3 443 500 000	34%	FC&FG
CNCAS	900 000 000	9%	FB
<b>Total</b>	<b>10 173 700 000</b>	<b>100%</b>	

Source: DDI

140. It is difficult to assess the overall impact of the FSCR mechanisms. Given both the natural shocks and the changes in the commercialization systems, agriculture has been under extreme stress and the various funds have kept some measure of credit flowing. But, they do not properly address longer-term sector creditworthiness and solvency issues. They enable the Government to respond when natural disasters occur, but work less well when it comes to helping people recover their lost activities/assets. The FB appears to have increased the profit of farmers that benefit from lower interest rates. In assessing the impact on a subset of rice producers, profit margins were increased by between 1 and 5 percentage points (Statistical Annex, Table IV.f).

141. **There has been continued erosion in the overall portfolio of the CNCAS.** The total capital lent to agriculture through CNCAS has decreased from a high of almost 14 billion CFA in 2000 to about 8 billion in 2003 (Statistical Annex, Table IV.g.). Delinquent loans rose from about 2.5 billion CFA in 1997–99, peaking at an average of 5 billion CFA in 1999-2001, and easing to 3.5 billion CFA in 2001-03. The average repayment rate was 70 percent which may reflect the moral hazard risk of anticipated debt forgiveness.

### **Other Support to Agricultural Producers**

142. **Groundnut price and commercialization risks are mitigated through a producer price support facility created in 1997.** The facility (*Compte de Soutien au Prix de l'Arachide*) was put in place through an agreement signed between the Government and the EU. The facility was established to cover (i) the negative balance resulting of the overall subsector deficit at the end of the marketing campaign, (ii) any difference between the agreed producer price at the beginning of the crop season and the resulting effective world price for groundnut oil; and (iii) any covariant losses resulting in natural disasters that hinder the viability of the subsector. Initial financing of 5.25 billion CFA came from the national budget (CFA 2.05 billion) plus 3.2 billion CFA from STABEX. The facility replenishment is to come from a special tax on imported crude and refined oil and from a positive balance of the subsector at the end of the marketing campaign. The facility, which reached about CFA 9 billion in 2002, has been used to compensate producers who have been left with unpaid bills by intermediaries (*bons impayés*) in 2001/2002, to fund advances to SONACOS and NOVASEN to cover deficits and to guarantee credit of CNCAS. An external audit noted a lack of clear criteria of application of the facility.

143. **The State intervenes to reduce the cost of agricultural inputs.** This includes subsidies of groundnut seed prices, support to the re-activation of corn and manioc production and the acquisition of fertilizer and equipment. Over the last ten years, the Government has managed a stock of about 40,000 tons of groundnut seeds per year. In 2000/2001, the Government distributed 70,000 tons of free groundnut seeds to producers in the face of difficulties producers had of repaying seed credit. The State again subsidized seeds in 2003/2004 to producers, equal to about 2/3 of the commercial seed price.

### **General Observations**

144. **Early warning systems permit a more planned and less costly response to mitigate or cope with shocks to agriculture and rural production.** Public expenditures to cope with climate shocks on rural production are very high and the instruments fairly imprecise. In 2004, more than \$US26 million was mobilized to address the locust infestation, a shock which in the end affected about 20 percent of rural households. Transaction costs of mobilizing emergency external assistance are not insignificant and delays in provision of financing or goods mean that farmers have already had to exercise informal coping mechanisms long before assistance arrives. Compared to the annual budget of the Department of Plant Protection of US\$1.1 million, better early warning systems and prevention would increase efficiency.

145. **Experimentation with new mechanisms to mitigate and cope with risks has yielded some lessons and cautions for future use.** Delays in providing loans to producers well as time lag in accessing relief and compensation are major shortcomings that reduce effectiveness in implementation. Furthermore, it is not clear the extent to which these instruments actually reach the poorer farmers. Multiplicity of instruments adds complexity to the system as a whole and reduces probability that the poorest producers benefit. Moreover, the lack of clear criteria and operating procedures makes it difficult for farmers to count on this support, opens the door to inefficient uses and is likely to penalize the less educated and least connected, i.e. the poorest. Moreover, decisions like forgiving all producer debts do not match the differential nature of the shocks which rarely hit all producers.<sup>46</sup> Limited recourse to formal credit for many rural families limits effectiveness of this measure as it cannot be applied to informal credit arrangements.

146. **Senegal is in need of a sustainable financing system for agriculture.** Lack of recovery of outstanding loans is high, in part due to calamities (drought, insects, floods etc.). But also, a culture of non-repayment that has gradually installed itself in the rural areas, possibly in response to political promises of debt relief to farmers. The erosion of producer prices and low profitability of traditional rainfed agriculture have further exacerbated repayments. And, the guarantee scheme itself may weaken CNCAS incentives to recover outstanding loans.

#### **D. Managing Critical Health Risks**

##### **Overview of Institutions, Policies and Expenditures**

147. **Senegal will have difficulty reaching the health-related MDGs, particularly because of challenges in the rural areas.** Infant and maternal mortality, malnutrition and malaria are more prevalent in rural areas, compounded by household factors including greater exposure to natural and agricultural shocks, lower education levels, and less access to savings and credit mechanisms to mitigate health shocks.

148. **The 1998-2007 National Health Development Plan (*Plan National de Développement Sanitaire 1998-2007-PNDS*) identifies the main policies and strategies for improving health outcomes in Senegal.** A recent evaluation of PDIS found mixed results, with increased availability of cost-effective interventions and essential drugs at health posts, an expansion in capacity and better management of hospitals, but insufficient access to health services for rural populations, insufficient coordination with communities and private sector, over-centralization of resources, and high financial barriers to health services. Only one-quarter of the new health posts planned at the beginning had been realized. As a result, the Government issued *the Plan National de Développement Sanitaire (PNDS): Phase Deux 2004-2008* which seeks to address these issues by considering both supply and demand sides as well as by improving accessibility, efficiency, quality and sustainability of health services, especially in remote areas.

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<sup>46</sup> CMS estimates that 60% of agricultural loans had already been paid back at the time debt cancellation.

149. **Other government agencies also execute health expenditures.** The National HIV-AIDS Council's Technical Secretariat under the Prime Minister's Office channels funding to several government agencies and NGOs for HIV/AIDS prevention and treatment. The Prime Minister's Office also manages the Nutrition Enhancement Project. In addition, local governments, through own resources or through fiscal transfers, finance a good deal the drugs and equipment in health posts and health centers. And, a significant number of NGOs provide health services.

### Overview of Public Spending to Manage Health Risks

150. **The public sector, including central government, donors and local government, spent about 88 billion CFA on in the health system in 2004 (US\$176 million), equivalent to 2 percent of GDP (29).**<sup>47</sup> An additional \$36 million came from the community level payments for drugs and services in public health clinics. Donor financed investments in health amounted to 18.9 billion CFA (US\$36 million) in 2004 with at least ten major sources of donor funding. In 2004, central government spent about 7 percent of its recurrent budget on health and 3 percent of the domestically-financed investment budget (Statistical Annex Tables IV.h and IV.i).

**Table 29 : Health Sector Financing, million CFA**

	2000	2002	2 004
Central Government	29 637	38 569	46 178
Local Governments	820	4 316	4 381
Fees collected from populations	7 822	17 869	18 137
External Partners	23 232	27 826	18 902
Total	61 511	88 580	87 598
Health expenditures as a % of GDP	1,98%	2,55%	2,13%

Source : *Revue des dépenses de santé 1995-2002*, DDI/DCEF and MOH 2004

151. **The central level of the MOH absorbs about half of the sector's resources.** This centralization of resources usually works to the disadvantage of local health districts and rural areas. The administrative level currently accounts for about one-quarter of Ministry of Health expenditures. This has shown a slight tendency to increase over time (Statistical Annex Table IV.j). Unfortunately, it is difficult to isolate rural sending. First, statistics on health services are kept at the health district level and not disaggregated between urban and rural areas. Second, rural dwellers use urban services, for example by coming to the regional hospital in the case of major illnesses. And finally, expenditure data is mostly managed centrally by various programmatic areas or by nature of the expenditure (e.g. drug purchases), with no geographical disaggregation of expenditures.

### Extending the Health Service Network in Rural Areas

152. **Despite growth in the number of health centers and health posts, health services have had difficulty in keeping pace with population growth in recent years.**

<sup>47</sup> This does not include health expenditures outside of the Ministry of Health, including an average of US\$ 25 million per year (2003-2004 on multisectoral HIV-AIDS and nutrition interventions (para 152-57)

For 1998-2002, there was an expansion in primary health care infrastructure, including an increase in health posts from 753 to 848, rural maternities from 570 to 643 and health huts from 1,087 to 1,519 (Table 30). At the district level (i.e. not counting hospitals), there was a 50 percent increase in doctors, 9 percent increase in midwives, 12 percent for nurses and 30 percent for community health workers. But, health posts and health centers saw a decrease in coverage in terms of infrastructure per inhabitant when population growth is factored in. Nurses and health agents have not increased their presence per population.

**Table 30 : Health infrastructure and personnel 1998-2002**

Indicator	1998	1999	2000	2001	2002
# of functional health posts	753	762	785	817	848
# of rural maternities	570	581	599	619	643
# of <i>cases de santé</i> - health huts	1,087	1,096	1,217	1,483	1,519
# doctors	84	92	101	115	122
# midwives	397	395	402	415	431
# of nurses and health agents	1,025	1,041	1,061	1,052	1,144
# of health post nurses (ICP)	709	718	746	785	848
# community health workers	4,348	4,251	4,670	5,079	5,685
Inhabitants per health post	12,081	12,265	12,408	12,313	12,157
Inhabitants per health center	168,469	173,077	180,379	186,284	190,916
Inhabitants per doctor	108,301	101,589	96,440	87,473	84,504
Inhabitants per nurse	8,875	8,978	9,180	9,562	9,012
Inhabitants per health post nurse (ICP)	12,831	13,017	13,057	12,814	12,157

Source: CEFORÉP

153. **Between 1998-2002, districts that are mostly rural benefited from additional infrastructure and staff.** Table 30 shows net change for mainly urban (districts with regional capitals) versus mainly rural districts (Statistical Annex Table IV.k by district). Rural areas benefited from more infrastructure, doctors and nurses; however, recruitment of midwives was more likely to benefit urban areas. The biggest expansion occurred at the community-financed level of health huts and community health workers. Despite this progress, poorer regions still have less infrastructure and personnel. The Dakar region, with 17 percent of the nation's poor, accounts for 35 percent of public health personnel. Fatick, Louga, Tambacounda and Saint Louis have equal share of the poor and health personnel and Diourbel, Kaolack, and Thies have less personnel than their share of the poor. Moreover, as of 2002, most midwives were still in Dakar (228 out of 496 nationally).

**Table 31 : Net Change in Health Infrastructure and Personnel, 1998-2002**

Health districts	# health posts	# rural materni.	# health huts	# doctors	# mid-wives	# nurses & agents	# ICP	# comm. personel
Mostly Urban	+37	+17	+70	+15	+12	+21	+40	+353
Mostly Rural	+46	+30	+266	+19	+9	+46	+63	+309

Source: MOH, CEFORÉP

154. **Rural residents perceive problems with quality of health service.** For both urban and rural residents, cost was the biggest reason for dissatisfaction, followed by long waiting times (Table 32). Rural residents were slightly more sensitive to cost and urban residents to waiting times. Rural residents were more likely to cite high cost and ineffective treatment. In terms of out-of-pocket expenses, rural households spend a larger portion of their income on health (2.1 percent of total consumption versus 1.6 for urban).

**Table 32 : Dissatisfaction with health consultations and reasons**

	% dis-satisfied	Unclean service	Long waits	Staff untrained	High cost	No drugs	Treatment ineffective	Other
Total	40,6	1,1	35,3	3,9	60,7	17,6	12,1	9,7
Rural	43,1	0,6	30,2	3,7	64,1	17,0	14,2	11,8
Urban	37,2	1,9	43,5	4,1	55,4	18,5	8,7	6,5

Source : ESAM II

155. **In terms of specific services, the period 1996-2000 saw significant erosion in vaccination coverage in rural areas, but this appears to have rebounded in recent years.** In 2000, rural children 12–23 months of age were about half as likely to have complete vaccinations before the age of one versus their urban counterparts (Statistical Annex Table IV.1). Administrative reports indicate that the national vaccination rates have improved in the last few years.<sup>48</sup> The Ministry of Health reports that coverage of DTC3 as of September 2002 was 65 percent versus 30 percent in 2001. Investments in cold chain equipment and other outreach materials enabled this improvement. Administrative data for 2004 report that out of 57 health districts, nine had difficulty achieving the 85 percent goal for DTC3, six of which were rural districts.

156. **Regarding health services to prevent maternal mortality, about 71 percent of rural women report going to at least one pre-natal control compared with 88 percent in urban areas (MICS 2000).** When it comes to the birth itself, one-third of rural women give birth without any assistance (compared with 3 percent in urban areas) and only 43 percent are attended by medical or para-medical personnel. In part this is due to the limited availability of health services and dispersed population, with bad roads, less forms of transportation and limited outreach ability by rural health posts. Preferences and ability to pay also influence this outcome.

## **Malaria**

157. **The Government of Senegal has mobilized additional external resources specifically to address malaria.** A Strategic Plan 2001-2005 was developed which estimated a cost of 26.2 billion CFA (US\$52 million) to meet the national malaria objectives of access to effective treatment within 24 hours and coverage of insecticide treated bed nets (ITBN) to 60 percent of pregnant women and children under 5, or about \$US 10 million per year (Statistical Annex Table IV.m).<sup>49</sup> The main elements of the

<sup>48</sup> A more definitive view will be available from the Demographic and Health Survey IV currently being carried out and when the Health Information System is fully function, expected in 2005.

<sup>49</sup> ITBNs have proven effective in significantly reducing malaria transmission. In field research in southeastern Senegal (hyperendemic zone) bednets were distributed to the whole of the population of

national strategy include coverage of ITBNs, utilization of bi-therapy (amodiaquine plus SP) as a first treatment instead of chloroquine, prevention and treatment of malaria during pregnancy, and control of malaria epidemics (in north) through sentinel sites. Almost half of the Strategic Plan's estimated cost is for insecticide treated bed nets, with a target of 3 million to be distributed. A 2003 Roll Back Malaria mission estimated a financing gap of 14 billion CFA, 8 billion CFA of which was the shortfall in financing for ITBNs.

158. **The Government's strategy for distribution of bed nets provides for subsidized prices to the end user distributed either through the public health system or through NGOs and the private sector through social marketing.** As of 2000, coverage of IBNs was still quite low, particularly in rural areas. Only 13 percent of rural children 0-59 slept under a bed net (1 percent ITBN) versus 23 percent of urban children (3 percent ITBN) (MICS 2000). Some pilot experiences have recently documented coverage rates of over 40 percent in communities in Tambacounda, Kolda, Kédougou and Vélingara.

159. **Despite delays in mobilizing resources and procuring bed nets, the bigger constraint appears to be on developing a delivery system that provides for rapid scale-up.** The

Government has purchased roughly 600,000 ITBNs to date (200,000 with IDA financing, 100,000 with Japanese financing and 300,000 financed by the national budget), or about 20 percent of the strategic plan goal. For the Japanese and IDA-financed nets, the MOH Malaria program reports distribution of only 184,000 to date (Table 33). Distribution was fairly widely spread among regions, with the highest concentrations per capita in the Tambacounda, Ziguinchor and Saint Louis. Dakar received comparatively fewer, befitting of its lower risk profile. No information is collected on distribution to rural areas. The MOH has recently reduced the price to 1,000 CFA for pregnant women sold through health centers to increase uptake. Even at this price, cost will remain a barrier in rural areas and among the poor.

Region	# received	# distributed	Pop per net distributed
Kaolack	30 376	25 216	42
Diourbel	29 551	24 598	43
Matam	9 550	8 260	51
Thies	32 202	26 367	49
Kolda	28 351	11 150	75
St. Louis	26 548	19 562	35
Tambacounda	27 150	25 200	24
Dakar	41 200	21 200	107
Louga	26 445	14 635	46
Fatick	20 000	11 409	54
Ziguinchor	20 250	16 150	27
Total	291 623	183 660	

*Source: PNLN, reported April 2005*

160. **The shift from home treatment with chloroquine to bi-therapy requires management by community health system, as opposed to self-care.** This may be more difficult in rural areas. Each community will need to have a community health worker trained in bed nets and treatment. Villages without a community-managed health hut (*case de santé*) will need to find an individual to be trained as focal point. The program to prevent and treat pregnant women with *traitement préventif intermittent* (TPI) à la

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Wassadou in 1995. Compared to baseline data taken in 1992-93, bednets led to a sharp decrease in the density of the vector population and malaria transmission. The number of bites by infected mosquitoes decreased by 69 percent and their density inside dwellings by over 90 percent. The daily rate of entomological inoculation decreased by 88 percent (Faye et al 1998).

sulfadoxine-pyriméthamine (SP) is to be integrated into pre-natal services. However, initial experience with the change in treatment protocols supported by community health works through major NGOs operating health services suggest that the community model may be effective and that local level actors are better able to determine who can and who cannot pay and devise repayment schedules according to household ability to pay, both for treatment and prevention.

161. **In the North, early warning systems can reduce the impact of malaria.** The North is exposed to epidemics with an explosion of cases in one point in time, whereas in the South malaria is endemic throughout year with lighter peaks. This creates in the North the possibility of a malaria early warning system. A predictive factors study analyzed historical data from the Senegal River Valley to identify epidemic thresholds by water level in the river and also out of season rains. An early warning system would focus on three main groups of predictors: vulnerability risk indicators (drug resistance, HIV, malnutrition), transmission risk indicators (e.g. increases in rainfall, river flow or temperatures) and early case detection (e.g. malaria morbidity data using critical epidemiological thresholds (Thomas and Connor 2001). The French Cooperation is supporting the establishment of sentinel sites to provide advance warning of epidemics.

#### **HIV-AIDS**

162. **Senegal has been successful in mobilizing financing to fund its 2002-2006 Strategic Plan for the Fight Against HIV-AIDS.** The Strategic Plan seeks to hold HIV prevalence below 3 percent, extend treatment through free anti-retrovirals, provide psychosocial support to AIDS patients and their families, increase public awareness and behavioral change through prevention outreach, increase voluntary testing and reduce discrimination and stigmatization. In 2002-2004, 19 billion CFA (US\$38 million) was provided by Government and donor agencies (Statistical Annex Table IV.n). The Ministry of Finance estimates that 13.6 billion CFA (US\$27 million) was spent in 2004, all sources combined, a sharp increase from 2003 as disbursements from donors increased (Table 34).

