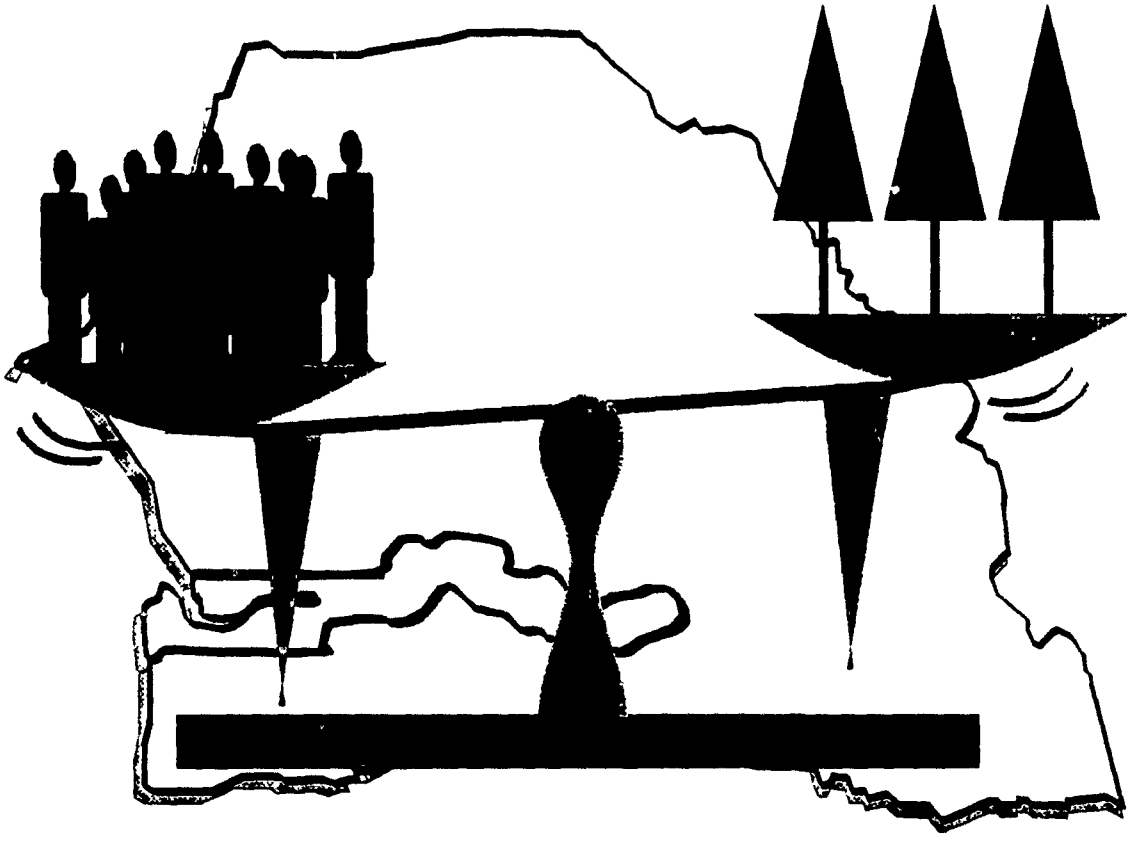
PA-ABJ-479

# Country Program Strategic Plan

for

# Senegal

1992 to 1997



## Population Growth & Natural Resources

Reaching a Balance

February 1991

# EXECUTIVE SUMMARY

Rapid population growth and a deteriorating natural resource base threaten the accelerated economic growth that is essential to the maintenance of Senegal's traditionally open, democratic, and stable society. At the same time, Senegal's social, political, and administrative stability is a key advantage for its economy. USAID/Senegal has concluded that accelerated growth is a central issue and that population growth and environmental degradation are long-term development problems that must be addressed in Senegal now.

Between 1960 and 1985, per capita income in Senegal remained virtually unchanged as population growth offset economic growth that averaged just 2.4 per cent per year. Since 1985, improved weather, financial stabilization, and limited structural adjustment have improved Senegal's growth rate, but the population growth rate has accelerated as well. By 1989, Senegal ranked 112th out of 130 countries on the UNDP's index of human development based on considerations of per capita income, literacy, and life expectancy. Unemployment in urban areas stood at some 20 per cent. Moreover, it appears that the urban sector (formal and informal) can absorb only 30 per cent of the 100,000 new jobs required each year to employ Senegal's rapidly growing labor force. The remaining 70,000 jobs per year will have to be found in agriculture or unemployment will have to increase.

Senegal's agricultural sector is itself in serious trouble. Rapid population growth and a fragile natural resource base have combined to constrain the growth of the primary sector in general, and crop production in particular. Since independence, Senegal's total area in crop production has remained unchanged as new lands brought into production have been offset by land lost to declining rainfall, erosion, and declining soil fertility. Overall in Senegal, increases in yields arising from the increased quantity and quality of the labor force, from improved seeds, from increased animal traction and from other technologies have not been winning the battle to offset the decline in the physical quality of the soil. For the most part, Senegal's technology transfer mechanisms need significant strengthening, agricultural credit mechanisms must still be developed, and markets and pricing need additional liberalization.

Reasons for Senegal's continued high rate of population growth are equally fundamental. Senegal remains a conservative, polygamous, Islamic, and ethnically diverse society. A high value is placed upon children, but infant mortality remains high. While

most urban women know of one modern method of family planning only 58 per cent of rural women do. Approval of family planning is low: 60 per cent among urban women, but only 33 per cent among rural women. The availability of family planning services is constrained in part by the limited quantity and quality of public health services and by underutilization of the capabilities of the private sector. Only 40 per cent of the population has access to health care, and coverage has declined as population has grown and government budgets have tightened.

In order to lay the foundation for development in the 21st century, Senegal must begin now to reach a balance between its resources and its population. This is the context in which the USAID/Senegal strategy was developed. The overarching goal of the U.S. assistance program to Senegal is to improve the quality of life of the Senegalese people through a process of long-term development that is equitable, participatory, self-reliant, and environmentally sustainable. At an early stage of its strategy development process, USAID/Senegal concluded that a strategy of increasing private sector incomes would be preferable to alternative strategies for improving the quality of Senegalese life. Moreover, since the poorest of the Senegalese people are also those most deeply connected with the natural resource base, USAID/Senegal has adopted a strategic goal of increasing private sector incomes derived from sustainable exploitation of natural resources. Given the complex interactions among population growth, degradation of the natural resource base, and income growth, emphasis is placed on increasing income per capita in the long run. Achievement of this goal is structured around four development objectives: (1) decreased family size; (2) increased crop productivity in zones of reliable rainfall; (3) increased value of tree production; and (4) increased liberalization of markets.

**Decreased Family Size.** The USAID/Senegal strategy to achieve a decrease in family size addresses both demand and supply aspects of family planning through both public and private sector mechanisms, with significant differences in emphasis and timing between programs designed to benefit urban and rural clientele. USAID/Senegal will assist the government to decrease the fertility rate from 6.6 children in 1986 to 6.0 children by 1996. Because of urban/rural dichotomies in income levels, employment opportunities, literacy rates, breastfeeding practices, and fertility characteristics, the primary strategic focus in urban areas will be on service delivery, and the primary focus in rural areas will be on increasing family planning awareness and approval.

**Increased Crop Productivity in Zones of Reliable Rainfall.** The USAID/Senegal strategy to increase crop productivity relies on exploiting agricultural potential in Senegal's southern half where reliable rainfall totalling 400 mm per year is available in four years out

of five. Through a combined program to enhance soil productivity and increase the use of adapted technology, USAID/Senegal will assist the government to increase production of cereals in such zones from 1,000,000 tons in 1989-90 to 1,300,000 tons in 1996-97. Productivity increases would be measured on an estimated 200,000 hectares of land, with some 45,000 rural households adopting technologies to improve soil fertility, and an additional 45,000 families adopting improved agronomic practices or using improved inputs.

**Increased Value of Tree Production.** Through a combined program to plant more trees and to conserve existing trees, USAID/Senegal will assist the government to increase the value of tree production by some $2 million annually by 1997. Some 3,000,000 trees will be planted and survive and some 200,000 hectares of land will be protected and managed to permit natural regeneration of trees. This implies an increase in incomes for approximately 50,000 rural households.