**Table 34 : Financing of the Strategic Plan Against HIV-AIDS 2003-2004**

	<b>External</b>	<b>Government</b>	<b>Total</b>
<b>2003</b>	2,362,944,920	--	2,362,944,920
<b>2004</b>	13,351,535,000	200,000,000	13,551,535,000

*Source: DDI*

163. **The approach of the CNLS is to mobilize both public sector agencies and civil society to scale-up prevention and treatment across the country.** The multisectoral response incorporates action plans in six areas/ministries: Health, Education, Social Development, Family and National Solidarity, Youth, Security Forces (Army, Customs, Fire Protection, Police Prisons). For the IDA-financed portion, regional allocations have been loosely correlated with risk, with high prevalence zones like Ziguinchor and Matam receiving the highest per capita amount, though spending in Kolda was below the average (Statistical Annex Table IV.o).

164. **The civil society response remains most active in Dakar and urban areas.** Data on CNLS funding to civil society show that of the 573 projects that entered execution in the first round of selection (executed mainly in 2004), 54 percent were oriented to urban areas, 27 percent to both urban and rural and 19 to rural areas. CNLS supported about 7,000 ‘interventions’ (training and outreach sessions, counseling and testing services, psychosocial support, etc.), 80 percent of which were in urban areas (Table 35 and by region in Statistical Annex Table IV.p). Few activities in rural areas focused on promoting testing and treatment as well as little outreach in psychosocial support. The strongest rural response was in general awareness raising through community-based organizations.

**Table 35 : Interventions supported by CNLS 2004, by Activity and Urban-Rural**

Region	Prevention sexual transmission	Prev. Blood Trans.	Mother-Child Trans.	Testing	Care for STD	Treatment	Psycho-social support	Care Orphans	Total
<b>Total Urban</b>	4945	76	85	268	30	50	132	29	<b>5615</b>
<b>Total Rural</b>	1340	28	23	20	0	0	19	6	<b>1436</b>

Source: CNLS

165. **There are few HIV testing services outside of the main cities.** As of end 2004, only Thies (7 out of 8 districts), Ziguinchor (3 out of 3 districts) and Diourbel (Bambey) offered public HIV testing at the district level. However, promoting testing in rural areas can boost the productivity of urban testing sites, which up until now have low utilization rates. One assessment found that existing CDVs in Kaolack, Thies and Ziguinchor had served 1.8, 1.7 and 3.3 percent of the adult population, respectively (Woynar 2004). The higher uptake in Ziguinchor is due partly to a 50 percent increase in testing rates after a rural outreach campaign by the NGO ASVIE, including ambulatory testing services.

166. **Care for rural populations living with HIV-AIDS poses particular challenges.** Through the ISAARV (*Initiative Sénégalaise d'Accès aux Antiretroviraux*) program, free ARV treatment has been extended to all regional hospitals as of end 2004, with almost 2,000 patients under treatment. However, as shown in the statistics of health care coverage, rural people rarely use hospitals. Lower disposable income reduces financial access which, although the ARVs are free of charge, includes expensive diagnostic and monitoring test and treatment of opportunistic infections. In addition, rural populations must come to regional hospitals, resulting in transport fees and lost days of work. In 2004, a pilot experience was carried out in Ziguinchor to decentralize treatment to 3 health centers (Ziguinchor, Bignona and Oussouye). As of late 2004, the decentralized health centers accounted for 60 percent of the patients under treatment in that region (Woynar 2004).

### **Targeted Support to Address Malnutrition**

167. **The Nutritional Enhancement Program under the Prime Minister’s Office is the country’s main program to reduce malnutrition (Table 33).** Senegal has recognized the benefits of improving the nutritional status of the population and is investing an important amount of resources into community nutrition programs. Initiated in 2002, the Nutrition Enhancement Program (*Projet de Renforcement de la Nutrition – PRN*) is a 10 year program to improve the nutritional status of children under three and pregnant and

lactating women. The program contracts out to NGOs that to deliver a nutrition package, including cost-effective interventions such as child growth promotion at the community-level, vitamin A distribution, breastfeeding promotion among others. The PRN complements general health programs to prevent and treat malnutrition and supports equipping and training of health posts. The project has also begun to give small grants for income generation. The project, currently active in 60 percent of health districts, reaches an average of 165,000 children under three and their mothers every month, including 98,520 children in urban areas (25 percent of urban under 3 year olds) and 67,230 in rural areas (12 percent of rural under threes). The median annual cost per beneficiary of the community-level services is \$4 per year, with full program cost of \$17. From June to December 2004, the incidence of underweight children in the project areas declined from 23 percent to 18 percent.

**Table 36 : Financing of the Nutrition Enhancement Project, 2003-2004**

	<b>External</b>	<b>Government</b>	<b>Total CFA</b>	<b>Total US\$</b>
<b>2003</b>	2,112,731,374	176,000,000	2,288,731,374	\$4.6 million
<b>2004</b>	5,473,904,564	176,000,000	5,649,904,564	\$11.3 million

*Source: DDI*

## **Health Insurance**

168. **Government supports the creation of health insurance mechanisms.** While much of the direct investments in establishing health mutuals are channeled from donors to NGOs and local federations, the Ministry of Health plays a critical role in developing the regulatory framework and in preparing the necessary instruments and capacities within the public health system to allow it to interface with these insurance mechanisms. There is a specific department of health mutuals within the Ministry of Health to oversee development of these services. In 2003 a Law on Mutualism to regulate the operations of health insurance mutuals was passed, but no application decree has yet been emitted by the MOH. In 2004, the Government provided 200,000,000 CFA in the investment budget to MEFPOP support the creation of a health mutual for public sector workers to smooth income shocks of health crisis. Although civil servants benefit from coverage of health services, required co-payments as well as the price of prescription medicines represent significant private costs.

## **General Observations**

169. **There has been some success in mobilizing funds for critical health risks in malaria, HIV-AIDS and malnutrition, but the population most at risk remains underserved.** If interventions were targeted first to those groups at greatest health risk, the map of interventions would look different. Malaria and maternal health programs would be overwhelmingly rural, including a greater concentration of midwives and preferential distribution of bed nets to rural areas. Malnutrition interventions would be more prevalent in rural than urban areas, whereas the opposite is now the case.

170. **The bulk of critical health services, like pre-natal control, vaccinations, malaria and HIV prevention are carried out at the community level and in rural areas**

**the role of the community health agents is key.** In the rainy season when malaria is at its peak, villagers are isolated from health posts, making the role of community health workers all the more important. For bed net distribution, expanding beyond the health system appears to hold the most promise for scaling up use, working through the extensive network of community based organizations in rural areas instead of relying on health committees.<sup>50</sup> Efforts to address malnutrition rely on the presence of NGOs with technical capacity, which is weaker in rural areas. All of these programs suffer from the general centralization of resources, personnel and decision-making within the MOH.

171. **Rural health districts vary greatly by the level and coverage of services, cultural factors, economic base, access to remittances to finance health fees and frequency of health risks (HIV prevalence, malaria morbidity etc.).** For rural populations, focus should be on developing appropriate materials and outreach strategies (for example via rural radio or using the widespread women's groups or village development associations) to increase their general understanding of health risks and prevention strategies. Programs need to be tailored to the specificity of rural populations, like targeting men who migrate for work (and their wives) for HIV messages.

172. **Financial accessibility is a critical complicating factor.** The rural health system is largely based on community payment for services. But, almost half of the rural poor who are sick say they did not seek treatment because they could not afford it. Efforts to increase the use of qualified personnel at births, access to life-saving HIV-AIDS treatments, timely recourse to anti-malaria drugs in the case of onset, and other critical actions to prevent and cope with health shocks will be contingent on affordability of services. The extension of health mutuals to provide some level of health insurance appears promising for the better-off rural populations. Other policies currently being piloted, like free deliveries for pregnant women in the poorest regions should be monitored for their potential to benefit rural women. The basic policy of charging for bednets should be reconsidered for the rural poor.

## **E. Managing Critical Education Risks**

### **Overview of Institutions, Policies and Expenditures**

173. **The Ministry of Education is the main sector agency responsible for promoting educational attainment in Senegal.** As presented in Chapter 2, the challenge of achieving basic education for all is greatest in rural areas. A significant share of rural children are not currently in school and for every 100 children in rural areas who enroll only 58 will complete the primary cycle. Barriers in terms of cost, distance and perceived relevance combine with household factors such as health and agricultural shocks and the use of child labor create a set of conditions that must be address if Senegal is to reach its objectives.

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<sup>50</sup>The MOH recently started using OCBs as agents for ITBN distribution in 15 districts. OCB sells nets for 1,000 CFA (200 stays with OCB and 800 to districts).

174. **General education policy was framed in the Ten Year Education and Training Programme (*Programme Décennal de l'Éducation et de la Formation, PDEF*) 2000-2010, and updated in a 2005 Letter of Sectoral Policy.** The policy identifies strategies to reach the MDGs in terms of gender equity and complete coverage of primary education, including (i) priority to the rural zones for construction of classrooms; (ii) development of bilingual education and introduction of Arabic into certain zones where populations perceive this as fundamental to educational value; (iii) promotion of access for all including disabled, low-income and other children at risk, (iv) use of double shifting and multigrade classrooms; (v) recruitment of up to 3,000 contractual teachers and redeployment of teachers to classroom purposes, (vi) reduction in repetition and improvements in internal efficiency; (vii) better involvement of communities in school management; (viii) respect for the norm of 900 teaching hours per year over 30 teaching weeks; and (ix) attainment of a ratio of five textbooks per student in primary.

175. **In 2004, the Government and donors spent about US\$52 million on rural primary education (Table 37).** The central government budget accounted for about 78 percent of education expenditures in 2004. Households through contributions via parent-student associations account for 15 percent, donors for 6 percent and local governments 2 percent. This amounts to 6.2 percent of GDP (including private education) and has risen over time. Education accounts for one-third of the national recurrent budget and primary education claims 42 percent of education expenditures (Statistical Annex Tables IV.p and IV.q).

**Table 37 : Estimated Direct Annual Expenditures on Rural Primary Education (1)**

Ministry/Expenditure Area/program	2004 Budget (CFA)
<b>Ministry of Education</b>	
Personnel and Non-wage Recurrent (rural teachers and textbooks)	19,000,000,000
School Lunches: (rural) WFP :	1,246,000,000
: State and other partners (rural and urban*)	413,000,000
Investment (BCI) Rural classroom construction	5,442,720,000
<b>Total CFA</b>	<b>26,101,720,000</b>
<b>Total US\$</b>	<b>\$52,203,440</b>
<b>Percent of 2004 Education Expenditures</b>	<b>12%</b>

Source: Budget, WFP, Bank estimates. (1) excludes central and regional level administrative expenditures in support of rural education. \* data do not permit separation between rural and urban.

176. **Resources are inequitably distributed between rural and urban areas.** Resources are heavily tilted towards urban primary students (Table 38). The cost per student in rural areas is about 28,000 CFA per year, versus 47,000 CFA spent by the government per urban student. This cuts against the general impression that it more expensive for the government to invest in rural education because of low population density and smaller class sizes. On the contrary, for every additional urban student, the state could add 1.7 new rural students under the prevailing cost structure. The differences are largely due to lower cost teachers in rural areas as well as possible overstaffing in some urban schools. In addition, the significant overhead and administrative expenses in the system act to the detriment of expenditures at the service delivery level.

**Table 38 : Cost per Student of Primary Education, rural and urban**

	Total Expenditures	%	CFA Per Student (public)
Total expenditures	82,354,000,000	100%	67,046
Rural expenditures	19,223,000,000	23%	27,870
Urban expenditures	25,188,000,000	31%	46,764
Administration and other	38,865,000,000	47%	

Source: MOE, Bank estimates – does not include school lunches or construction

### School Construction and Opening of New Classrooms

177. **The Government has made significant efforts to increase the supply of primary education in rural areas.** Between 200-2004, the Government built 7,109 new primary school classrooms and rehabilitated 930 (Statistical Annex Table IV.n). Of these, domestic resources financed 53 percent, and donors working through the MOE an additional 42 percent, with the remaining 5 percent financed through donor-financed multi-sectoral projects working directly through local governments and communities. Despite this investment, incomplete schools are still more frequent in rural than urban areas. In rural areas, three-quarters of primary schools do not have all of the requisite grades, increasing rural children's risk of not finishing primary education.

**Table 39 : Opening of New Classrooms in Rural Areas, by Sponsor and Poverty Level**

Index of Access to Services	% Rural Pop. (Cummul.)	% Classrooms by External Aid	By Parents Assoc	By Govt	By Other (NGO etc.)
0	1.4	0.0	0.0	0.0	0.0
50	7.3	9.1	12.8	9.9	6.7
100	11.8	19.1	27.2	20.6	20.0
150	21.1	28.7	41.7	31.9	31.7
200	29.0	38.9	52.6	38.8	38.7
250	42.5	54.4	64.4	50.3	48.3
300	55.3	68.9	75.0	62.7	60.6
350	67.6	79.2	83.8	74.0	74.1
400	79.6	86.6	91.5	82.8	83.4
450	92.5	89.8	94.4	87.6	87.7
500	100.0	100.0	100.0	100.0	100.0

Source: Bank estimates. Index of Access to Basic Services developed in 2001 by the Statistics Department of the Ministry of Finance. It ranks all villages and CRs in rural Senegal according to a composite index of access to basic infrastructure (health, education, roads, water, etc.) from 0 to 500.

178. **The bulk of the new classrooms opened were in rural areas, with strong support from parents associations.** In terms of opening of new classes, which includes adding a teacher and may or may not require construction, in the 2003/2004 school year 81 percent were in rural areas and 19 percent in urban areas, demonstrating the strong commitment to expand access to primary education in rural areas. From 2001-03, 43 percent of newly opened classrooms were sponsored by parent's associations, even though these were often in provisional locations. Community mobilization to start a school or expand a classroom appears to have played a central role in reaching poorer rural communities, with the State following after. Table 39 shows the distribution of classroom openings in rural areas by sponsoring organization and poverty level of the

rural community. Classrooms supported by parents' associations tend to be more heavily concentrated in the poorer rural communities, with the 12 percent of the rural population living in the most under-served communities accounting for 27 percent of the classrooms sponsored by parents associations, versus about 20 percent by the government, other donors and NGOs.

### Provision of Teachers, Textbooks and School Lunches

179. **Despite progress on building and opening classrooms, the MOE continues to have difficulty retaining rural teachers.** In 2004, Senegal hired 2,800 contractual teachers, but the total number of teachers in the classroom only increased by 1,407. Teachers leave classrooms for other non-teaching functions within the education system, resulting in the lower net gain in number of teachers in the classroom. It is not uncommon for recruitment of contractual teachers in rural areas to replace civil service teachers who then transfer into urban areas or the administration. Teacher transfers have exacerbated differences between better-off and worse-off zones, and have led to the closing of classrooms, particularly in difficult rural zones (or 'freezing' until the next academic year). Transfers in 2004 favored Dakar, with a net increase of 230, while Tambacounda lost 74 teachers, Louga 66 and Diourbel 47 (Statistical Annex Table IV.s). Moreover, teacher absence is the most frequently cited reason by children for missing school, accounting for 77 percent of responses in rural areas (PASEC dataset). The main reasons for teachers' absenteeism were problems with health, need to travel to get their salary and to attend family ceremonies.

180. **Rural areas are also less equipped with basic textbooks.** Despite a national goal of 5 textbooks per student, rural students average just 1.8 versus 2.4 for urban students (Statistical Annex Table IV.6). This lack of materials is reflected in household survey results where lack of books and supplies was by far the most likely complaint about problems at school for rural children of primary school age (Table 40). This problem was more pronounced among children from poorer families. Teacher availability and poor school condition were also noted more often among poorer rural households.

**Table 40 : Rural: Problems at school, just for those currently attending (age 7 to 12 only),**

By percentage of total responses and poverty quintile

Type of problem	Q1	Q2	Q3	Q4	Q5	Total
None	34%	44%	47%	43%	77%	43%
lack of books & supplies	50%	38%	40%	40%	19%	42%
Poor instruction	1%	4%	4%	11%	2%	4%
no teachers	3%	5%	1%	2%	0%	3%
school in poor condition	10%	9%	9%	4%	2%	8%

There is no information for the kids who never attended schools or for drop-outs

Source: ESAM-II

181. **The Government of Senegal supports school lunches to attract students and improve learning.** Twenty-eight percent of all primary schools offer school lunches. The situation is slightly better for rural schools at 34 percent. Of the total of 1,589 schools with school lunches, WFP support covers over 1,000 schools and 120,000 students in rural areas

of Tambacounda, Fatick and Kaolack. Criteria for WFP support include: location in a high vulnerability zone according to WFP’s map of vulnerability to food insecurity, minimum number of students, must be a school where children walk long distances and parents are willing to pay contributions in cash (300 CFA per student per month) and/or in-kind (donation of fire wood, labor for cooking etc.). Two meals a day are provided. WFP estimates the average cost per student per year of their school lunch program to be \$24, of which WFP contributes 88 percent and communities 13 percent. The WFP rations are more generous and more frequent than school lunches financed by the MOE. An expansion in school lunches to poor zones was anticipated in the priority program of the PRSP, amounting to 600 million CFA, but to date has not received financing.

182. **School lunches appear to have a positive effect on enrollment and educational attainment.** A 2004 impact evaluation of the WFP school lunch program in Senegal found that the number of children enrolled in schools that received school lunches grew by an annual 12 percent versus 8 percent for without school lunches, with slightly higher effect on girls. Retention during the first 3 years is 90 percent in assisted schools versus 71 percent in non-assisted. This difference falls to 57 versus 52 percent by sixth grade, undoubtedly influenced by existence of incomplete schools. Schools participating in school lunch program also report slightly lower repetition rates and higher rates of passing standardized exams (Akakpo 2004).

183. **School lunches are distributed unequally in rural areas and inequitably between poor and non-poor households.** Within rural areas, coverage ranges from a high of 88 percent in Tambacounda and 54 percent in Kaolack to only 2, 3 and 10 percent in Matam, Louga and Diourbel respectively (Statistical Annex Table IV.u).<sup>51</sup> The latter are also the regions with the largest number of rural children not currently attending primary school. Within regions it serves, the WFP positively discriminates towards the poorer rural communities (Statistical Annex Figure IV.a). But, within schools, students from the poorest families are less likely to receive meals, which may indicate exclusionary effects of contributions (Table 41).

**Table 41 : Share of rural students who said they received school meals in 2003**

	Q1	Q2	Q3	Q4	Q5	Male	Female
Share of rural students	8%	26%	31%	32%	39%	26%	29%

Source: PASEC data set – quintiles based on asset index, Bank estimates

### **Demand-Side Factors Affecting Rural Primary Education**

184. **For rural populations, the long-term benefits of sending their children to school may not be too apparent.** Lack of perspectives for continuity (incomplete schools, few secondary schools) gives rural residents little opportunity to see success through schooling. There is the tendency to seek success through commercial trading or emigration

<sup>51</sup> Matam, Louga and Diourbel fall outside of the most vulnerable zone on WFP’s Vulnerability Map because many households have access to remittances to help smooth consumption in times of food insecurity.

abroad, both of which are done through family connections. The zones of highest emigration (Louga, Diourbel, Kaolack) also have the lowest enrollment rates.

185. **The out-of-pocket costs of schooling affect parents' decisions on whether to send their child to school.** Education fees reported by households in 2003 were 1,275 CFA per child in rural areas, with an additional 4,649 CFA for materials. Overall, rural households spend about 1 percent of annual consumption on education. Schools make some exceptions based on hardship, with 43 percent of primary schools reporting parents paying less based on revenue and 21 percent saying reduced fees were possible for orphans. There is no formal policy to provide support to those that cannot pay.

186. **The Groundnut Basin, with strong demand for religious or arab-islamic schooling, is a challenge to the model proposed by the State, with its basis in French.** One reason for the low performance of primary enrollment of rural children in Diourbel is from the *daara* and parental resistance to secular schooling. In such zones, the Ministry of Education is diversifying its educational offerings through the establishment of Franco-Arab schools where bi-lingual teachers follow the official curriculum.

### **Observations**

187. **Among rural regions, there are large variations in enrollment in first grade and retention through primary cycle.** The most critical region is Diourbel with the lowest enrollment rate for first grade and lowest retention rates. While Tambacounda has a relatively high enrollment rate for first grade (gross rate about 100%,) only a little more than half of those complete six years. Other regions like Ziguinchor and Kolda out-perform the national averages.

188. **Despite recent progress, infrastructure expansion and redoubling efforts to post teachers in rural areas will be needed.** Population growth calls for continued infrastructure investments. Moreover, expanding access to secondary school, for example through locating them in areas more accessible by rural residents or exploring support for students to come in from the countryside, may increase perceived relevance of education.

189. **Demand-side factors are clearly an issue, but there is less policy and program development in this area.** Rural children do not attend or they drop out of school because they suffer from health shocks, are affected by the agricultural economy, do not have the economic resources, or their parents do not see it as a worthwhile investment. Policies and programs will need to be developed to address these demand-side issues.

## **F. Employment Generation**

### **Overview of Institutions, Policies and Expenditures**

190. **Opportunities to diversify income through off-farm employment are an important risk management tool.** Creating alternative sources of income and employment is a means of escaping from low productivity agriculture. Given agricultural

cycles, the need for cash income in certain periods of the year means that even if a household's base is agricultural, supplemental income and employment outside of agriculture is sought during certain times of the year.

191. **The most recent National Employment Policy (1997) has six strategic axes:** (i) to maximize creation of jobs in the modern sector; (ii) to support the modernization of the informal sector through productivity increases, better access to social protection, technological innovations, and increased access to credit through micro-finance; (iii) to support initiatives for local employment including rural employment opportunities; (iv) to adapt training programs to labor market needs; (v) to better integrate employment issues into national policies, including favoring high labor-intensity in technical choices and developing national social protection systems to extend coverage of health and unemployment insurance and retirement benefits; and (vi) to better monitor performance of programs to support employment creation, and the labor market in general.

192. **Given its transversal nature, many ministries and agencies are involved in activities to generate employment.** In addition to the National Employment Action Fund under the labor ministry (*Ministère de l'Emploi, Fonction Publique et Organisations Professionnelles - MEFPOP*), the majority are carried out through programs that target specific groups, for example youth or women. However, there are many programs that in the end have similar objectives, such as the income generating activities supported through poverty reduction programs or credit lines to women as part of social assistance programs through the MFFSSD. The division between employment generation projects and those that seek to raise incomes is not clear.

193. **Programs that specifically seek to create jobs amounted to about US\$4 million in 2004 (Table 42).** These are all fully domestically-financed and most have been created within the last few years as the pressure to address employment, particularly among youth, have increased and become an explosive political and social issue. However, this is a fraction of the funding that is channeled through poverty reduction programs that finance income generating projects.

**Table 42 : Estimated Annual Expenditures on Selected Employment Creation Programs**

Ministry/Expenditure Area/program	2003	2004
<b>Ministry of Employment, Public Administration and PO</b>		
National Employment Action Fund	250,000,000	500,000,000
<b>Ministry of Youth</b>		
Operating Cost Support to Agency and Fund	126,000,000	206,000,000
Agence d pour l'Emploi des Jeunes (ANEJ)	120,000,000	
National Youth Promotion Fund	4,000,000,000	800,000,000
Voluntary National Civil Service	330,000,000	336,000,000
<b>Total CFA</b>	<b>4,826,000,000</b>	<b>1,842,000,000</b>
<b>Total US\$</b>	<b>9,652,000</b>	<b>3,684,000</b>

Source: DDI

## Employment Programs

194. **The National Employment Action Fund is the main direct support for employment creation by the MFPEOP.** Created in 2000 to reduce unemployment and under-employment, the FNAE provides financing to the Convention State-Employer (for on-the-job training) and channels credit through two MFIs to finance business start-ups. In 2003 (most recent data), 358 credits were granted for a total of 305,184,967, or an average of 850,000 CFA per credit. The MFIs receive 8 percent in interest and 10 percent in support for non-financial services. The program estimates creation of 11,000 permanent jobs to date (cost of 27,744 CFA per job).<sup>52</sup> Few serve rural populations, but there have been projects for agricultural processing, like milk distribution.

195. **The Ministry of Youth has three programs to support youth employment:**

- (a) The National Youth Employment Agency (*Agence Nationale pour l'Emploi des Jeunes ANEJ*) created in 2001 to assist youth in obtaining jobs through training and advice as well as links to potential employers. ANEJ estimates it reaches 50,000 mostly urban youth. With support from Taiwan, ANEJ is establishing 34 Tool Houses (*Maison d'Outils*) to help artisans, mainly from villages, begin production.
- (b) The National Fund for Youth Promotion (*Fond National pour la Promotion des Jeunes FNPJ*). Also created in 2001, FNPJ finances lines of credit through MFIs to support young entrepreneurs. 6.2 billion CFA in loans has financed 2,378 projects, creating an estimated 12,000 jobs.<sup>53</sup> Rural areas have benefited from 33 percent of the financing and 40 percent of the employment created. One-third of funding supports agriculture activities, 28 percent commerce, 21 percent services, and 12 percent manufacturing. Repayment rate on these credits currently averages only 24 percent, largely due to the impression by early recipients that these were politically motivated. FNPJ has tightened selection procedures and is actively working with MFIs to improve performance. The FNPJ and ANEJ have a joint venture to finance Youth in Agricultural Farms, to test a private sector approach, working with 100 farms, 10 youth per farm and a financing of 10,000,000 CFA per farm.
- (c) Voluntary National Civil Service program: Initiated in 1999, youth are recruited for a two-year commitment to assist communities to undertake development efforts. Volunteers are paid a stipend of 30,000 CFA per month. In 2003, 192 volunteers were recruited to reinforce capacity of health structures, 300 for the program of reconstruction of the Casamance and 100 to prevent floods in Matam.

## Temporary Income and Employment Generation through Public Works

196. **While employment policies support the concept of labor-intensive public works, there is very little strategic attention to this issue as part of public works investments.** Few explicit public works programs appear to be operating in rural areas.<sup>54</sup>

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<sup>52</sup> This calculation appears optimistic as it assumes every credit created 31 jobs.

<sup>53</sup> Based on these figures, each project (credit) generates about 5 jobs at a cost of 502,000 CFA per job.

<sup>54</sup> For example, in the PASEC survey, when villagers were asked if there had been public works programs in the village that employed people 12.5% answered yes and 87.5% answered no.

There are no overall guidelines for labor-intensive approaches to be used in public works. Infrastructure investments in rural areas are not planned taking into account agricultural cycles in order to inject income through temporary employment in moments of critical income need. There is little monitoring of the jobs created through public works nor consistent methodology used between the few programs that do report job creation.

197. **In general, temporary employment is seen as a by-product of infrastructure investments, not as an end in itself.** As its name denotes– *Agence d'Exécution des Travaux d'Intérêt Public contre le Sous-Emploi*– AGETIP was created as an agency with its core mandate to create jobs through the efficient contracting of public works. Over time, its focus has evolved toward managing construction contracts to overcome capacity constraints, particularly as a conduit for donor financing.<sup>55</sup> In the period 200-2004, AGETIP realized 73,790,935,447 CFA in investments in classrooms, health centers, administrative buildings, canals and roads (Statistical Annex Table IV.v). Overall, AGETIP estimates a labor intensity of 25 percent, which is low for public works programs with a labor objective but average for the type of civil works constructed. AGETIP created 16,000 person-years of employment from 2001-2004 at an average cost of 4.6 million CFA per person year (about US\$9,000). Rural-urban distribution is not available, though an estimate of no more than 25 percent in rural areas would put the annual rural employment at 1,000 person-years, or about 1 percent of the male rural labor force ages 20-50.<sup>56</sup>

## Observations

198. **The critical employment risks of rural populations are not yet well addressed in public programs, despite the existence of clear policy directives to promote rural employment.** Most efforts are appropriately oriented to youth, but delivery mechanisms that rely on credit exclude the most vulnerable. Rural employment training and credit focuses mainly on agriculture, but there are some examples, like diversification into artisan production, to decrease vulnerability on agricultural production. At present, public works are not really used as an extension of employment policies. For rural populations, timing infrastructure investments to the agricultural cycle would inject much needed cash income into the rural economy at critical moments and reduce the need for season migrations to the cities to look for work. Overall, there is little monitoring and evaluation and inconsistent methodologies for measuring employment impacts. Geographical targeting systems to ensure needy areas benefit are the exception (see following section).

199. **Other proposals to support the extension of social protection to rural workers are being contemplated.** The Orientation Law on Agriculture calls for the development of social protection systems for agricultural workers in order to improve employment conditions of rural producers. The modalities have yet to be developed, but the general

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<sup>55</sup> AGETIP reports 2004 sources of financing as 62 percent IDA (Pac, PDIS, PDEQ), 8 percent local government, 8 percent Government of Senegal (counterpart funding of donor projects), 7 percent KfW (PROCR) 4 percent BAD (PLCP, PDIS,) 4 percent France (PAC), 3 percent Canada (PLP), and other small contracts with PAM, EU, Norway etc.

<sup>56</sup> It is worth noting that even when the infrastructure itself is located in rural areas, the contractors hired by AGETIP usually come from Dakar, or to a lesser extent regional capitals. This reduces the potential income multipliers of public works in the rural areas.

intention is to work through cooperatives and producer organizations to develop insurance mechanisms for risks tied to the person (health, death, disability).

## **G. Targeting of Infrastructure and Service Programs in Rural Areas**

### **Policy and Institutional Framework**

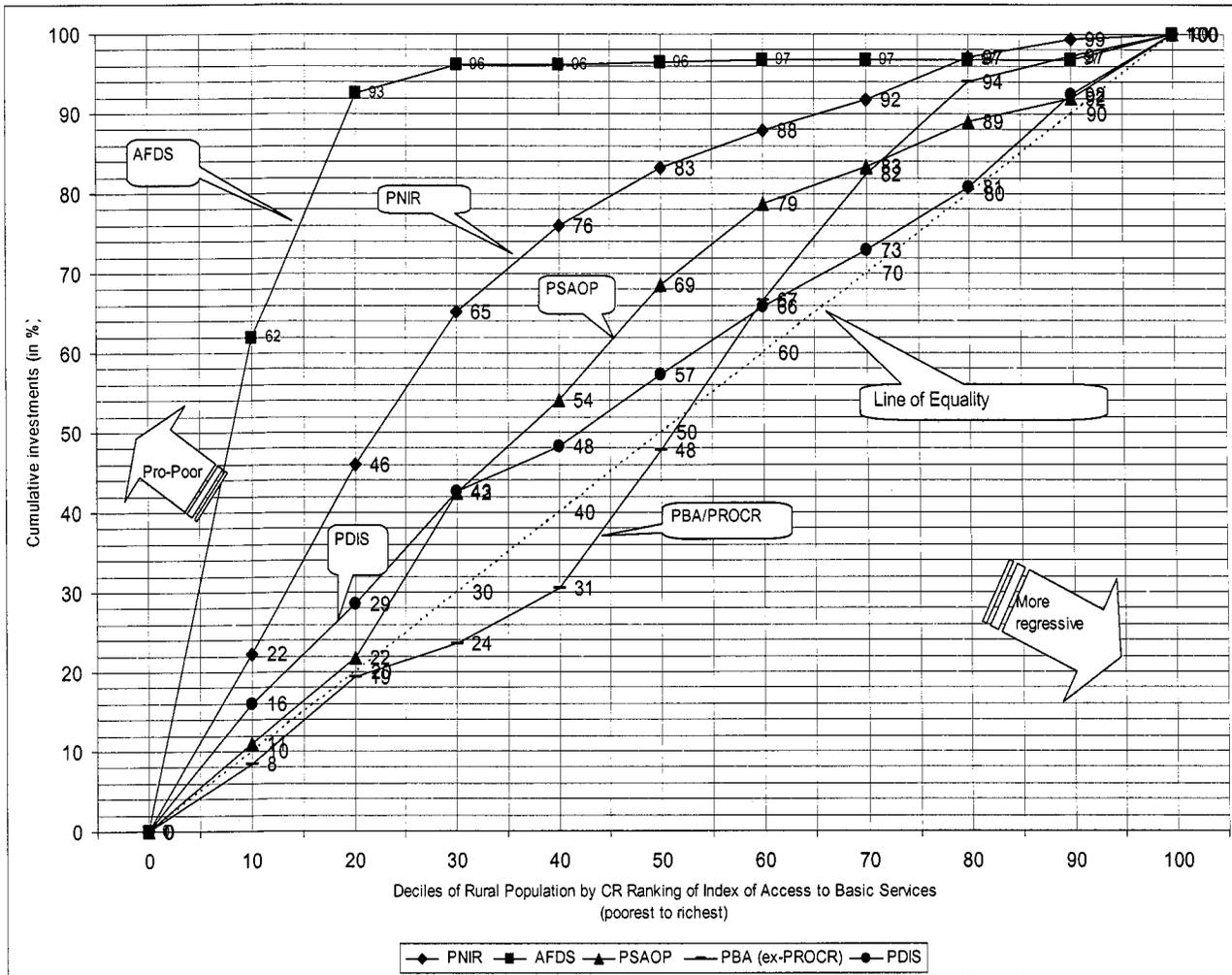
200. **Historically, the most vulnerable rural villages have not benefited from much public investment.** For example, in one study of 250 rural villages carried out in 2002 (prior to implementation of many of the current decentralized infrastructure programs), it was found that counting back as far as 1982, 40 percent of these villages had never benefited from an outside intervention (government or non-governmental) of any type (de Janvry 2003). Small size, remoteness and difficult access exacerbate their vulnerability. The most vulnerable rural communities tend to have the least stock of basic infrastructure and tend to experience multiple negative shocks, making it difficult to accumulate assets and move out of poverty.

201. **The Government is the main provider of basic infrastructure and services to rural areas and uses a wide array of agencies and institutional mechanisms.** To reach the MDGs, the Government will need to increase investments in rural communities, particularly water supply, education, health, roads, markets and other economic infrastructure. The relative responsibilities between central and decentralized levels as well as between sectoral and multisectoral programs often overlap. In theory, the 1995 decentralization law transferred responsibilities for most basic infrastructure to local governments (*communes* in cities and *communautés rurales* in rural areas). In practice, the bulk of all infrastructure investments continue to be carried out by the central sectoral ministries. This is due to the failure to fully implement fiscal decentralization, a desire by the central level to retain control over resources and the perception by sectoral agencies that local governments lack capacity. Over the last several years, a growing number of programs have experimented with delegated contract management, decentralized and community-based implementation mechanisms in order to reinforce local implementation capacity. In addition, departing from top-down sectoral planning, there has been much effort in developing local planning processes. However, linkages remain weak between these local investment plans and investment programmed by the central sectoral ministries.

202. **A general accounting of the main multi-sectoral programs estimates over US\$25 million per year mainly to rural infrastructure, not including the sectoral programs in transport, education, health and water.** Most of the decentralization and community development multi-sectoral programs combine infrastructure with training and in some cases micro-credit and income generating activities (Statistical Annex Table IV.w.) They are carried out under a wide range of ministries and with different geographical focus and operating procedures. All finance small-scale infrastructure intended to meet critical community needs in poverty reduction, rather than the more large-scale regional infrastructure, like the main road system or major irrigation systems. Local governments manage resources in some of the programs, community and village committees in others, and delegated contract management through AGETIP in others. All are based on donor

funding run out of special-purpose project implementation units with project-specific manuals and procedures.

Figure 9 : Poverty Targeting of Rural Investments



Bank estimates based on CIBLAGE Index of Access to Basic Services in Rural Communities, DPS . The 45-degree line (line of equality) indicates a neutral distribution. Any curve above that line represents a pro-poor distribution of resources between CR, any curve below it indicates a regressive distribution. The more the curve is in the upper left quadrant, the greater the share of its resources go the most vulnerable CR.

### Targeting Performance

203. The programs with the most positive discrimination towards the more vulnerable rural communities are AFDS, by a large margin, and PNIR. Figure 9 presents the geographical targeting results for five programs that deliver rural infrastructure and services: Social Development Fund Agency (AFDS), National Rural Infrastructure Program (PNIR), Groundnut Basin Program (PSA-ex-PROCER) and *Projet des Services*

*Agricoles et Organisations des Producteurs* – PSAOP, as well as the health sector program PDIS. AFDS allocates 93 percent of its resources to the 20 percent of the rural population living in the poorest CRs, PNIR 46 percent and the other programs 20 to 26 percent. PSAOP finances producer organizations, which are usually less present in the poorest villages. PBA (ex-PROCER) concentrates most of its investments across the poverty range, though there is underrepresentation of the poorest CRs due to program rules that require a certain level of local government capacity. In terms of overall amounts, cumulative resources vary between US\$40 per capita to the poorest CRs, down to US\$1.50 in the better-off rural communities, helping to redress inequities (Statistical Annex Table IV.x). Sectoral investment programs tend to have a more neutral distribution. The health investment program (Figure above) and the opening of primary classrooms sponsored by the Government in rural areas (Table 39) both tend to be applied equally across the poverty spectrum, with little positive discrimination of investments in the least served areas.