**Increased Liberalization of the Market.** USAID/Senegal's strategy is to encourage further liberalization of the market for natural resource-based production. This recognizes the fact that increasing incomes for producers will require not only increased production, but also increased demand, and better access to markets. Through a process of decreased government regulation and increased private activity, USAID/Senegal will assist the government to increase the value of crop production marketed by the private sector from 46 per cent of the total in 1989/90 to 56 per cent in 1996/97, principally through privatization of the marketing of domestic rice.

**Resource Levels.** U. S. development assistance to Senegal has averaged $46 million per year during the past 10 years. The projected level for FY 1992 is only $36 million. Assuming performance indicators are on track, funding levels are projected to increase to $40 million by FY 1993, and by an additional $5 million per year thereafter reaching $60 million in FY 1997. A more concentrated focus, however, will permit a reduction in U.S. direct hire staff from 22 at the beginning of FY 1991 to 18 in FY 1993, with a further reduction to 16 by the end of the CPSP period in FY 1997.

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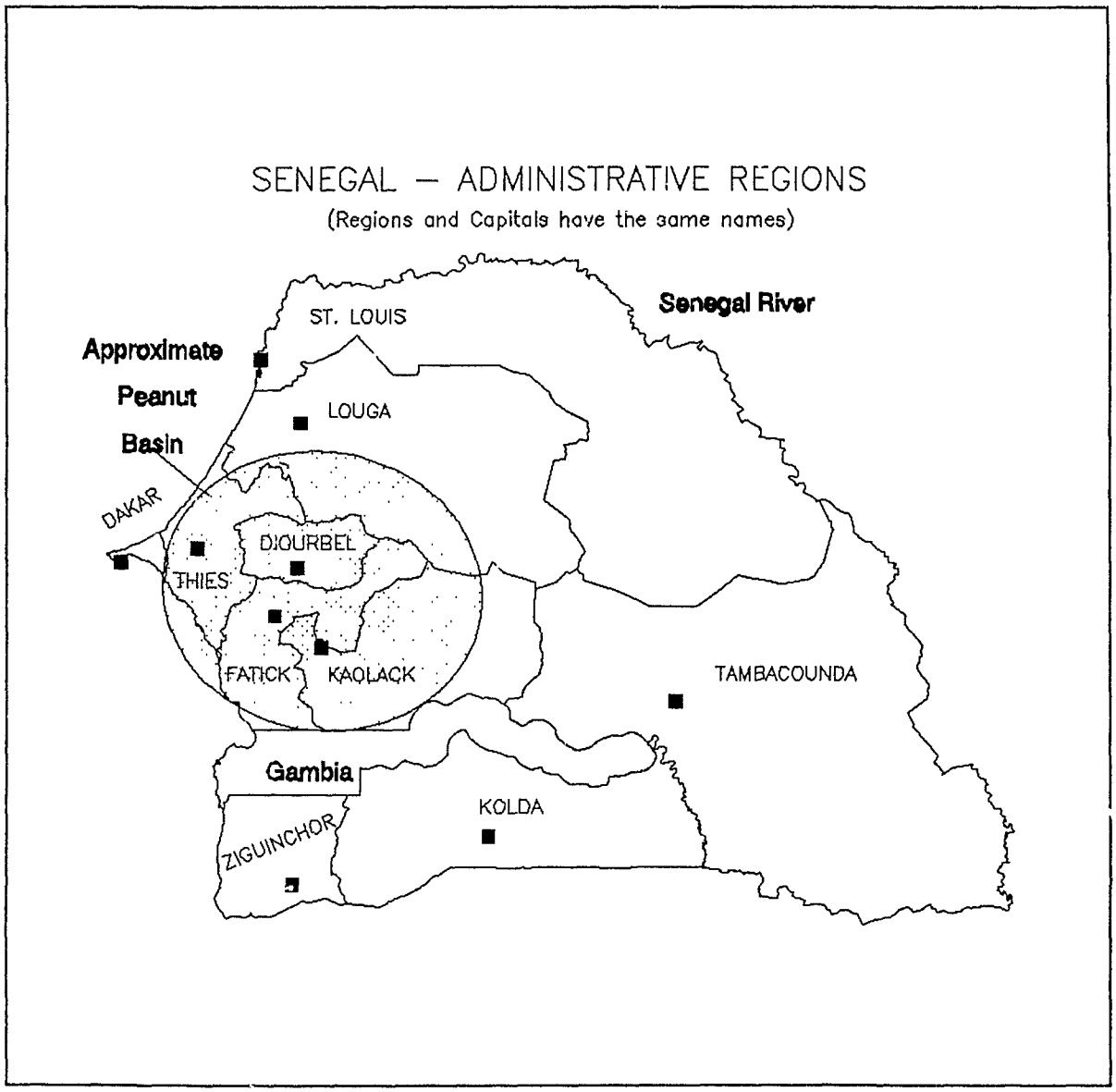
| | |
|---|---|
| **A.I.D.** | Agency for International Development |
| **AIDS** | Acquired Immunodeficiency Syndrome |
| **AEPRP** | Africa Economic Policy Reform Program |
| **CFAF** | Communauté Financière de l'Afrique (Franc) (Local currency of the member states of the West African Monetary Union) |
| **CNP** | Conseil National du Patronat (National Employers Association) |
| **CNTS** | Confédération Nationale des Travailleurs du Sénégal (Government-sponsored labor federation) |
| **CONGAD** | Conseil des Organisations non-gouvernementales d'Appui au Developpement (National coordinating body for non-government organizations) |
| **CPSP** | Caisse de Péréquation et de Stabilisation des Prix (Commodity price stabilization board) |
| **CPSP** | Country Program Strategic Plan |
| **CSS** | Compagnie Sucrière Sénégalaise (French-owned sugar monopoly) |
| **DFA** | Development Fund for Africa |
| **EC** | European Community |
| **ESF** | Economic Support Fund |
| **FSN** | Foreign Service National employee |
| **FY** | Fiscal Year |
| **GDP** | Gross Domestic Product |
| **GIE** | Groupement d'Intérêt Economique |
| **GPF** | Groupements pour la Promotion Féminine (Groups for the promotion of women) |
| **GRAND** | Gender Resource Awareness in National Development (Project) |
| **HIV** | Human Immunodeficiency Virus |
| **IFPRI** | International Food Policy Research Institute |
| **IMF** | International Monetary Fund |
| **ISRA** | Institut Sénégalais de Recherches Agricoles (Government agricultural research institute) |