## Observations

**204. The development of these decentralized delivery systems for rural infrastructure is an important advance in recent years.** Rural populations will benefit from moving control over decisions and resources closer to them. The experience with implementation through local government and communities, even in the most remote CR and villages, has been quite positive, both in terms of cost effectiveness (generally lower unit costs) and transparency, as well as building capacity at the local level. This may have spill-over benefits on increasing local government and community capacity more broadly to manage risks as they gain experience in implementing development projects, managing money and delivering services. Other benefits to the rural economy include greater recourse to local contractors, with important multiplier effects on rural incomes, and the promotion of local financial services as resources are transferred locally to be managed.

## H. Credit and Savings

### Overview of Institutions, Policies and Expenditures

**205. The 2004 Letter of Sectoral Policy on Microfinance acknowledges the remarkable growth of MFIs over the last decade, but also underlines their unequal distribution across the country.** The policy sets forth a vision to “create a professional microfinance sector that is viable and sustainable, diversified and innovative, integrated into the financial sector, assuring satisfactory coverage of national demand, and operating within an appropriate legal, regulatory, institutional and fiscal framework. To accomplish this, four strategic axes are identified: (i) improve the legal and regulatory environment, (ii) promote appropriate and diversified services, notably in zones not currently covered by MFIs, (iii) better integration with the financial sector including stronger articulation between MFIs and commercial banks; and (iv) a strengthened institutional framework. Expanding MFI services in rural areas will require the development of institutional capacities, the diversification of products and services adapted to rural clients, and building a stable savings base. Support could come in the form of technical assistance, capitalization, guarantees and lines of credit at market interest rates.

206. **Historically, the supervision of MFIs has been the responsibility of the Micro-Finance Unit (*Cellule d'Assistance Technique au Caisses Populaires d'Epargne et Créditt*) in the Ministry of Finance.** Responsibility for the promotion of MFIs was devolved to the Ministry of Small and Medium-Enterprise and Micro-Finance created in 2003. The ministry has a relatively small budget and does not yet manage significant levels of investment. In 2003-2004, recurrent budget averaged about US\$300,000, with an additional transfer of less than US\$500,000 to support *the Agence de Développement et Encadrement de PME*, which assists small business.

207. **The main donor funding for the micro-finance sector has been channeled directly to MFIs as part of support to private sector development.** There has been extensive and on-going support from a number of bi-lateral agencies (USAID, French Agency for Development, Canada, Germany, Belgium, etc.) to improve management and technical capacity, expand outreach of services, and build a sustainable micro-finance industry in Senegal. In recent years, one of the main supports to the micro-finance industry has been through USAID-financed Dyna Enterprises, amounting to US\$26.5 million 1999-2004 in technical assistance to microfinance institutions (IBM 2004). The program also provided support to the Micro-Finance Supervision Unit within the Ministry of Finance.

### **Observations**

208. **Significant amounts of public resources have been channeled through MFIs for other objectives such as employment creation and income generation.** Almost US\$10 million in Government credit lines oriented to youth, women, the unemployed, and so forth were channeled last year through MFIs. The ultimate impact on MFIs is not clear. Some of these programs may have helped to bring poor clients into the service orbit of the MFIs through outreach and other development activities (literacy training etc.). The general performance of these credit lines in terms of repayment has been much lower than the average portfolio. Part of this may be that they are viewed as politically motivated. Moreover, interest rates are often set below prevailing market rates. Anecdotal evidence suggests that effects may be negative in the sense that messages to credit recipients are incoherent overall and these programs do little to help capitalize MFIs, and come with no training or institutional support above expenses.<sup>57</sup>

209. **The Government's efforts may be working at cross purposes when it comes to supporting the development of sustainable financial services to rural areas.** The success of the Senegalese micro-finance industry is notable, with some of the highest penetration rates in West Africa and an increasingly diversified set of financial services available. Although coverage in rural areas is still low, those microfinance institutions present are providing significant benefits to rural dwellers, including more secure and liquid savings opportunities, some level of agricultural credit, opportunities to finance economic diversification into services, and spill over benefits like payment of teachers salaries so they do not have to travel and, expected in the near future, a more secure channel for remittance transfers. However, over the long term, the Government policies of

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<sup>57</sup> There are some exceptions to this, for example AFDS has a pilot program with selected MFIs contracted on a competitive basis to extend outreach to poor rural communities.

forgiving rural debts and its preference for subsidized credit lines to ostensibly support poverty reduction may undermine the sustainability of MFIs. Moreover, there are several poverty reduction-oriented programs that seek to create small local 'caisses', but a proliferation of small, dispersed savings and credit mechanisms is difficult to supervise and they are not likely to grow and survive without links to larger federations.

### **Summary of Program Coverage, Gaps and Overall Expenditure Patterns**

210. **In summary, public expenditures on social risk management are spread across many sectors, coverage is limited but expanding, and monitoring of coverage and impact needs improvement.** Table 43 provides a general picture of amounts, coverage, gaps and key issues. There is a critical lack of information from many programs on numbers and geographical location of beneficiaries, making it difficult to assess the overall cost effectiveness and impact of programs.

211. **Although Senegal's PRSP includes most of the above areas of risk management, execution of planned expenditures has been less than hoped for in support of vulnerable groups.** A recently completed review of PRSP expenditures carried out by the World Bank (Public Expenditure Review, 1005), as well as the first two annual reports on PRSP implementation produced by the Government show that progress was uneven in reaching the goals set forth in the PRSP in this area:

- (a) Within the component to improve the living conditions of vulnerable groups, investments were realized in the areas of activities to protect children from dangerous work and exploitation through MFFSD, prevent malnutrition through the PRN, and support women via small credit and poverty reduction programs of MFFSD. There were no incremental investments made for the elderly or disabled nor expansion in many areas to assist children, including funding an increase in school lunches. The problem does not appear to be lack of financing, particularly since at the same time there has been a significant expansion of investment on non-PRSP areas, such as administrative buildings. Dispersion of programs, institutional instability, weak capacity, as well as a lack of political clout and visibility of vulnerable groups help explain this under-performance.
- (b) Within the creation of wealth pillar, agriculture and rural production received significant investments, including expansion of irrigation, investments in crop diversification, mobilization of the bonification, guarantee and calamity funds, and general rural development programs. Employment creation through public works and diversification of rural income bases received less attention.
- (c) In expanding access to social services, there have been extensive investments through the education and health sector programs (PDEF and PDIS) which form the core part of the PRSP. However, in health investments at the community level fell far short of the level envisioned. As mentioned before, there was significant investment in expanding access to education, which benefited rural populations.

212. **As the Government begins to revise its PRSP and set strategies for the next PRSP period, it will be important to better capture these elements of risk and vulnerabilities.** Since many of these expenditures, including social assistance transfers, food aid, school lunches, staffing of school and health centers, and routine services of the

agriculture and rural extension agents are not covered in the investment budget, but instead appear as recurrent costs, it will be important to expand the universe of expenditures captured under the PRSP to the broader national budget.

Table 43 : Synopsis of Expenditures on Rural Social Risk Management, billion CFA

Area	2004	Coverage, Issues and Gaps
<b>Social Assistance, Safety Nets and Natural Disasters</b>  <i>(Net of poverty reduction investments to communities)</i>	21.5  (6.0)	<ul style="list-style-type: none"> <li>▪ Disaster management has supported several thousand households affected, for example, by flooding. Cost per person assisted from US\$30-120. Coordination needed to avoid multiple and overlapping response</li> <li>▪ Transfers to vulnerable groups are about US\$1,100 per request. Total beneficiaries not available, but small share (less than 1%) of total vulnerable and few rural</li> <li>▪ No data on number of beneficiaries or amount per beneficiary of rice distribution but household surveys point to widespread distribution</li> <li>▪ ILO and UNICEF supported children at-risk programs reach under 15,000 children, or less than 6 percent of target population, at about US\$75 per child</li> <li>▪ Significant support for women's groups, no data on number or location of recipients</li> </ul>
<b>Agriculture and Livestock</b> (Total spending)	76.0	<ul style="list-style-type: none"> <li>▪ Most rural households depend on agricultural/livestock</li> <li>▪ Large subsidies to groundnuts via credit, inputs and price supports, scant information on impacts</li> <li>▪ Need for more expenditures on prevention (of parasites, cattle theft, etc.)</li> </ul>
<i>Of which specific risk mitigation and coping</i>	(9.1)	<ul style="list-style-type: none"> <li>▪ No data on number of producers helped by guarantee, calamity or bonification funds</li> <li>▪ Potentially negative impact on financial system</li> </ul>
<b>Health</b> (Total spending – not disaggregated for rural)	65.1	<ul style="list-style-type: none"> <li>▪ Low presence of trained staff in rural areas, difficulty retaining staff</li> <li>▪ Affordability is main issue – 25% of rural sick do not seek treatment due to cost</li> <li>▪ Half of rural population lives more than 3 kms from health center</li> </ul>
<i>Specific HIV-AIDS interventions</i>	13.5	<ul style="list-style-type: none"> <li>▪ Rural communities have increasing access to financing – recent scale up of activities in rural areas, though overall urban areas receive most</li> <li>▪ Only Ziguinchor has pilot outreach for rural treatment</li> <li>▪ Rural high risk groups (e.g. migrants and their families) should be targeted</li> </ul>
<i>Specific spending on malnutrition (PRN)</i>	5.6	<ul style="list-style-type: none"> <li>▪ Coverage of 12% of rural children under 3yrs at 4\$/benef.; \$17 for total program cost</li> <li>▪ Initial impact evaluation shows drops in malnutrition rates</li> <li>▪ Scale-up potential, with rural areas as priority to target largest malnutrition risks</li> </ul>
<i>Specific Malaria interventions</i>	n.a	<ul style="list-style-type: none"> <li>▪ Bednets are cost effective prevention strategy (about US\$5 per ITBN). Scale-up will require expanding outside of health system to increase coverage</li> <li>▪ Rural areas have highest risk and lower access to curative services</li> <li>▪ Epidemic early warning system is possible for the north</li> </ul>
<b>Education</b> (total spending on rural primary education)	26.1	<ul style="list-style-type: none"> <li>▪ 300,000 rural children out of school</li> <li>▪ Recurrent cost per rural student \$58 per year</li> <li>▪ School lunches - \$21 for recipients of WFP lunches, but problems reaching poorest students 511,000 rural students not receiving school lunches</li> <li>▪ Demand-side factors a key challenge</li> </ul>
<b>Employment Generation</b>	1.8	<ul style="list-style-type: none"> <li>▪ Overall coverage figures for employment programs (via credit and training) low and urban-centered. At most optimistic, 25,000 jobs created or 1 % of 20-40 yr olds</li> <li>▪ No consolidated information on job creation through public works nor linkages to rural seasons</li> <li>▪ Poverty-focused rural infrastructure programs shown to reach poorer rural communities, decentralized management creates local economic multipliers</li> </ul>
<b>Savings and Credit</b> (total of various credit lines – includes credit programs founding above sectoral categories) <sup>58</sup>	9.5	<ul style="list-style-type: none"> <li>▪ Not including the agricultural funds (FB, FG) which are channeled through CNCAS, credit lines account for 7 percent of total MFI credits</li> <li>▪ Lower repayment rates on Government credit lines through MFIs and CNCAS)</li> <li>▪ Beneficiary selection disfavors access of rural and poorer households – information on total beneficiaries not available for many programs</li> <li>▪ Inconsistencies with strategies for sustainable expansion of microfinance</li> </ul>

<sup>58</sup> :FB, FG, AFDS, PCLP, FNPJ, FNAE, Program of Credits to Women MFFDS/Taiwan

## CHAPTER V: Key Policy Reform Options and Expenditure Priorities

### Bringing Risk into Policy Focus

213. **The rationale for policy intervention arises when individuals fail to attain optimal levels of risk pooling, saving, and prevention.** Theoretical justifications for Government interventions in risk management include (from Gill and Iliahi 2000):

- (a) to provide risk-pooling instruments in the cases of market failure in information (disasters, pre-existing health events with catastrophic results like malnutrition);
- (b) to provide superior risk management measures (like safe and reliable forms of liquid savings) when individuals would otherwise only have access to inferior mechanisms (using livestock as precautionary savings);
- (c) to build and protect human capital as a risk prevention strategy (better educated individuals are more likely to invest in preventative activities like pre-natal care, healthier children are more likely to attend school and adults to work);
- (d) to make up for capital market failures where individuals without access to credit or savings under-invest in risk management instruments; and
- (e) to invest in less costly prevention measures for which either individuals may not have the resources or there is a public good nature and coping costs to the government are high, such as vaccinations, flood and locust control.

214. **The PRSP and sectoral policies identify main risks.** But, there has been less attention to whether programs and expenditures line up with these risks, who benefits and the impact of policies and expenditures on reducing risks. It is important for policymakers to identify the risk being addressed as well as the justification for intervention. Does the mechanism proposed adequately address the risk? Who is covered or excluded? How much prevention, mitigation or coping is 'bought' with this public spending?

### Improving the Targeting, Relevance and Impact of the Nascent Social Safety Net

215. **As income levels rise, governments tend to spend more, not less, of their resources on safety nets and other social assistance to vulnerable groups.** Senegal has a patchwork of social assistance, most internally financed, but it suffers from a dispersion of effort and a lack of clarity on what is to be achieved. The core challenge is to create mechanisms tied to programmatic objectives to reduce vulnerability.

216. **To achieve this end, specific recommendations involve:**

- (a) The report points out the multiplicity of institutions, with problems of lack of coherence, dispersion of efforts and duplication. Moreover, there is no obvious institutional home for risk and vulnerability as a transversal issue. The institutional framework has suffered from shifting responsibilities and ministerial dismemberments. The formation of the National Social Protection Strategy Steering Committee may help to improve strategy setting across ministries, but it needs to ensure that it is operational. Implementation of a joint annual review mechanism like the one used in

health and education to bring together the diverse actors and partners and monitor progress annually could be an effective mechanism.

- (b) Consolidation of the various transfers to vulnerable groups (women, elderly, disabled etc.) into a coherent set of interventions. Efforts are diluted across ministries and dispersed in too many small programs leading to duplication. The Government will need to prioritize programs that are substantial enough in size to capture administrative economies of scale and to reach a greater share of the target populations.
- (c) Transition from the current 'unconditional transfer' mode to a programmatic focus on assisting targeted groups reduce their vulnerabilities. This includes moving to program-based budgeting by objective with indicators of outputs and goals for geographical coverage. In the area of disability, the Community-Based Re-adaptation Program, which holds promise as a cost-effective approach, has been approved and staff trained, but investment resources have not yet been allocated. In other areas like grants to organizations working with vulnerable groups, there needs to be greater focus on what services the Government is purchasing with these transfers (e.g. number of children reached, cost per beneficiary, % of disabled finding employment etc.). Several countries have initiated conditional cash transfer programs (see Box 7). The Government of Senegal's PRSP calls for design and piloting of such an incentive system to increase human development outcomes among poor households, however, no progress to date has been made to define such a program.

**Box 7: Conditional Cash Transfers to Boost School Enrollment and Health Utilization**

Several developing countries have recently introduced conditional cash transfer programs which provide money to poor families contingent on certain behavior, usually investments in human capital, such as sending children to school or bringing them to health centers, as an alternative to traditional social assistance programs and a demand-side complement to the supply of health and education services. Rigorous impact evaluations for programs launched in Colombia, Honduras, Jamaica, Mexico, Nicaragua, and Turkey reveal successes in addressing many of the failures in delivering social assistance. These conditional cash transfer programs demonstrated a positive effect on enrollment rates for both boys and girls, improvements in child health and nutrition, including nutrition monitoring and immunizations, and increases in household consumption., for example as measured by median caloric intake per person. Monthly subsidies vary between program and country, ranging between US\$4 and \$13 per beneficiary (family or individual) per month. The flagship program PROGRESA in Mexico currently serves 20 million people or one-fifth of Mexico's population.

From Rawlings and Rubio (2005)

- (d) A tighter focus on the truly vulnerable and adoption of targeting to the risk rather than the general group which include individuals that may not be at risk. Categories like 'women' or 'vulnerable communities' are too broad to ensure appropriate targeting and create opportunities for elite capture. Ensuring that resources flow to those at greatest risk can be furthered through better analytical tools (poverty maps, identification of household characteristics, community-based targeting mechanisms). Moreover, in the absence of easily identifiable household or village characteristics of poverty and limited data and administrative capacity to target benefits to specific

households, the Government should explore targeting to the risk rather than the person. This could include grouping transfers to needy individuals, distribution of rice and expenditures on public works to critical times of the year in synch with the agricultural cycle, or providing school grants to orphans as they are at greater risk of not attending, or identifying villages experiencing multiple negative shocks and prioritizing public investments to them.

- (e) Improving the legal framework. Reducing the vulnerability certain groups (e.g. disabled, children being exploited, divorced and widowed women, rural populations in conflict over land titles) can be addressed in part by changing, or better enforcing, laws and better informing the population of their rights.

### **An Integrated Approach to Disaster Management**

**217. Disaster management is one of the most visible and appropriate areas of Government intervention.** Effective response requires a pre-established institutional framework, accessible resources and simplified criteria and procedures. For civil emergencies, like fire, accidents etc., the basic institutional elements are in place, but lack clearer division of responsibilities in assisting affected populations.

**218. From experience in recent years, the most frequent disasters are linked to natural shocks in rural areas.** The Civil Protection system is limited in the case of agricultural calamities and the main agricultural response systems, like the FC, is not linked with the other mechanisms, like the CSA, the NSF and others. Recommendations to enhance the efficiency and effectiveness of the system include:

- (a) Integrate natural disaster responses: Responses to risks tied to the person (loss of life, needs of temporary assistance in food, cash, materials) need to be integrated with response to risks tied to production (loss of crops, seeds, livestock). At present, the responses run in parallel, reducing overall effectiveness.
- (b) Reduce reaction time and cost of response through early warning systems. There are several parts of a disaster early warning system in place or in process.<sup>59</sup> Increased predictive power through vulnerability modeling and hazard analysis would help to identify those zones and people at greatest risk and develop lead indicators based on analysis of previous disasters, particularly since these disasters are not random, but concentrate in certain times of the year, among specific sub-zones and are linked with certain threshold occurrences. The system should be targeted to the most frequent and economically damaging shocks and based on existing national scientific and technical capacity as well as international systems (CLCPRO and EMPRESS for locusts). Clear guidelines on responsibilities, including the centralization of information and its dissemination, are needed.
- (c) Better identify those affected and the extent of damages. The most difficult phase in disaster management is the evaluation of damages and identification of affected

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<sup>59</sup> CSA's Food Security Bulletin, FEWS, the National Meteorological Department, the Ecological Monitoring Center, Climate Change and Drought Program (*Institut des Sciences de la Terre – UCAD*), Water Resources Monitoring System (Dept. of Water Resources and Management) Ministry of Agriculture and Hydraulics, Locust Early Warning System (EMPRESS, FAO and the Ministry of Agriculture and Hydraulics' Dept. of Plant Protection).

households. Methodologies exist to develop loss profiles for the principal types of agricultural risks and should be systematically applied (for example how to estimate loss of crops or livestock in the case of drought, floods or locusts). The same standardization of methodology should be applied to create financial models of predicted resource needs in the case of other disasters.

- (d) The level of resources committed in the face of natural calamities (for example locusts in 2004) justifies a greater investment in the prevention of shocks, including flood protection and plant and animal disease control.

### **Better Managing Agricultural Risks**

**219. Traditional shocks of drought, insects, and plant and animal disease are joined with modern shocks associated with those of an open economy in the process of changing economic production systems as well as growing social ills like livestock theft.** Responses have been put into place for prevention as well as coping with the after effects of these shocks, at significant financial cost. But the impact of these measures has been limited by a lack of clarity in rules of the game and a dispersion of responsibilities. Modern instruments to manage agricultural risks have not yet been sufficiently explored.

**220. In the absence of the development of a private insurance market and limitations of the agricultural credit market, the Government has become both the lender and insurer of last resort.** The central role of the State as ultimate risk management mechanism for rural production poses several problems, including fiscal sustainability, moral hazard and overall efficiency. Even if the nature of the problem will require public financing for the medium-term, it does not necessarily follow that the government is best placed to manage this system. Key recommendations include:

- (a) Given the importance of development of sustainable rural credit systems and the need for effective mechanisms to manage risks, the Government should carry out an evaluation of the experience over the last few years of the various funds created, including the potential distortionary effects on credit behavior, and spill over effects on the broader rural finance situation including MFIs. If retained, the State should favor the management of the credit securitization funds, and notably the guarantee fund, by contracting private sector services.
- (b) Investigate the applicability of agricultural insurance instruments, like weather-indexed-based agricultural insurance, currently being implemented in several developing countries (Morocco, Mongolia, to cite a few) are applicable to both rainfed agriculture and extensive livestock systems of Senegal (see Box 8).
- (c) Prevent shocks through developing irrigation, including small-scale groundwater irrigation in the Groundnut Basin, and facilitation of access to appropriate technologies, research, dissemination and training of producer organizations.
- (d) Reconsider the policy of blanket rural debt forgiveness. It is too blunt an instrument, subject to political pressures, does not necessarily help the poorest rural producers, and may adversely affect the development of sustainable agricultural credit.
- (e) Develop better informational tools to underpin the agricultural risk management system, including a Livestock Census and a Professional Electronic Card (*Carte*

*professionnelle électronique*) linked to the national identity card that would include basic information (land ownership, areas under production, units of livestock etc.).

### Box 8: Index-Based Agricultural Insurance<sup>1</sup>

The inherent instability of farm income has led governments to devise programs and policies that have a stabilizing effect on agricultural income. Public subsidized agriculture insurance has been implemented in more than fifty countries as a mechanism to stabilize farm incomes by reducing exposure to production risks, mainly under a private-public partnership. In the past however the experience with subsidized insurance programs has been disappointing. A new framework for the financing of agricultural risks, supported by the World Bank Contractual Savings and Insurance Unit, highlights the objectives and modalities of index-based insurance:

- ***Differentiating market-based insurance and social insurance.*** The lack of clarity regarding the objectives of public interventions in agricultural insurance has contributed to its inefficiencies. Social insurance with a safety-net function aims at assuring a minimum economic security to farmers involved in low return activities. These social objectives rely on redistributive subsidies. Market-based insurance is oriented toward viable business activities that generate enough profit to afford insurance premium. These instruments, based on sound actuarial principles, should apply only to viable farms whose survival may be jeopardized by the occurrence of an insurable event.
- ***Assessing agricultural production risks.*** The existence of reliable and accurate long-term loss data series is a precondition for the development of any market-based product as they are used to assess the future probable losses. Individual farm data are almost always missing or unreliable. Consequently, loss assessment is performed using aggregate data to provide an objective estimate of potential losses and capture the spatial correlation of losses caused by widespread events.
- ***Selecting an insurance index.*** Index-based insurance makes payments based on an index, irrespective of the individual losses. It transfers covariate production losses caused by widespread weather events (e.g., floods, droughts) or epidemics to financial and reinsurance markets. Index-based contracts offer advantages over traditional individual insurance (reduced moral hazard and adverse selection, low administrative costs, standardized product) but it exposes the contract buyer to the possibility that the payout is different to the individual loss, and relies on good data.
- ***Experiences in index-based insurance.*** Area yield crop insurance, where the index is based on the average yield in a given geographical area, has been offered in Morocco, India, Brazil, Canada and the USA. Parametric insurance (e.g., rainfall insurance) has been proposed in Canada, India and Mexico. A livestock mortality index has been recently considered as a basis for indemnifying herders in Mongolia. The mortality index-based insurance pays indemnities whenever the adult mortality rate exceeds a specific threshold for a localized region.
- ***Financing agricultural production risks.*** Risk financing strategies deal with the remaining part of the risks that cannot be mitigated with cost-effective preventive measures. They are financed through farmers' self-retention, private financial markets, and governments and international donors through an appropriate layering of risks. The *bottom layer of risk* includes high frequency (e.g., occurring once every five years or more frequently) but low consequence risks that affect farmers from a variety of mainly independent risks. The *mezzanine layer of risk* includes less frequent (e.g., occurring once to six times every 30 years) but more severe risks that affect several farmers at the same time (e.g., hail, frost). The *top layer of risk* includes low frequency (e.g., occurring once in 30 years or less frequently) but high severity risks. These catastrophic risks are by definition not well documented and the probable maximum loss can be very large.

From Olivier Mahul, The Financing of Agricultural Production Risks: Revisiting the role of agriculture insurance. Contractual Savings and Insurance Unit, World Bank. Draft January 2005

## Improving Rural Health and Education Outcomes

221. **The greatest challenge to improving Senegal's human capital is in the rural areas.** The ability of the sectoral ministries to ensure that adequate facilities, staff, materials and other support are effectively allocated to rural areas has been a continuing issue. Conditions in rural areas have made it difficult to recruit and retain qualified staff. Centralized budget systems have limited access to and control over resources and decisions to a handful of central actors. To boost performance of rural health and educational systems, systemic changes in how and where decisions are made over allocation of funding and personnel may be necessary. Initial experience in education of delegating budgets to IDEMs appears encouraging and similar actions are proposed for health in the PNDS Phase II policy document. In addition, specific sectoral recommendations include:

222. **For education, addressing rural risk requires demand-side strategies as well as continuing the good momentum in building and staffing rural schools:**

- (a) Development of an expanded program for school lunches in rural areas that is affordable within fiscal constraints and addresses issues of access by the poorest. Using the WFP's estimate of per student cost per year of US\$24, 13 percent of which is paid by parents, expanding coverage of school lunches to all rural primary students in Diourbel, Louga and Kaolack for example (242,000 students) – the regions with the lowest rural enrollment rates – would cost on the order of US\$5.1 million in 2006, rising to US\$6 million over the next two years as enrollments expand. This would represent a 10 percent increase in rural education spending, or about 1.2 percent of total education spending
- (b) Diversification of educational programs relevant for rural populations, including language of instruction and local curriculum concerns;
- (c) Identification of options to address the trade-offs parents face between farm labor, and agricultural cycles in general, and schooling. Some countries have adjusted the rural academic year to better avoid conflicts with peak family labor times. Other options include revisions to the schedule for payment of school fees.
- (d) As part of social assistance programs, making school enrollment conditional on receiving support that is provided by MFFSSD for orphans, children at risk, disabled etc. and including provisions for school expenses within this support.
- (e) Expansion of the school-based health program to deepen rural coverage and address critical rural health risks that cause children to drop-out.

**Health policies can boost prevention of critical rural health shocks through:**

- (a) PNDS II calls for expansion of midwives at the health post level, which should be allocated by priority to rural areas where maternal mortality is highest.
- (b) Investing in better community-level services, including outreach equipment and materials, can help to link remote health posts and huts with the referral system.
- (c) PNDS Phase II proposes incentives for health workers in 'difficult' areas and a rural premium. However, an extensive list of other incentives (e.g. for performance, responsibilities) is administratively unwieldy, subjective and may dilute impact.
- (d) PNDS II would address affordability through expansion of community-based health insurance and exoneration of fees for the indigent and vulnerable groups. No

specific mechanism is yet designed for the latter, but given the abuses inherent in such a system, Senegal could benefit from international experience in designing effective fee waiver options (see Box 9).

- (e) In preventing malaria through bednet distribution, the existing network of NGOs and rural health facilities do not reach the majority of rural residents. Given the impacts of malaria, the full force of rural associations should be enlisted, including women's groups and village development associations who have more village presence. While social marketing is an important element, it excludes families too poor to afford prevention. Given the greater cost of treating (or leaving untreated) malaria, increased prevention expenditures can reduce overall costs. For the North, an early warning system can better address epidemics.
- (f) Effective models of interventions to prevent malnutrition should be mainstreamed and scaled-up. To limit costs, more refined geographical targeting will be necessary, including a priority on rural areas.
- (g) HIV-AIDS efforts should be targeted to specific risks and characteristics of rural populations and treatment models diversified to allow greater access by rural residents.
- (h) Community-based health insurance schemes can increase utilization of services and mitigate the effect of health shocks on families, though their applicability will be limited in reaching the poorest families.

#### **Box 9: International Experience in Waivers and Exemptions for Health Services**

In response to shortages in public budgets for government health services, many developing countries around the world have adopted formal or informal systems of user fees for health care. The problem with user fees is that the lack of provisions to confer partial or full waivers to the poor often results in inequity in access to medical care. The dilemma, then, is how to make a much needed system of user fees compatible with the goal of preserving equitable access to services. Different countries have tried different approaches. Those which have carefully designed and implemented waiver systems (e.g., Thailand and Indonesia) have had much greater success in terms of benefits incidence than countries that have improvised such systems (Ghana, Kenya, Zimbabwe). Key to the success of a waiver system is its financing. Systems that compensate providers for the revenue forgone from granting exemptions (Thailand, Indonesia, and Cambodia) have been more successful than those who expect the provider to absorb the cost of exemptions (Kenya). Where waiver systems exist, performance will improve with the timeliness of the reimbursement. Other success factors include the widespread dissemination of information among potential beneficiaries about waiver availability and procedures; the awarding of financial support to poor patients for non-fee costs of care, such as food and transportation (as in Cambodia); and the existence of clear criteria for the granting of waivers, thereby reducing confusion and ambiguity among those responsible for managing the system and among potential recipients.

From Ricardo Bitrán and Ursula Giedion, Waivers and Exemptions for Health Services in Developing Countries, Social Protection Discussion Paper No. 0308; Publication Date: 3/03, World Bank

## The Biggest Gaps: Rural Income Diversification and Expanded Financial Services

223. **In their private risk management strategies, rural households often seek to diversify out of agriculture.** Household surveys show that in general the more successful rural households are those less reliant on agricultural income. Priority actions to enhance income diversification include:

- (a) Rural public works program (or improving the employment focus of existing rural infrastructure programs): Lessons from extensive international experience of public workfare from countries in Sub-Saharan Africa and Asia particularly confirm the considerable potential to help the poor cope with covariate risks associated with climatic and systemic shocks (Subbarao 2001). Advantages include: (i) income transfers to poor at critical times; (ii) consumption smoothing benefits to counter shortfalls during slack seasons; (iii) minimization of the trade-off between public spending on income transfer versus developmental activities via construction of infrastructure; (iv) can be targeted to communities most at risk.
- (b) Evaluation of the lessons learned from income-generating projects in rural areas. There is a vast array of projects and millions of dollars spent each year to support income generating activities across many ministries and programs, as well as NGOs, each using different approaches. To date, there has been little review of the impact of these on incomes and no systematization of lessons learned.
- (c) Expansion of savings and credit mechanisms. Beyond generating capital for rural economic growth, the broader benefits of protection of assets, enhanced ability to smooth consumption, and fostering remittance flows to rural households place this as priority for rural risk management. While existing practice of subsidized credit lines need reconsideration, options to promote expansion of MFIs into rural areas, drawing on international best practice and country experience, should be analyzed. Possible approaches include developing guarantees better suited to rural areas, removing distortions from subsidization, developing matching grants to encourage MFIs to expand their networks, and developing linkages between MFIs and banks. These efforts must be accompanied by capacity building through training, management information systems and technical assistance so that they can adequately manage expansion. Moreover, currently most supervision by Government regulatory agencies is focused on urban MFIs. Increased budgets for these efforts are needed better monitor rural institutions since they manage considerable volumes of savings and money transfers that would be at risk should the institutions fail.
- (d) To optimize the impact of remittances, many governments aim to provide their migrant communities with better information on transfer services and costs (e.g. Mexico, Bangladesh), and some attempt to attract remittances also into investment vehicles or programs they have launched, such as a pension plan or business ventures based on matching or joint inputs. Other countries, such as Haiti, have negotiated to bring down the price of international transfer services.

## **Towards a More Equitable Distribution of Public Goods to Rural Areas**

224. **Overall, public investments and expenditures are tilted to urban areas.** In addition to expanded private sector opportunities, the likelihood of benefiting from public spending is greater for city dwellers. While it was outside the scope of this review to analyze overall geographic expenditure patterns, most ministry expenditures (with the exception of agriculture) show a general concentration of resources in urban areas, notably Dakar. This bias may help explain part of why rural areas have lagged behind their urban counterparts in terms of poverty reduction.

225. **At the same time, this review has confirmed a growing number of effective delivery mechanisms for investments in rural areas.** Decentralization and the use of community-driven investment programs have shown that even the most remote communities can be reached in an efficient manner. NGOs are increasingly being contracted by the State to provide outreach services in HIV-AIDS, malnutrition, and general community development. The panoply of mechanisms scattered across ministries requires harmonization and rationalization, but the basic conditions of scaling up are present. This scale-up can have positive spill-over effects on rural economies and institutions, including creating a stable technical staff in rural local governments, NGOs, and other decentralized programs as well as local economic multiplier effects (and cost savings) through contracting with local construction firms and suppliers.

## **Putting the Pieces Together – a Multi-Sectoral Approach to Risk Reduction**

226. **Looking at risks from a multi-sectoral perspective helps identify vicious cycles that will require collaboration between sectors.** This review has identified a number of vicious or virtuous cycles of interactions between sectors. For example, the health sector targets its anti-malaria efforts on pregnant women and children under 5 years of age who are at greatest mortal risk. However, malaria is also an educational risk, with illness of children – of which malaria is the leading cause – a key determinant of not achieving primary education. Thus, to prevent education shocks, malaria prevention and treatment policies will need to include a focus on school-age children. Rural infrastructure investments are important for expanding access to services, but they also can serve the interests of income and employment policies. Social assistance programs and food aid can be linked to achieving outcomes in terms of meeting the MDGs in nutrition, education, vaccinations, and reduction of extreme poverty if appropriately designed.

227. **This multi-sectoral approach would benefit from additional diagnostic work in several key areas.** The dearth of information on program coverage and characteristics of beneficiaries limits understanding of the reach and targeting of current policies and programs. At a minimum, programs should begin to report number of beneficiaries and general benefit levels to complement the existing emphasis within the PRSP on expenditure amounts. In addition to improvements in administrative information on coverage, national households surveys, especially those oriented to monitoring the poverty situation, should be expanded to include a module on coverage of public programs. In addition, creation of a national panel household survey, which several countries have done, will provide a far better diagnostic tool in tracking the dynamic interactions of poverty and risk. While there

are several programs that have included rigorous impact evaluations, such as PRN and PNIR, these remain the exception, with too little information generated on the performance and effectiveness of programs. As part of PRSP monitoring and evaluation, the Government should identify a set of critical programs that should have impact evaluations and enlist international experience and donor financing to review experience. This will make it easier to attract incremental funding to scale-up programs that have an impact.

**228. The revision of its Poverty Reduction Strategy Paper and development of a National Social Protection Strategy in the coming months affords the Government an opportunity for highlighting the importance of risk and vulnerability to poverty reduction and for making the multisectoral linkages more explicit.** The process has benefited from broad stakeholder discussions and significant input from Senegal's external partners, creating conditions for donor alignment on these themes. Moreover, the transition to more sophisticated risk management instruments, including better targeting of programs to at-risk groups as well as the development of market-based mechanisms, like insurance or expanded financial services, is an integral part of the broader development process. Enhancing rural households' ability to prevent, mitigate the impact of or recover from the frequent shocks they face will be a key determinant of Senegal's ability to meet its development objectives.