| | |
|---|---|
| **MCH** | Maternal and Child Health |
| **ONG** | Non-Governmental Organization |
| **ONCAD** | Office National de Coopération et d'Assistance au Développement (Government marketing and crop credit organization) |
| **PASA** | Programme d'Ajustement Structurel pour le Secteur Agricole (Agricultural Sector Structural Adjustment Program) |
| **PL 480** | Public Law 480 |
| **PNVA** | Programme National de Vulgarisation Agricole (of the World Bank) (National Program of Agricultural Extension) |
| **PVO** | Private Voluntary Organization |
| **QR** | Quantitative Restrictions (on imports) |
| **RDA** | Regional Development Agency |
| **SAED** | Société d'Aménagement et d'Exploitation des Terres du Delta (Government regional development agency for the Senegal River valley) |
| **SMIG** | Salaire Minimum Inter-professionnel Garanti (Minimum wage) |
| **SONACOS** | Société Nationale de Commercialisation des Oléagineux du Sénégal (Government monopoly for marketing peanuts) |
| **SPIDS** | Syndicat des Professionnels des Industries du Sénégal (French employers association) |
| **SSA** | Sub-Saharan Africa |
| **TCN** | Third-Country National employee |
| **UNDP** | United Nations Development Program |
| **UNFPA** | United Nations Fund for Population Activities |
| **USAID** | U.S. Agency for International Development |
| **USGS** | United States Geological Survey |
| **WAMU** | West-African Monetary Union |
| **WID** | Women in Development |

MAP 1


SENEGAL – ADMINISTRATIVE REGIONS
(Regions and Capitals have the same names)
Senegal River
ST. LOUIS
Approximate
Peanut
Basin
LOUGA
DAKAR
DIOURBEL
THIES
FATICK
KAOLACK
TAMBACOUNDA
Gambia
KOLDA
ZIGUINCHOR

# I. POLITICAL AND ECONOMIC ENVIRONMENT

## A. Introduction

Rapid population growth and a deteriorating natural resource base threaten the accelerated economic growth that is essential to the maintenance of Senegal's traditionally open, democratic, and stable society. At the same time, Senegal's social, political, and administrative stability is a key advantage to its economy. USAID has concluded that accelerated growth is a central issue, and that population growth and environmental degradation are long-term development problems that must be addressed in Senegal now.

Between 1960 and 1985, per capita income in Senegal remained virtually unchanged as population growth offset economic growth that averaged just 2.4 percent per year. In the intervening twenty-five years, the gap between the static Senegalese reality and the "revolution of rising expectations" resulting from Senegal's extensive contacts with the West has been only partially bridged through traditional religious, village, and family distribution mechanisms, and through the mechanisms of political coalition building. These mechanisms have ameliorated, but have not eliminated, the substantial urban/rural dichotomies that exist in Senegal with regard to income levels, access to education, and access to other social services, including health and family planning. Moreover, the domination of economic life by public control mechanisms, and the existence of substantial "contrived rents" have heightened the competition for political power, while the frustrations of the opposition parties at having been so long out of office have continued to mount.

Protection of the delicate nexus between stability and growth has been at the heart of a process of financial stabilization and structural adjustment undertaken in recent years with substantial support from the International Monetary Fund, the World Bank, France, the U.S., and other donors. Beginning in earnest in 1983, an excess of demand in the economy as a whole was substantially reduced by curtailing the share of government in overall GDP, by reducing the government deficit, by limiting the growth of the money supply, by raising real interest rates, and by allowing real wages in the formal sector to fall. Implementation of the government's New Agricultural Policy (1984), Cereals Plan (1986), and New Industrial Policy (1986) is underway, but impacts on the structure of the economy are only beginning to be felt.

At the macroeconomic level, positive per capita income growth was restored during the period FY 1986-90 reflecting the beneficial effects of improved financial management, limited structural adjustment, and improved weather. Economic growth which was negative in FY 1984 and FY 1985 averaged 3.6 percent during the subsequent five fiscal (and crop) years, or approximately 0.9 percent per capita. This five-year period includes one year of poor rainfall and reduced crop production (1989) when growth was reduced to 0.6 percent or minus 2.1 percent per capita.

Structural adjustment to date has not moved Senegal onto a significantly higher growth path, but it appears that prudent financial management and limited implementation of structural adjustment measures could result in an average growth rate in the medium-term of some four percent per year, i.e. just over one percent per capita. Senegal's population growth rate has now increased to 2.7 percent per year, and its potential labor force is growing at some three percent. With an employment elasticity estimated at 0.6, Senegal would require a growth rate of GDP of some five percent per year to prevent unemployment from growing further.

To accelerate its growth rate, Senegal has potential for increasing its relatively low savings and investment rates, and for increasing the efficiency of investment (in the broadest sense) through additional structural adjustment measures. Beyond such measures, Senegal must begin to address the basic long-term issues of population growth and environmental degradation that threaten to reduce the precariously thin margin of positive per capita growth that it has won through its stabilization and structural adjustment efforts to date.

## B. Economic Geography: The Physical and Human Resources Base

Senegal is a small, semi-arid country occupying 197,000 square kilometers (19.7 million hectares) on the western-most portion of sub-Saharan Africa's Atlantic coast. It is bounded on the north by Mauritania, on the east by Mali, and on the south by Guinea and Guinea-Bissau. It is nearly bisected by the independent Republic of the Gambia, which extends about 200 miles inland along both banks of the Gambia River and cuts the southern region of the Casamance off from the rest of the country.