## ANNEX A: Description of Main Data Sources

- **Enquête Sénégalaise Auprès des Ménages (ESAM II)** – This is the most recent national household survey implemented in 2001-02 by the National Statistics Department which includes modules on household consumption and expenditures, labor and migration, health and nutrition, education, and household assets (based on QUID modules); As part of the ESAM II a qualitative
- **Perceptions of Poverty** survey was carried out the gauged respondents impressions of poverty and identification of priority needs. The survey is representative nationally, urban-rural and by region;
- **Enquête sur les Objectifs de la Fin de Décennie sur l'Enfance (MICS – II, 2000)** – Carried out by the Government of Senegal and UNICEF, the household survey contains data on well-being of rural (and urban) children in the areas of health, education, water and sanitation, child labor and orphanhood. Representative nationally and rural-urban;
- **PASEC Data set** -- The data set consists of panel data from the PASEC (*Programme d'Analyse des Systèmes Educatifs de la CONFEMEN*) standardized achievement test (1996 base year through 2003), together with community, school and household modules applied in 2003 to identify contributing factors to student performance as well as a household schooling decisions. Sample was based on 118 primary schools, of which 58 rural. Village questionnaire applied to 32 rural communities; household survey to 938 rural households. The data is representative nationally and rural-urban for school children (sample bias against communities without schools). Since this is the only source for information on such issues as access to rural credit, perceptions of shocks, etc. we have chosen to report findings from the survey that are not linked to education, despite the slight sample bias.
- **National Agricultural Census 1998-99** – Has both a village and household questionnaire which includes agricultural assets and production, access to infrastructure and farm labor;
- **Groundnut Poverty and Social Impact Assessment (PSIA)**–Household survey carried out in 2003 in the Groundnut Basin to estimate the effects of changes in the structure of production and commercialization in the groundnut sector

## Annex B: Statistical Annex

### Chapter II

**Table II.a: Senegal poverty incidence by region (%)**

Region	Total	Urban	Rural
Kolda	73.4	52.7	76.1
Dakar	42.5	42.0	57.9
Ziguinchor	74.5	75.7	73.7
Diourbel	69.7	50.2	73.8
Saint Louis	51.8	39.6	56.2
Tambacounda	65.7	28.0	71.5
Kaolack	71.9	61.2	75.1
Thies	56.2	46.7	62.8
Louga	42.6	22.9	46.3
Fatick	54.0	48.1	55.0

Source: Senegal ESAM-II

**Table II.b. Distance to Water, Education, Health by Rural Quintile**

Rural areas only: Access to water, school and health center						
access to water sources		Distance				Total
exp quintiles	in the community	< 1 km	1-3 km	3+ km	na	
1	92.56	3.6	2.3	1.54	0	100
2	90.85	4.15	3.53	1.47	0	100
3	92.45	3.77	1.99	1.56	0.23	100
4	87.26	4.76	4.02	3.96	0	100
5	84.27	4.11	3.21	8.24	0.17	100
Total	89.15	4.14	3.08	3.54	0.09	100
<b>access to primary school</b>						
1	72.14	5.13	11.25	10.3	1.18	100
2	65.94	4.7	12.08	14.41	2.87	100
3	61.14	5.17	12.37	15.17	6.14	100
4	58.09	5.43	15.04	16.57	4.87	100
5	58.34	4.66	10.67	21.98	4.35	100
Total	62.05	5.03	12.49	16.21	4.22	100
<b>access to secondary school</b>						
1	7.14	2.54	10.03	78.32	1.96	100
2	4.32	1.1	5.74	84.08	4.75	100
3	4.69	0.69	8.64	79.11	6.88	100
4	5.74	0.89	6.9	80.61	5.85	100
5	6.82	1.21	5.33	81.87	4.75	100
Total	5.62	1.15	7.12	80.92	5.17	100
<b>access to "case de santé"</b>						
1	28.98	1.06	8.85	50.54	10.58	100
2	26.03	1.79	6.55	52.87	12.77	100
3	19.63	1.9	7.45	53.28	17.74	100
4	18.9	1.75	7.73	54.48	17.15	100
5	17.81	1.42	6.44	57.39	16.94	100
Total	21.43	1.64	7.31	54.03	15.6	100
<b>access to "maternité"</b>						
1	33.38	3.59	16.03	45.7	1.31	100
2	22.76	3.02	12.56	61.04	0.63	100
3	24.93	4.25	16.52	53.8	0.5	100

4	23.29	5.01	13.44	58.02	0.23	100
5	22.54	3.82	13.6	59.91	0.13	100
Total	24.63	4.03	14.32	56.55	0.48	100

Source: Senegal ESAM II

**Table II.c: Distance to Formal Financial Institutions, Rural households by asset index**

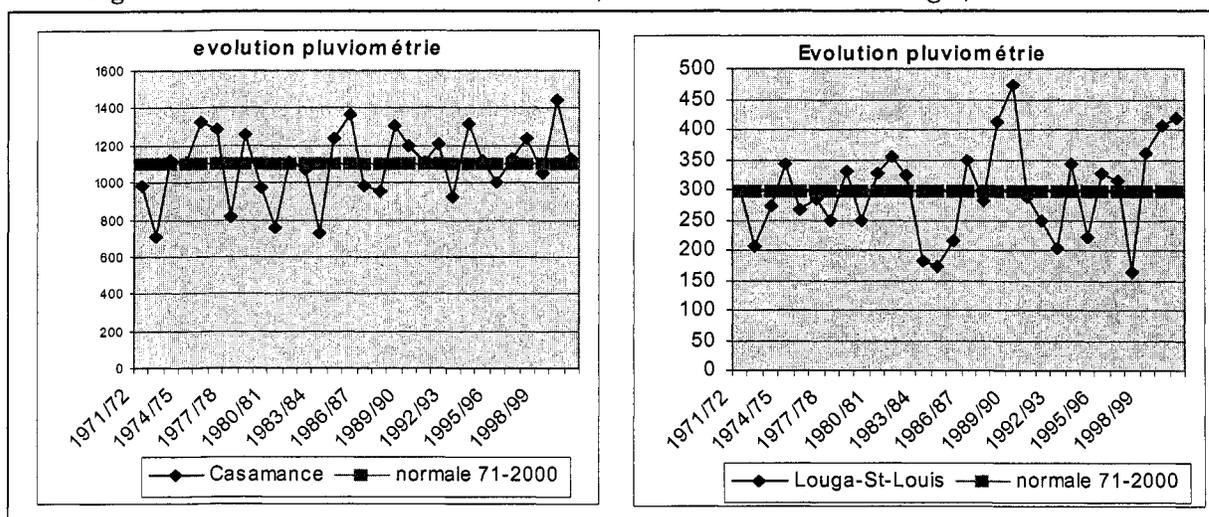
	Asset Q1 (poorest)	Asset Q2	Asset Q3	Asset Q4	Asset Q5 (richest)
Median distance from household to a private bank	18	29	29	29	24
Average distance from household to a private bank	23	24	27	26	24
Median distance from household to a credit mutual	14	4	11	13	15
Average distance from household to a credit mutual	10	10	12	17	19

Source: PASEC data set, Bank estimates.

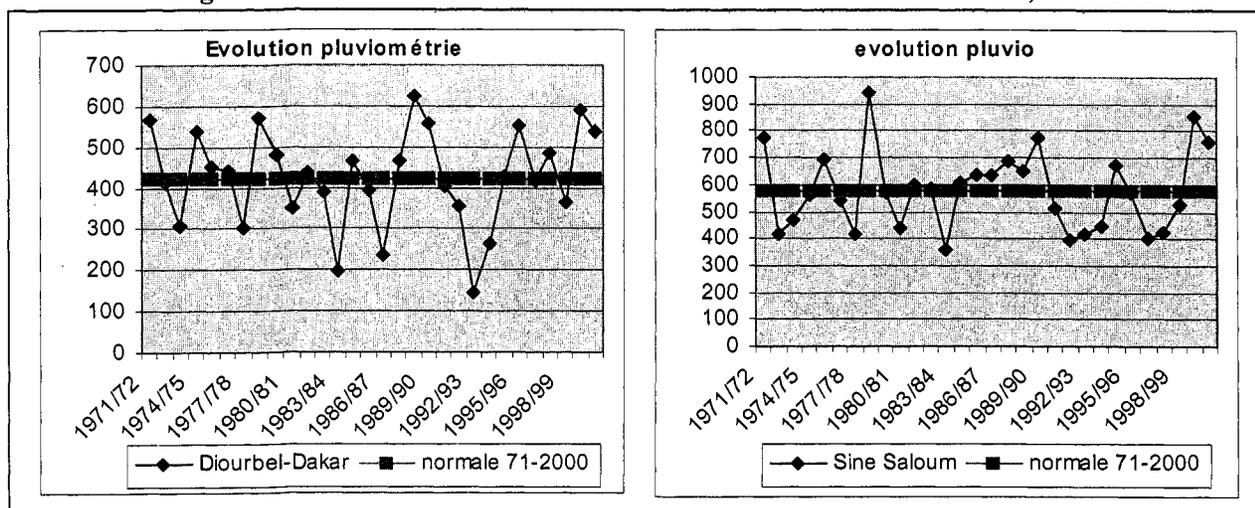
**Table II.d : Average Annual Rainfall by Region (in millimeters)**

	Casamance	Diourbel-Dakar	Louga-St-Louis	Sén Oriental	Sine Saloum	National Annual Average
1990/91	1111	402	287	656	511	593
1991/92	1211	354	250	671	394	576
1992/93	923	146	203	551	415	448
1993/94	1320	263	342	401	443	554
1994/95	1120	428	220	904	672	669
1995/96	1006	552	326	755	570	642
1996/97	1129	419	316	782	401	609
1997/98	1235	484	165	660	420	593
1998/99	1051	364	359	765	528	613
1999/00	1444	589	407	952	854	849
2000/01	1128	538	417	839	762	737
2001/02	1070	535	340	704	640	658
2002/03	783	357	221	720	466	509

**Figure IIa : Evolution of Rainfall in South, Center and North of Senegal, 1971-2000**



**Figure II.b : Evolution of Rainfall in Dakar-Diourbel and Sine Saloum, 1971-200**



Source: National Meteorological Department

**Table II.e: Percent of households that had one or more bad harvests in last 10 years**

	Rural		Dakar		Other Urban Centers		Total	
	Affected	en %	Affected	en %	Affected	en %	Affected	en %
YES	1 223	87,42	14	3,76	203	36,64	1 440	61,94
NO	176	12,58	358	96,24	351	63,36	885	38,06
Total	1 399	100	372	100	554	100	2 325	100

Source : PASEC dataset.

**Table II.f: Evolution of the agricultural situation**

Year	Prospected Areas	Infected Areas	Treated Areas	% infected/	% treated/
				prospected	prospected
1999	777006	403535	208450	52%	52%
2000	478566	183731	125148	38%	68%
2001	233763	141400	99600	60%	70%
2002	288825	117681	51925	41%	44%
2003	362800	150531	42983	41%	29%
2004*	1769610	1453633	765497	82%	53%

Source : DPV/MAH

\* situation as of March 2005

**Table II.g : Incidence of Livestock Disease**

Disease	# of households	# of illnesses	# of deaths
Plague from small ruminants	12	537	288
Clavelée	3	78	7
Foot-and-mouth disease	12	250	4
Newcastle diseases	2	6	6
Equine plague	5	24	12
Nodular dermatosis	12	712	0
Bovine Pasteurellose	65	230	125
Pateurellose from small ruminants	41	975	588
Botulism	17	192	115
Bacterial coal	14	92	85
Symptomatic coal	30	154	76

Source : Direction de l'élevage/MAE année 2000

**Table II.h: Primary Reason Cited for Reduction in Area Under Cultivation Among Groundnut Basin Producers, by poverty level and consumption quintile**

	Non Poor	Poor	Q1	Q2	Q3	Q4	Q5
Lack of seeds	71.7%	68.2%	66.6%	69.8%	71.6%	76.9%	64.0%
Lack of fertilizers	4.6%	9.5%	11.6%	7.6%	7.2%	2.6%	3.0%
Lack of labor	3.1%	2.5%	3.2%	1.6%	2.2%	2.8%	5.4%
Lack of equipment	2.6%	3.8%	3.6%	3.9%	3.0%	2.1%	2.9%
Lack of draft animals	0.2%	0.4%	0.0%	0.9%	0.0%	0.0%	0.6%
Difficulties in obtaining loans	3.1%	2.7%	1.5%	3.8%	2.7%	3.8%	3.0%
Bad climate conditions	8.3%	6.2%	6.1%	6.3%	6.2%	6.6%	14.2%
Bad quality of seeds	3.3%	2.2%	2.8%	1.8%	4.2%	1.9%	3.1%
Very low prices	0.0%	1.1%	2.3%	0.0%	0.0%	0.0%	0.0%
Infestations	0.4%	0.2%	0.0%	0.4%	0.4%	0.0%	0.7%
Illnesses/injuries of labor	0.6%	0.4%	0.0%	0.8%	0.5%	0.0%	1.4%
Difficulties in Selling	0.4%	1.0%	0.7%	1.3%	0.4%	0.6%	0.0%
Other	2.0%	2.0%	1.7%	2.0%	1.8%	2.8%	1.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

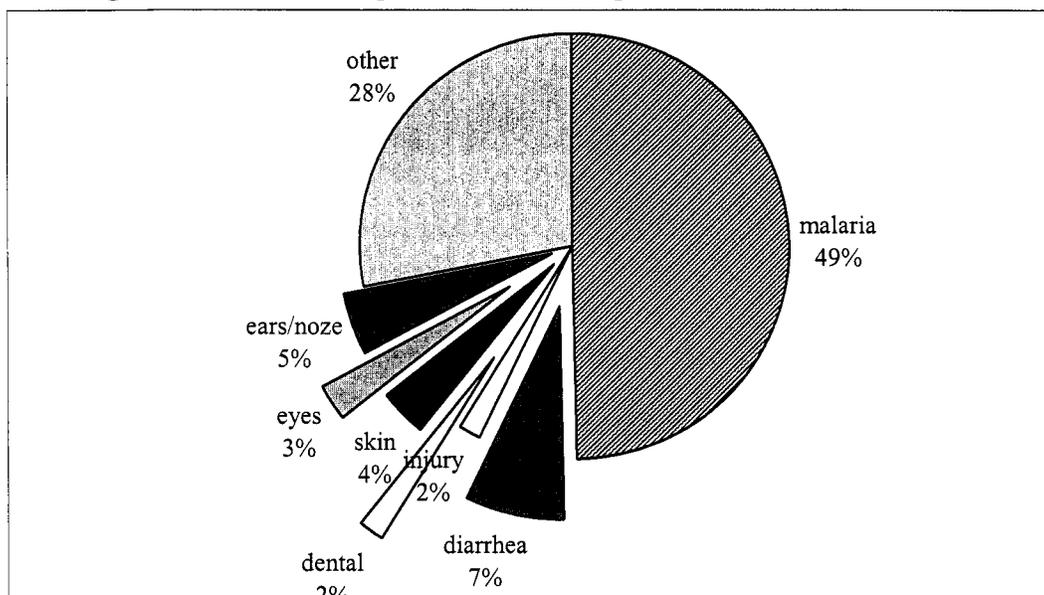
Source: PSIA Groundnut Basin Survey

**Table II.i: Morbidity and health care utilization (10-64 y.o., %)**

	Urban	rural	total
Number of days absent from work/school			
None	53	43	47
less than 7 days	28	33	31
7 to 14 days	9	13	11
more than 14 days	8	10	9

Source: Senegal ESAM II

**Figure II.c: Causes of reported illness during last month, rural households**



Source: Senegal ESAM II

**Table II.i : Percentage of sick or injured people over the last 4 weeks by type of illness/injury, sex and age**

	Fever or Malaria	Diarrhea	Accident	Dental problem	Skin problem	Eyes	Ears, nose Or throat	Other
<b>Total</b>	8.8	1.5	0.5	0.7	1.3	1.2	1.7	7.7
<b>Male</b>	8.4	1.5	0.7	0.6	1.4	1.2	1.7	6.8
0-4	12.2	4.5	0.3	0.6	2.4	1.7	3.0	5.4
5-9	9.2	1.1	0.6	0.4	1.5	1.3	1.4	3.7
10-14	7.6	0.8	0.9	0.4	1.1	1.0	1.2	3.6
15-29	5.7	0.7	0.7	0.4	0.9	0.6	0.9	4.7
30-49	8.2	1.3	0.9	1.1	1.2	0.6	1.7	9.9
50-64	10.6	1.5	1.5	0.3	1.8	1.8	2.0	14.5
65+	10.3	1.3	0.9	0.5	2.4	3.6	3.7	23.6
<b>Female</b>	9.2	1.4	0.3	0.8	1.1	1.3	1.7	8.6
0-4	10.2	4.0	0.3	0.3	2.0	1.9	2.1	3.8
5-9	8.6	1.0	0.3	0.3	1.6	1.1	1.8	3.8
10-14	7.6	0.8	0.3	0.5	0.9	0.5	1.3	3.2
15-29	7.9	0.9	0.1	1.0	0.5	0.7	1.0	8.2
30-49	11.3	1.2	0.4	1.2	1.0	0.8	1.9	13.6

**Table II.i : Percentage of sick or injured people over the last 4 weeks by type of illness/injury, sex and age**

	Fever or			Dental	Skin		Ears, nose	
	Malaria	Diarrhea	Accident	problem	problem	Eyes	Or throat	Other
50-64	9.8	1.1	0.3	1.1	1.5	3.7	2.8	18.4
65+	10.6	2.0	1.2	0.9	1.7	4.4	3.5	22.1

Source: Senegal ESAM II

**Table II.j: Difficulties with provision of food in rural areas, by expenditure quintiles (%)**

	1 (poorest)	2	3	4	5 (richest)	Total
Never	21	26	26	29	29	25
Rarely	18	20	15	20	17	18
Sometimes	31	29	32	28	27	30
Often	24	22	22	19	23	22
Always	6	4	4	3	4	4
Total	100	100	100	100	100	100

Source: Senegal ESAM-II

**Table II.k: Nutritional Indicators, by region and rural - urban**

	Stunting (%)	Wasting (%)	Underweight (%)	Participation in nutrition program	Projected growth
<b>Location</b>					
Rural	42.7	10.1	23.6	14.4	30.7
Urban	20.8	7.7	11.7	31.2	57.2
<b>Region</b>					
Dakar	25	7.4	11.2	34.3	59.1
Ziguinchor	0	0	0	0	0
Diourbel	61.4	5.6	24.7	8.6	29.2
Saint-Louis	17.8	6.9	14.5	18	31.8
Tambacounda	29	10.4	24.2	10.1	18
Kaolack	32.1	15.7	28.1	15.1	40.2
Thiès	43.3	8.7	17.9	20.4	50.2
Louga	29.9	8.3	18.3	23.6	38.2
Fatick	31.5	17.2	22.3	17.6	32.1
Kolda	53.7	4.5	21.8	19.5	27.1
<b>Total</b>	34.7	9.2	19.2	20.6	40.5

Source: Senegal ESAM 2001 - expressed in standard deviations from the mean of the reference population.

**Table II.l: Child Malnutrition Indicators, by rural and urban**

Malnutrition	Urban	Rural
% of children under 5 with moderate or severe malnutrition		
Weight for age – 2 SD	13.2	20.5
Height for age – 2 SD	14.5	20.9
Weight for height – 2 SD	6.9	9.3
Diarrhea (%of children under having had diarrhea in last 2 weeks	22.4	29.9
Children with diarrhea in last 2 weeks having received ORS	12.4	3.1

Source: MICS 2000

**Table II.m: Knowledge of HIV Aspects**

	Urban	Rural
% of women 15-49 having heard of HIV-AIDS	70.2	76.3
% knowing that fidelity and condom use prevent transmission	46.8	29
% not able identify any transmission risk	34.7	51.8
<b>Knowledge: % of adolescent women 15-19 having heard of HIV-AIDS</b>	71.8	62.6
% knowing that fidelity, abstinence, and condom use prevent transmission	29.5	19.2
% not able identify any transmission risk	41.7	61.5
% women 15-49 that know HIV-AIDS can be transmitted from mother to unborn child	56.3	41.5
% of women 15-49 with knowledge of a location of testing site	31%	17.1%

Source: MICS 2000

**Table II.n: Percentage of households who consult health services if sick, all ages (%)**

<b>Rural</b>	1	2	3	4	5	Total
Yes	62	61	63	61	67	62
No	38	39	37	39	33	38
ND	0	0	0	0	0	0
Total	100	100	100	100	100	100
<b>Urban</b>	1	2	3	4	5	Total
Yes	66	68	70	75	77	74
Non	34	32	30	25	23	26
ND	0	0	0	0	0	0
Total	100	100	100	100	100	100

Source: Senegal ESAM II

**Table II.o: Food, education and health, as % of total annual household expenditures**

	food		education		health	
	urban	rural	urban	rural	urban	rural
Q1	54.3	58.2	1.1	0.8	1.4	2.0
Q2	53.1	58.8	1.1	0.6	1.6	2.2
Q3	49.5	58.8	1.3	0.6	1.7	2.1
Q4	50.4	57.7	1.3	0.5	1.5	2.3
Q5	45.7	58.6	2.4	0.5	1.7	1.8

Source: Senegal Esam II

**Table II. p : Literacy Rate by Age and Gender (population 15 years and older)**

	Male	Female	Total
<b>Total</b>	52.4	30.3	40.5
15-19	61.6	44.8	52.6
20-29	61.4	43.0	51.7
30-39	55.8	30.5	41.5
40-49	49.6	24.1	35.6
50-59	42.0	10.0	24.6
60+	25.1	3.1	14.4

Source : Senegal ESAM II

**Table II.q: Rural adult literacy level by quintiles (15+ y.o., %)**

	Poor	Q2	Q3	Q4	Rich	Total
Literate	22.8	23.0	23.8	26.0	23.3	23.5
Illiterate	74.3	75.2	74.1	72.4	74.5	74.3
ND	2.9	1.8	2.1	1.7	2.1	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Senegal ESAM-II

**Table II.r: Rural: Reasons for not attending primary, just for those dropped out**

Reason	% of total responses
age 7 to 12 only	
age/finished school	4.7%
school too far	4.9%
too costly	12.9%
work at home	11.8%
no interest/not useful	33.8%
health problems	19.7%
failed exams	9.6%
Marriage	2.6%
Source: ESAM-II	100.0%

There is no such info for the kids who never attended schools

## Chapter III

**Table III.a: Share of Households Contributing to Associations. by quintile and amount**

urban by quintiles	Q1	Q2	Q3	Q4	Q5	total
no	48.36	45.82	43.05	41.26	42.78	42.96
yes	51.64	54.18	56.95	58.74	57.22	57.04
average contributions, annual, CFA (if cont>0)	15133.0	28647.0	29188.0	31752.0	55141.0	39421.0
rural only, by quintiles	Q1	2	3	4	5	total
no	36.83	30.51	29.53	26.81	30.99	31.89
yes	63.17	69.49	70.47	73.19	69.01	68.11
average contributions, annual, CFA (if cont>0)	16,668.0	14,957.0	21,800.0	21,904.0	25,834.0	18,453.0

Source: Senegal ESAM II

**Table III.b: Reasons for migration from the previous place**

	Urban	Rural	Total
Family. Other reasons.	44.9	37.7	41.5
Marriage	16.9	36.0	25.8
Other	7.7	7.2	7.4
Unemployment	7.5	4.1	5.9
Lack of land	2.8	3.8	3.3
Job found	3.9	3.6	3.7
profess reasons	8.6	3.1	6.0
Calamities/Disasters	1.2	1.5	1.3
Conflict/Insecurity	1.2	1.3	1.2
Studies/Training	4.4	1.0	2.8
Health	0.9	0.9	0.9
Total	100.0	100.0	100.0

Source : Senegal ESAM II

**Table III.c: Migration Patterns and Reasons in Groundnut Basin, by poverty level**

Migration Frequencies	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
At least one migration	22.8%	33.0%	35.9%	30.3%	22.8%	24.3%	21.7%
Migration of men	19.9%	27.8%	30.6%	25.1%	20.6%	20.4%	19.0%
Migration of women	6.6%	10.1%	11.0%	9.2%	5.6%	7.9%	6.8%
Reason for Mig. - Male	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
Lack of seeds	19.1%	22.0%	18.9%	25.6%	23.2%	15.8%	18.9%
Lack of equipment	0.8%	0.4%	0.7%	0.0%	1.1%	0.0%	1.5%
Lack of land	1.2%	1.2%	1.1%	1.4%	1.6%	1.5%	0.0%
Employment opportunity	60.0%	59.1%	59.1%	59.5%	60.3%	62.7%	54.3%
Marriage	0.9%	1.0%	0.0%	2.3%	1.2%	1.1%	0.0%
Illness	0.9%	0.6%	1.1%	0.0%	0.0%	1.4%	1.5%
Child Education	4.7%	2.9%	2.7%	3.5%	2.4%	5.9%	5.8%
Other	12.3%	12.9%	16.4%	7.8%	10.2%	11.8%	18.1%
Reason for Mig. - female	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
Lack of seeds	1.1%	2.2%	4.0%	0.0%	0.0%	0.0%	4.1%
Lack of equipment	1.3%	1.1%	0.0%	2.7%	0.0%	2.7%	0.0%
Lack of land	-	-	-	-	-	-	-

<b>Migration Frequencies</b>	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
Employment opportunity	43.0%	33.6%	27.9%	39.4%	39.0%	47.8%	40.6%
Marriage	29.0%	44.4%	47.6%	42.0%	27.9%	21.6%	43.0%
Illness	4.7%	1.0%	0.0%	2.4%	6.3%	5.8%	0.0%
Child Education	4.6%	2.3%	2.3%	2.6%	5.1%	6.2%	0.0%
Other	16.3%	15.4%	18.2%	10.9%	21.8%	15.9%	12.3%
<b>Male Destinations</b>							
	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
Cities	64.8%	72.5%	77.6%	67.7%	72.9%	62.7%	52.9%
Rural Areas	25.2%	16.4%	11.9%	20.6%	20.1%	22.5%	38.9%
Abroad	10.0%	11.2%	10.5%	11.7%	7.0%	14.7%	8.2%
<b>Female Destinations</b>							
	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
Cities	67.0%	58.4%	62.2%	51.9%	64.9%	78.9%	49.4%
Rural Areas	29.5%	36.8%	33.3%	42.2%	24.1%	21.1%	50.6%
Abroad	3.5%	4.8%	4.5%	5.9%	11.0%	0.0%	0.0%

Source: PSIA Groundnut Basin Survey

**Table III.d: Foreign Country Where Household Migrant Resides**

destination	# urban	# rural	# total	% urban	% rural	% total
Benin	463	347	810	1	0	0
Burkina Faso	525	580	1,105	1	1	1
Côte d'Ivoire	3,629	7,587	11,216	4	9	7
Guinée-Bissau	2,196	3,184	5,380	3	4	3
Mali	2,063	1,990	4,054	2	2	2
Niger	106	0	106	0	0	0
Togo	184	277	461	0	0	0
Other African Countries	15,043	35,790	50,833	18	43	30
Europe	48,965	28,750	77,715	58	34	46
USA or Canada	8,472	4,160	12,632	10	5	7
Other	3,196	1,032	4,227	4	1	3
Nsp	151	158	309	0	0	0
ND	107	0	107	0	0	0
Total	85,099	83,854	168,953	100	100	100

Source: Senegal ESAM II

**Table III.e: Transfers to Groundnut Basin Households, by poverty level**

	Transfers by equivalent adult						
	Non-poor	poor	Q1	Q2	Q3	Q4	Q5
% of households receiving transfers	24.8%	30.5%	34.9%	25.7%	24.7%	26.0%	24.5%
Average Annual Income for households per eq adult from these transfers	36,499.1	18,442.7	18,477.8	18,581.3	20,918.0	34,993.2	58,821.6
Average Annual Income per eq adult for those receiving these transfers	100,546.6	68,776.4	69,361.9	65,804.3	74,897.7	86,779.5	159,080.8
% Revenue Transfers per eq adult over total of households	36.3%	26.8%	26.6%	28.2%	27.9%	40.3%	37.0%

Source: PSIA Groundnut Basin Survey

**Table III.f: % of villages identifying most common savings mechanisms used**

Savings Mechanism	Number of responses	% of all villages surveyed
Livestock/small animals	23	72%
Savings Account	13	57%
Tontine	12	38%
Cash	9	28%
Storage of Grain	7	22%
Equipment	4	13%
Land	3	9%
Housing	3	9%
Gold/Jewelry	3	9%
Current accounts	3	9%

Source: PASEC data set, village questionnaire of 32 rural villages

**Table III.g : Access to Formal and Informal Financial Services**

% of households with a deposit in a bank or other formal institution, by asset index						
Rural households	1 (poorest)	2	3	4	5	Total
YES	11.83	14.84	5.91	12.64	16.39	12.3
NO	88.17	85.16	94.09	87.36	83.61	87.7
Total	100	100	100	100	100	100
Urban households	1	2	3	4	5	Total
YES	17.24	16.57	23.43	33.33	34.88	25.06
NO	82.76	83.43	76.57	66.67	65.12	74.94
Total	100	100	100	100	100	100
Deposit in a tontine (informal)?						
Rural households	1	2	3	4	5	Total
YES	56.99	57.46	43.55	25.97	18.38	40.48
NO	43.01	42.54	56.45	74.03	81.62	59.52
Urban households	1	2	3	4	5	Total
YES	41.62	51.46	56	63.37	51.76	52.85
NO	58.38	48.54	44	36.63	48.24	47.15

Source: Bank estimates, PASEC data set

**Table III.h : Frequency of Purpose Cited for Taking a Loan, by number of loans**

Purpose of Loan	Rural	Urban
Agricultural Activity	9%	4%
Agricultural Inputs	4%	1%
Purchase of heavy equipment	1%	1%
Purchase of other equipment	1%	1%
Purchase of Animals	1%	0%
Other Agricultural Reasons	2%	1%
Non-Agricultural Activity	14%	19%
Purchase of raw material and capital mobility	4%	4%
Purchase or improvement of land/building/equipment	2%	5%

Other related costs to the activity	8%	10%
PERSONNEL	78%	77%
Household Consumption	55%	44%
Purchase/ housing upgrade	2%	5%
Scholarly expenses	2%	3%
Health Expenses	5%	3%
Religious Ceremonies, marriages, funerals	10%	13%
Durable consumption of goods	1%	4%
Other	3%	5%
	100%	100%

Source: PASEC data set, Bank estimates

**Table III.i: CNCAS loans in 2003 (in CFA)**

Crop season	Crops	Loans requested	Authorized Loan	Executed	%
Rainfall season	Groundnut, Rice, cotton	11 324 038 370	9 078 254 959	7 080 869 173	84%
Winter off Season	Horticultural Products	1 958 806 161	1 306 280 575	1 250 000 000	15%
Equipment		301 450 617	208 350 150	109 026 840	1%
<b>Total 2002/2003</b>		<b>13 584 295 148</b>	<b>10 592 885 684</b>	<b>8 439 896 013</b>	<b>100%</b>

Source: CNCAS

## Chapter IV

**Table IV.a : FSN Flood Assistance 2004**

Plaits	5 637
Liters of detergents	12 326
Mosquito nets	6 284
Tents	650
Sheets	5 084
Hurricane lamps	2 537
Mattresses	5 624
Covers	5 179
Boxes of soap	26 567
Tons of rice	241
Liters of petroleum	350
Financial Assistance (CFA)	1 175 000

Source: DDI

**Table IVb: CSA Rice Distribution 2004 (tons)**

Destination	Volume in tons
Médina Gounass	40
Sindia	40
Koussanar	5
Kédoudou	40
Kaffrine	40
Religious Ceremonies	5414
<b>Total</b>	<b>5579</b>

Source: DDI

**Table IV.c : Situation des demandes de secours et des satisfaction en 2004**

Target Groups	Assistance Type	Demand Requested	Demand Fulfilled	Rate of fulfillment
Handicapped people	Equipment Provision	647	200	31%
Widows and orphans	Cash Assistance	647	113	17%
Dependant People	Cash Assistance	2093	500	24%
Elderly people	Financing of micro-projects	160	97	61%
<b>TOTAL</b>		<b>3547</b>	<b>910</b>	<b>26%</b>

Source: DAS

**Table IV.d: Financing to Agriculture and Rural Production, 2003 - 2004**  
Public Financial Investments from Private Funds

	Unit	2003		%	2004
		Budgeted	Realized		Budgeted
<b>Total Public Investments</b>		169400	148347	0,8757202	202250
Public Investment in the agricultural sub-sector	MFCFA	16931	10996	0,6494596	18423
<i>In Which Irrigation</i>	MFCFA	4993	5382	1,0779091	5372
Public Investment in livestock sub-sector	MFCFA	1057	492	0,4654683	1636
Public Investment in fishing sub-sector	MFCFA	4968	1892	0,3808374	3238
Public Investments in water sub-sector	MFCFA	4987	4561	0,9145779	4870
Public Investments in other rural sub-sectors (forests)	MFCFA	1685	1476	0,8759644	1340
<b>Public Investment in the rural sector</b>	MFCFA	29628	19417	0,6553598	29507
<i>Public Investment in the rural sector</i>	%	0,1748996	0,1308891		0,1458937
<b>Public Investments : All sources of financing combined</b>	Unit	Budgeted	Realized	%	Budgeted
<b>Total Public Investments</b>		449903	298000	0,662365	468651
Public Investment in the agricultural sub-sector	MFCFA	62199	26624	0,4280455	63426
<i>In Which Irrigation</i>	MFCFA	18263	14558	0,7971308	24991
Public Investment in livestock sub-sector	MFCFA	5659	3770	0,6661954	5663
Public Investment in fishing sub-sector	MFCFA	11218	5278	0,4704938	9238
Public Investments in water sub-sector	MFCFA	18577	10166	0,5472358	19948
Public Investments in other rural sub-sectors (forests)	MFCFA	13955	6554	0,4696525	12368
<b>Public Investment in the rural sector</b>	MFCFA	111608	66950	0,5998674	110643
<i>Public Investment in the rural sector</i>		0,2480713	0,2246644		0,2360883
<b>From Private Funds</b>	Unit	Budgeted	Realized	%	Budgeted
<b>Total Operational Budget</b>	MFCFA	639,1	634,98	0,99	728,72
Operational Budget of the agricultural sub-sector	MFCFA	6,6	6,51	0,9863636	7,847
<i>In Which Irrigation</i>	MFCFA	0,217	0,217	1	0,217
Operational Budget of the livestock sub-sector	MFCFA	1,8	1,77	0,9833333	1,234
Operational Budget of the fishing sub-sector	MFCFA	0,725	0,63	0,8689655	0,851
Operational Budget of the water sub-sector	MFCFA	0,61	0,59	0,9672131	0,63
Operational Budget of the other rural sub-sectors (forests)	MFCFA	3,4	3,3	0,9705882	5,758
<b>Operational Budget of the rural sector</b>	MFCFA	13,135	12,8	0,9744956	16,32
<i>Operational Budget of the rural sector</i>	%	0,0205523	0,0201581		0,0223954

Source : DB/MEF Loi des Finances de 1998 à 2004 et Situation d'exécution du budget de 1998 à 2003 ;  
DCEF/MEF PTIP et Bilan d'exécution projets et programmes de 1998 à 2004

**Table IV.e: Guaranties and Allowances 1997-2003, in million CFA**

Years	Guaranties				Allowances			
	Unpaid	75% unpaid	Guaranties Engagement	gap	Realized credits	Allowance 5,5%	Allowances Engagements	gap
1997/1998	2450	1837	400	-1437	12278	675	300	-375
1998/1999	2573	1929	1925	-4	12426	683	700	17
1999/2000	5135	3851	2100	-1751	13891	764	700	-64
2000/2001	4568	3426	3100	-326	9201	506	900	394
2001/2002	3718	2788	3000	212	11307	622	202,5	-419
2002/2003	3322	2491	500	-1991	8440	464	-	-
Total		16322		-5296		3714		-447

**Table IV.f: Incidence of revenue allowances for the 2001/2002 campaign**

	GIE Bary	GIE Ndelle	GIE Mboltogne	GIE D. Diakhé	GIE K. Mari	GIE Dinguiraye
Products	16 185	14 375	16 890	7 230	3 850	6 665
Cost	4 171	3 477	5 575	2 105	1 310	2 340
<b>Difference</b>	<b>12 014</b>	<b>11 333</b>	<b>11 315</b>	<b>5 125</b>	<b>2 540</b>	<b>4 325</b>
Share of cost financed by producers	834	695	1 115	421	262	468
Share of cost financed by CNCAS	3 337	2 782	4 460	1 684	1 048	1 872
Interest expense (at 7,5% rate)	233	194	311	118	73	131
Interest expense without allowance	403	336	539	203	127	226
Cost without allowance rate	4 341	3 619	5 803	2 190	1 364	2 435
<b>Margin without allowance rate</b>	<b>11 844</b>	<b>10 756</b>	<b>11 087</b>	<b>5 040</b>	<b>2 486</b>	<b>4 230</b>
<b>Variation on margin</b>	<b>+170</b>	<b>+577</b>	<b>+228</b>	<b>+85</b>	<b>+54</b>	<b>+95</b>
<b>%</b>	<b>+1.4%</b>	<b>+5.1%</b>	<b>+2.0%</b>	<b>+1.6%</b>	<b>+2.1%</b>	<b>+2.2%</b>

Period	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/02	Total
Credits							
Loans	12280	12426	13891	9201	11306	8440	67544
Required	12969	13125	14673	9719	11943	8915	71344
Unpaid	2450	2573	5135	4568	3718	3322	21766
Financing rate	83%	82%	57%	53%	63%	63%	70%

UE	1 003
FND	2 486
KFW	1 337
Belgium	413
BAD	1 500
IDA	3 560
IDA	6 153
FNUAP	450
USAID	1 000
Japan	1 000
<b>Total</b>	<b>18 902</b>

Source: DCEF/DDI

**Table IV.i : Evolution of Internal Financing of Health**

	2002	2004
Government Operational Expenditures	483 000	520 724
Public Operational Expenditures Allocated to Health	31 476	38 072
Govnt's Capital Expenditures on Internal Financing	211800	236 000
Public Expenditures of Internal Investments Allocated to Health	7 093	8 106
Total Public Expenditures Allocated to Health	38 569	46 178
Total Public Expenditures on Internal Financing	694 800	756 724
Share of Health in the Gov. Operational Expenditures	6,52%	7,31%
In the Gov Investment Expenditures	3,3%	3,4%
Public Expenditures on Health as a % of GDP	1,11%	1,12%