**Physical Resources**. Senegal has a diversified natural resource base of uneven quality including an important geographic location, a fine port at Dakar, a warm sunny

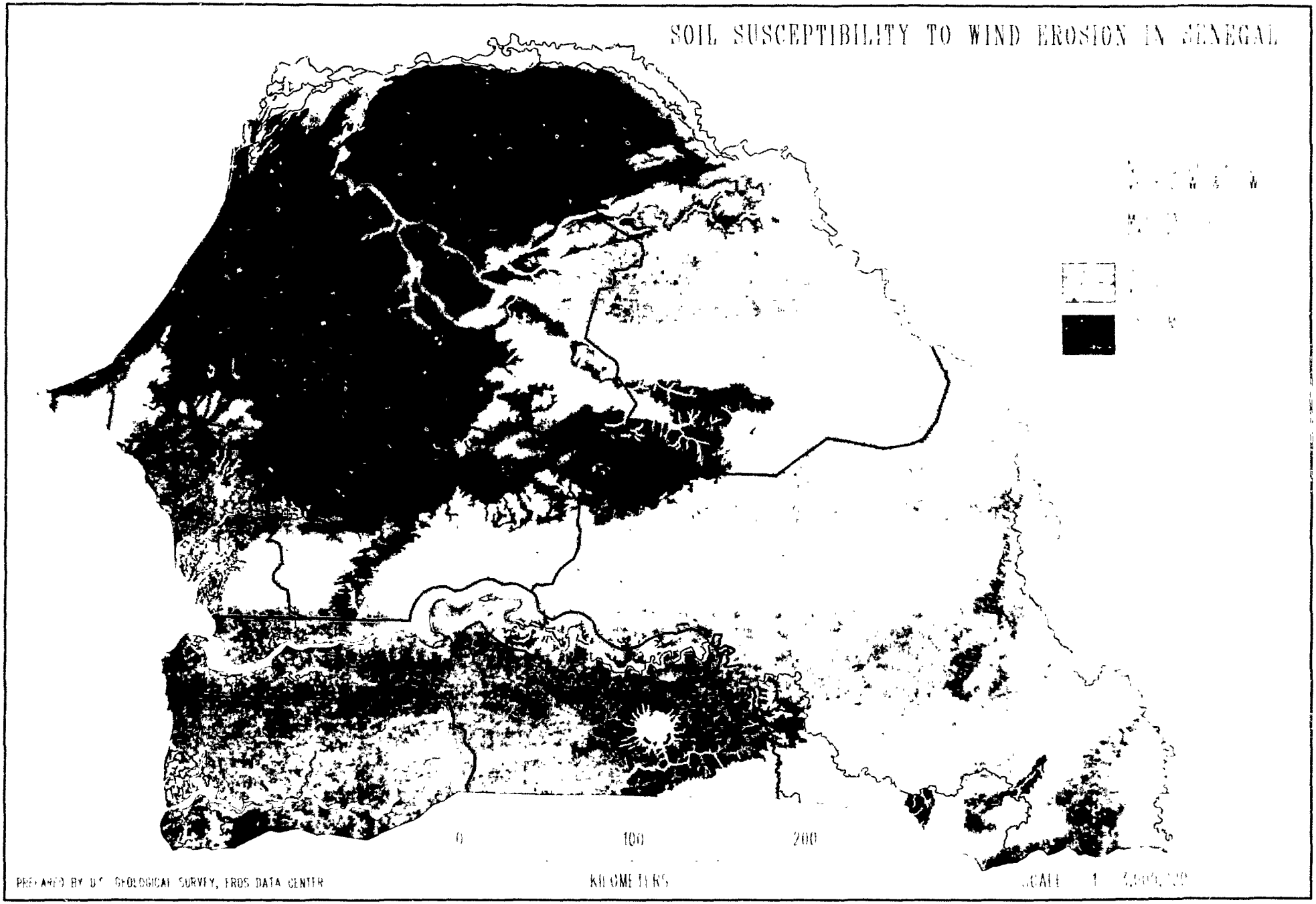
climate with extensive beaches and other tourist potential, phosphate mines, and a potentially large scale titanium mining and processing operation. It also has one of the best marine fisheries in Africa, substantial riverine fisheries, small-scale irrigation potential in the Casamance, and large-scale irrigation and hydroelectric potential along the Senegal River.

Qualifying the above, it may be noted that Senegal's port and tourist potentials are underutilized; its major phosphate deposits are tainted with cadmium and are becoming more expensive to operate; its marine fisheries are threatened by overfishing; and some of its riverine fisheries are incompatible with proposed irrigation plans. Senegal's substantial hydroelectric and irrigation potentials along the Senegal River have proven very costly to develop, and are far removed from important centers of urban or rural population.