**Table IV.j: Distribution of Expenses in billions of CFA**

Level:	1997	1998	1999	2000	2001	2002	Period	Average
<b>Operational</b>	25 329 409	30 263 982	41 248 799	46 749 533	57 110 060	70 393 772	271 095 566	77%
<b>Administrative</b>	6 332 352	7 098 959	10 964 871	14 763 010	19 036 689	22 229 612	80 425 493	23%
<b>TOTAL</b>	31 661 761	37 362 941	52 213 670	61 512 543	76 146 754	92 623 384	351 521 059	100%
Level:	1997	1998	1999	2000	2001	2002	Period	Average
<b>Regional</b>	15 197 645	20 330 910	23 742 380	31 110 569	41 880 715	47 237 926	179 500 145	51%
<b>Central</b>	16 464 116	17 032 031	28 471 290	30 401 974	34 266 039	45 385 458	172 020 908	49%
<b>TOTAL</b>	31 661 761	37 362 941	52 213 670	61 512 543	76 146 754	92 623 384	351 521 059	100%

Source: Ministry of Health

**Table IV.k: Net Change in Health Infrastructure and Staff (1998-2002)**

Health districts	# health posts	# rural maternities	# health huts	# doctors	#mid wives	# nurses / agents	# ICP	# comm. personnel
Dakar	+3	0	-4	+8	-1	-22	0	+176
Diourbel (capital)*	+4	0	-5	+2	0	+7	+4	+28
Diourbel (other)	+5	+2	+14	+2	+1	+4	+4	+13
Fatick (capital)	+3	0	0	+1	0	+6	+6	+5
Fatick (other)	+3	+3	+28	+1	+3	+8	0	+39
Kaolack (capital)	+9	+6	+12	+1	+2	+5	+11	+104
Kaolack (other)	+2	+2	+26	+2	-1	+2	+2	+22
Kolda (capital)	-2	0	+3	+1	+1	+3	-2	+7
Kolda (other)	+11	+13	-1	+1	+4	+9	+21	+19
Louga (capital)	+9	+10	+30	+1	+1	+9	+9	+19
Louga (other)	0	-1	+111	+3	0	+8	-2	+67
Matam (all)	+6	+5	+6	+1	-1	+6	+6	+28
Saint Louis (capital)	0	+1	+2	+1	-1	0	0	+10
Saint Louis (other)	+7	-13	+26	+2	0	+9	+7	+29
Tambacounda (capital)	+1	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Tambacounda (other)	+4	+2	+18	+2	+2	+4	-1	+6
Thies (capital)	+10	0	+32	+0	+10	+15	+12	+24
Thies (other)	+8	+15	+38	+5	+1	-4	+26	+96
Total Mostly Urban	+37	+17	+70	+15	+12	+21	+40	+353
Total Mostly Rural	+46	+30	+266	+19	+9	+46	+63	+309

Source : CEFORP. \* Diourbel and Touba districts

**Table IV.l: Evolution of Vaccination Coverage 1996-2000**

	Urban	Rural
BCG 1996	84%	82%
2000	95.5%	83.2%
VPO 3 1996	61%	77.2%
2000	60%	48.7%
DTC3 1996	61%	61%
2000	66.9%	41.2%
Measles 1996	52%	78.8%
2000	51%	52.8%

Source: MICS 2000

**Table IV.m : Strategic Plan Against Malaria 2001-2005, in CFA**

Antimalaria and health care products	4 326 210 000
Reagents, Laboratory Material	115 058 000
Antivecoral products	12 953 850 000
Infrastructures	1 500 000 000
Training of Personnel	2 604 594 430
Surveillance and fight against endemics	63 785 000
Social Mobilisation and IBC	3 309 528 250
Operational Research	690 000 000
Administration/ Management/ Planning	239 030 000
Follow-up Evaluation	455 672 500
<b>TOTALS</b>	<b>26 172 776 380 FCFA</b>

Source: PLNP

**Table IV.n: Financing of National Strategic Plan Against HIV-AIDS 2002-2006**

Partners	Executed Budget 2002-2005	Planned 2005	Planned 2006
Govt of Senegal	4100000000	2215000000	2715000000
French Cooperation	1503453444	497215406	
World Food Program	25500000	63750000	63750000
USAID	5449361730	2783580000	1947607890
World Bank	5932972000	6118242027	6118242027
Global Fund	760469000	1065811000	1065811000
ADB		35000000	42000000
UNICEF		25000000	
JICA		165408200	191447850
KfW		983935500	655957000
UNFPA	235340489	126805253	80746770
PNUD		102000000	51000000
ONUSIDA	66300000	30600000	30600000
OMS	76500000	25500000	25500000
Canada	665640000	75465000	
European Union	264612169	90000000	
Total	19080148832	14403312386	12987662537
Partners	Executed Budget 2002-2005	Planned 2005	Planned 2006
Govt of Senegal	4100000000	2215000000	2715000000
French Cooperation	1503453444	497215406	
World Food Program	25500000	63750000	63750000
USAID	5449361730	2783580000	1947607890
World Bank	5932972000	6118242027	6118242027
Global Fund	760469000	1065811000	1065811000
ADB		35000000	42000000
UNICEF		25000000	
JICA		165408200	191447850
KfW		983935500	655957000
UNFPA	235340489	126805253	80746770
PNUD		102000000	51000000
ONUSIDA	66300000	30600000	30600000
OMS	76500000	25500000	25500000
Canada	665640000	75465000	
European Union	264612169	90000000	
Total	19080148832	14403312386	12987662537

(As reported to CNLS)

**Table IV.o: Distribution of CNLS IDA Financing 2003-2004**

	Pubic Sector	Civil Society	Total Per Capita (CFA)
Central	1,287,619,313	1,097,081,565	
Regional	1,239,504,082	2,626,003,249	
Total	2,527,123,395	3,723,084,814	627
Of which:			
Saint-louis	124,420,700	158,562,410	411
Matam	108,874,600	212,048,540	759
Louga	108,367,720	141,595,933	369
Diourbel	114,011,415	220,273,387	318
Kaolack	125,516,000	151,403,748	260
Tamba	132,632,000	172,101,534	503
Fatick	81,960,150	182,782,315	432
Ziguinchor	110,611,600	301,175,251	940
Thiès	90,171,025	412,889,861	390
Kolda	83,193,377	241,131,590	388
Dakar	147,421,095	432,038,680	256

Source: CNLS

**Table IV.p: Distribution of CNLS Interventions by Type and Region, 2003-2004**

Region	Prevention sexual transmission	Prev. Blood Trans.	Mother -Child Trans.	Testin g	Care for STDs	Treat- ment	Psycho- social support	Care Orphan s	Total
Dakar Urban	821	5	6	35	8	7	48	7	937
Dakar Rural	7	0	0	0	0	0	0	0	7
Diourbel Urban	487	3	0	3	4	2	4	1	504
Diourbel Rural	118	0	0	0	0	0	0	0	118
Fatick Urban	414	1	3	11	0	5	1	0	435
Fatick Rural	175	0	1	1	0	0	0	0	177
Kaolack Urban	257	10	4	19	1	11	13	4	319
Kaolack Rural	93	0	0	0	0	0	1	1	95
Kolda Urban	392	10	9	12	2	2	5	0	432
Kolda Rural	190	0	0	1	0	0	0	0	191
Louga Urban	295	2	3	22	2	4	18	6	352
Louga Rural	196	5	1	1	0	0	17	3	223
Matam Urban	383	18	23	34	7	1	5	2	473
Matam Rural	180	17	15	11	0	0	0	0	223
Saint Louis Urban	464	16	15	15	1	3	4	2	520
Saint Louis Rural	60	6	0	0	0	0	0	0	66
Tamb. Urban	368	8	7	7	2	5	10	2	409
Tamb. Rural	136	0	0	0	0	0	0	0	136
Thies Urban	589	0	8	85	1	5	19	5	712
Thies Rural	153	0	6	6	0	0	1	2	168
Ziguinchor Urban	475	3	7	25	2	5	5	0	522
Ziguinchor Rural	32	0	0	0	0	0	0	0	32
<b>Total Urban</b>	<b>4945</b>	<b>76</b>	<b>85</b>	<b>268</b>	<b>30</b>	<b>50</b>	<b>132</b>	<b>29</b>	<b>5615</b>
<b>Total Rural</b>	<b>1340</b>	<b>28</b>	<b>23</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>6</b>	<b>1436</b>

Source: CNLS

**Table IV.p.: Education Financing by Source, in millions FCFA**

	2003	2004	% en 2004
Government	160 000	199 766	78%
Local Communities	3713	3899	2%
Households	35838	37630	15%
External Financing Partners	9 834	15 438	6%
Total	209 385	256 733	100%
Nominal GDP	3881100	4113966	
Total Expenses for Education as a % of GDP	5,4%	6,2%	

**Table.IV.q : Inter-sectoral Allocation of Education Expenses**

	2003	2004
Operational Expenditures of the Government	483 000	520 724
Public Operational Expenditures allocated to Education	149 100	182 498
Capital Expenditures of Govt over internal financing	211800	236 000
Public Investment Expenditures allocated to Education	10 900	17 265
Total Public Expenditures allocated to Education	160 000	199 763
Total Public Expenditures of Govt over internal financing	694 800	756 724
Education as a % of Operational Expenditures of the Government	30,9%	35,0%
Of Which Investment Expenditures of Govt	5%	7%
Public Expenditures on Education as a % of GDP	4,1%	4,9%

**Table IV.r : Primary Classroom Construction 2000-2004, by Region and Program**

Sum of S. de Cl. Réalisées											
Project	Dakar Region	Diourbel	Fatick	Kaolack	Kolda	Louga	St Louis	Tamba-counda	Thies	Ziguin-chor	Grand Total
AFDS Total			23	11	34	53					121
BADIII Total		145		125		120					390
BCI Total	518	495	560	556	148	356	383	453	591	169	4229
BID Total	65				120				170	145	500
JICA IV Total	48		107	55		58			55		323
OPEP III Total					30		209				239
PAC Total	163		9	0			8	7	31		218
PAOES Total					180		165				345
PEQT Total			465		269		301	565			1600
PNIR Total		7	6	17	4	10	13	4	5	8	74
Grand Total	794	647	1170	764	785	597	1079	1029	852	322	8039

Source : MOE, Bank estimates

**Table IV.s: Movement of personnel of Elementary grade in 2004**

Region	Entry	Exit	Difference
Dakar	259	29	230
Diourbel	31	78	-47
Fatick	40	52	-12
Kaolack	64	86	-22
Kolda	20	70	-50
Louga	27	93	-66
Matam	10	29	-19
St-Louis	45	26	19
Tamba	15	87	-72
Thies	127	33	94
Ziguinchor	21	59	-38

Source: MOE, Bank estimates

**Table IV.t: Availability of Scholar Handbooks (urban/rural)**

	<i>Total</i>	<i>Others</i>	<i>Calcul</i>	<i>Geogr</i>	<i>Hist</i>	<i>Readings</i>	<i>Scien.</i>
Handbooks in rural areas	1 229 921	16 311	315 319	141 368	149 171	469 908	137844
Manpower in rural areas	689 727						
Handbooks by student in rural areas	1,78	0,02	0,46	0,20	0,22	0,68	0,20
Handbooks in urban areas	1 303 176	39 125	350 810	149 094	140 256	474 608	406790
Manpower in urban areas	538 609						
Handbooks by student in urban areas	2,42	0,07	0,65	0,28	0,26	0,88	0,76

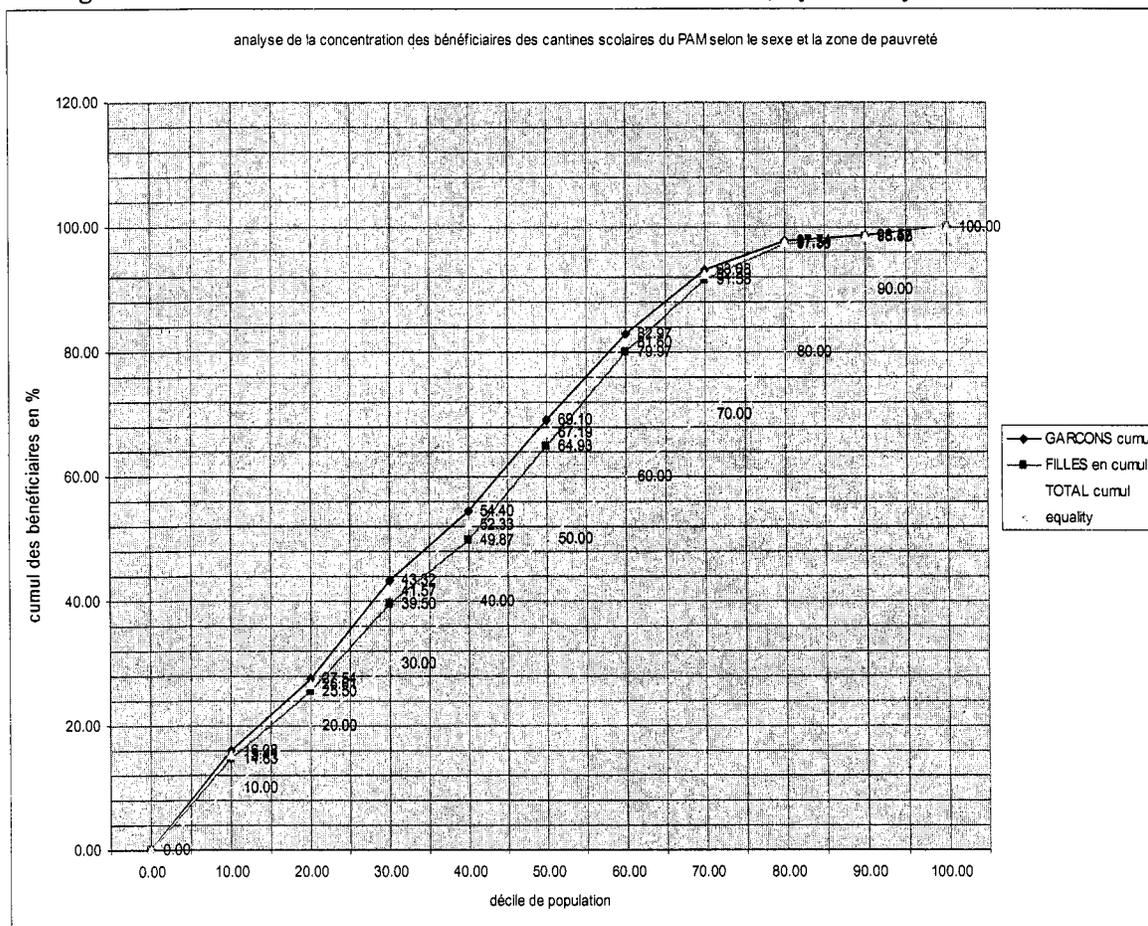
Source: MOE

**Table IV.u: School Cafeterias in Rural Areas**

IA	Number of Schools	Schools with Cafeteria	%
Dakar	36	0	0,0%
Diourbel	296	28	9,5%
Fatick	456	188	41,2%
Kaolack	503	272	54,1%
Kolda	683	148	21,7%
Louga	555	15	2,7%
Matam	180	3	1,7%
Saint Louis	366	145	39,6%
Tambacounda	560	490	87,5%
THIES	481	61	12,7%
Ziguinchor	261	139	53,3%
Total	4377	1489	34,0%

Source: MOE

**Figure IV.a: Concentration Curve of WFP School Lunches, by Poverty Level of CR**



**Table IV.v: Summary of AGETIP Infrastructure Realizations 2000-2004**

<b>Economic Infrastructure</b>	<b>Km</b>	
Roads – (1) paved, asphalt (2) gravel	Km	(1) 87 (2) 62
Transport terminals	Unit	31
Markets	Unit	62
<b>Social Infrastructure</b>		
Classrooms	Unit	2100
Health centers	Unit	23
Health posts	Unit	157
Hospitals	Unit	7
Cases de Tout Petits	Unit	23
Preparation of housing lots	Unit	220
<b>Administrative and Socio-Cultural</b>		
Ministry headquarters	Unit	2
Rural town halls	Unit	100
Urban town halls	Unit	95
Community centers	Unit	70
Culverts, bridges	Unit	47
Canals	Km	150
Drains, culverts (70% rural)	Km	207
Lighting	Km	43

Source: AGETIP Cahier des Realizations 2000-2004

**Table IV.w : Selected Multi-Sectoral Local Development Projects in Rural Areas**

Program	Institution	- Total Budget (\$US millions)	Zones
National Rural Infrastructure Program (PNIR)	Min. Agric.	- \$48.9 million (IDA, FIDA, AFD, Gov., beneficiaries)	All regions except Dakar
Groundnut Basin Programme (Programme du Basin Arachidier PSA – ex-PROCER)		KfW	Kaolack and Fatick
Program to Support Decentralization (Programme Appui Decent – PADMIR)	Ministry Int. and Local Govt.	- \$7.5 million (FENU, PNUD)	38 CR in Louga and Kaolack
Local Development Fund Fonds Développement Local FDL)	Minister Chargé of Planning	- \$4.0 million (FENU/PNUD)	Tambacounda and Kedougou
Program to Support Local Development Initiatives (Programme Soutien Initiatives Devel. Local – PSIDEL)	Min. Finance Ministry Int. and Local Govt.	- \$10.5 million (EU)	59 CR Kolda, Matam, Ziguinchor
Project to Fight Against Poverty (Projet de Lutte Contre la Pauvreté – PLCP)	MFFDS	- \$21.5 million (BAD, FND)	Tambacounda, Thies, Kolda, Diorbél, Dakar
Social Development Fund Agency (Agence de Fond de Développement Social – AFDS)	MFFDS	- \$30 million (IDA, Government, beneficiaries)	Louga, Fatick, Kolda, Kaolack, Dakar – poorest CR
PAREP	MFSSN	- \$4.5 million (PNUD)	

**Table IV.x : Per Capita Expenditures by Rural Poverty Zones of Selected Programs**

(CFA par capita)					
CR Index	PNIR	AFDS	PSAOP	PBA( PROCER)	GLOBAL
0	6,051	12,524	206	0	18,781
50	2,374	3,431	57	846	6,708
100	2,077	6,718	0	1,747	10,542
150	3,183	1,904	73	1,153	6,313
200	2,453	138	128	359	3,078
250	1,361	0	65	799	2,225
300	768	48	87	2,362	3,265
350	408	0	24	1,967	2,399
400	687	0	32	1,374	2,093
450	293	0	16	374	683
500	0	391	55	304	750

Source : Administrative information, Bank Estimates

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