Other than its titanium potential, and an unexploited, somewhat inaccessible iron ore deposit, Senegal has no significant mineral or energy resources upon which to base industrial development. Fuelwood and charcoal furnish about 63 percent of Senegal's energy needs. High-cost, imported petroleum products supply the bulk of the remainder. Senegal has already surpassed the point of sustainable yield with regard to forest products, and an overall reduction in available forest land of some 18 percent is expected by the year 2000 unless active measures are taken.

Of Senegal's total surface area of 19.7 million hectares, only 3.8 million hectares (19 percent) are suitable for agriculture, and only 300,000 hectares (1.5 percent) are suitable for irrigation. Actual irrigated area does not exceed 23,000 hectares (0.1 percent). Some 81 percent of Senegal's surface area is classified as grasslands, scrublands, forests, and national parks, or is reserved for other uses.

On the basis of soils classification and topography, Senegal contains no really "high" quality agricultural land, and much of its "good" quality agricultural land is susceptible to erosion, particularly wind erosion. (See Map 2). Soil quality, as measured by organic matter and by ability to deliver nutrients, is also degraded by traditional cropping systems used in Senegal. In the Peanut Basin continuous cropping (which includes removal of all crop residue) has resulted in an estimated decline in soil productivity of between three and five percent per year. In the Casamance the soil has been "mined" by clearing more and more land, which means more and more erosion, less efficient use of available water, and increasing land/population/production crisis.


SOIL SUSCEPTIBILITY TO WIND EROSION IN SENEGAL
0
100
200
KILOMETERS
PREPARED BY U.S. GEOLOGICAL SURVEY, EROS DATA CENTER

Senegal's agricultural potential is further constrained by substantial variations in annual rainfall (on the order of 20-30 percent per year), and by a pronounced secular trend toward reduced rainfall overall. Within Senegal, average rainfall levels increase, and the reliability of rainfall improves, as one travels from north to south. Throughout most of Senegal, the substantial variability in rainfall has important implications for the development of risk-avoiding and risk-sharing behavior including decisions regarding the appropriate mix of food and cash crops, and the desirable level of social cooperation and cohesion in production and consumption activities. Improved conservation, and more effective exploitation of the limited agricultural resource base, remain the most important elements in improving the lives of the Senegalese people, particularly those who live in rural areas.

**Population**. Senegal's human resources include a 1988 population of 6.9 million people of which 61 percent live in rural areas, and 39 percent live in urban areas (basically, but not exclusively, defined as cities and towns with over 10,000 inhabitants). Females constitute 51 percent of the total population, and 52 percent of the population in rural areas. Between 1976 and 1988, the nation's population grew at 2.7 percent per year (2.1 percent for the rural population; and 3.8 percent for the urban population). By the year 2000 the urban population will account for 44 percent of the total.

Senegal's population is unevenly distributed, with three-quarters of the population living in the western quarter of the country which includes both Dakar and Thies (an important secondary town). This concentration is continuing to increase owing to internal migration. In the southern half of the country three of Senegal's ten Departments (Ziguinchor, Kolda, and Tambacounda) show population increases in excess of the national average. Concentration of population accounts for one of Senegal's major constraints: a major portion of the country's rural population is separated from exploitable land and water resources. This helps to explain why, in the aggregate, the area planted to major crops has remained relatively stable during the 30 years since independence.

**Labor Force**. The 1988 Census records an active labor force of some 2.4 million persons, of whom some 1.5 million (66 percent) live in rural areas. Some 61 percent of the total active labor force (urban and rural) describe themselves as working in agriculture. While the Census data with respect to women has definitional problems, it suggests that some 26 percent of the active labor force are women, of whom 63 percent list agriculture as a profession. Senegal's potential labor force (defined as 85 percent of the population between the ages of 15 and 59) is calculated at 2.8 million people in 1988, substantially larger than the active population suggested by the 1988 Census.

Growing at some three percent per year, Senegal's potential labor force totaled some three million persons in 1990, and will total some four million persons by the year 2000. Between 1990 and the year 2000, the Senegalese economy must on average create 100,000 new jobs each year. The Senegalese Labor Force and Employment Survey estimates that, under optimistic assumptions, the informal sector could provide some 25,000 of these jobs per year, the formal sector some 2,500 per year, and other sources some 2,500. The remaining 70,000 jobs per year would have to be found in agriculture or unemployment would have to increase.

With open employment in urban areas already estimated at some 20 percent, and with the limited job-creating potentials suggested above, the Senegal Labor Force and Employment Survey concludes that "the engine of growth of the economy and employment creation will require a significant contribution from an agricultural-led development strategy". The Survey concludes elsewhere that "Senegal is one of the low-to-middle income countries that has more to gain than most from redressing the balance in employment and income in favor of agriculture, over industry and services, and promoting development in regions outside Dakar and the Peanut Basin. Small-scale agriculture holds the potential for the largest relative productivity gains, employment demand and spread effects through the economy."

**Physical Quality of Life**. Despite the lack of measured increases in per capita income during most of the post-independence period, Senegal has been successful in achieving significant improvements in the physical quality of life and in the quality of the labor force. In the twenty-year period 1968-88, life expectancy in Senegal has increased from 42 years to 48 years (46 for men; 50 for women); infant mortality has declined from 167 per 100,000 of population to 128; the crude death rate has dropped from 21 per thousand to 16; and the crude birth rate has dropped from 47 per thousand to 45. During the same period, enrollment in primary school among the relevant 7-12 year-old age group has risen from 34 percent to 58 percent. For boys the increase has been from 42 percent to 70 percent; for girls the increase has been from 25 percent to 46 percent.

Several caveats are in order, however, regarding Senegal's overall achievements in improving the physical quality of life. Based on its per capita income, literacy rate, and life expectancy, Senegal ranks 112th out of 130 countries on the UNDP's "index of human development". This is higher than other Sahelian countries, but lower than Haiti (101st) or Bangladesh (107th). As with per capita income, the average availability of calories in the

Senegalese diet in the first quarter century after independence did not change significantly, and there is some evidence of a small decline (seven or eight percent overall during the 25 year period) with a higher proportion of available caloric intake coming from cereals. Senegal is considered to be a food insecure country, and remains below the average daily intake of 2300 calories recommended by the United Nations Food and Agriculture Organization.

Senegal's adult literacy rate rose from eight percent at independence to 24 percent today (28 percent for men, 19 percent for women). Senegal's overall literacy rate is well below other sub-Saharan African rates which currently range from 35-45 percent. Moreover, a significant bias existed (through at least the late 1970s) in the allocation of education resources in favor of major urban areas, higher education, and men. Given the linkages among widespread education (especially basic education), increased farm productivity, and reduced fertility, Senegal will need significant assistance in implementing its evolving education policy in order to sharply reduce the mismatch between current educational levels and skills, and the needs of Senegal's labor market.

## C. Colonial and Religious Legacy

**Colonial Policy**. As the administrative center of the former West African territories, Senegal inherited a large, well-established bureaucracy, and a well-educated elite used to living standards far above those of the rest of Africa. The so-called Lamine Guèye law of 1950 established essential parity between the wage structure of the Senegalese civil service and that of the French colonial service. Wages in the formal economy were heavily influenced by the wages paid by the colonial administration, and a certain rigidity was built into the system through the wholesale adoption of politicized, French-style labor unions (syndicats), together with a system of national employers associations (the patronat).

Under such a high-cost regime, French import-export firms which had been established during the 1930s were joined by highly protected import manufacturing firms in the 1950s, essentially producing light consumer goods such as food, beverages, textiles, shoes, pharmaceuticals, and cosmetics. The French colonial presence in Senegal was complemented by a substantial Lebanese presence, particularly in wholesale, semi-wholesale, and retail trade, and in services such as transport and money lending. The Lebanese in Senegal, many of whom are Muslim, were able to penetrate further into the countryside and to maintain close relations with local religious leaders (marabouts), thus

facilitating their role as important middlemen in the assembly and transport of the peanut crop.

**Muslim Brotherhoods**. More than 90 percent of the Senegalese population is Muslim, and most Senegalese Muslims are affiliated with one of Senegal's three principal brotherhoods (the Mouridiyya, the Tijaniyya, and the Qadriyya). Although brotherhood leaders (marabouts) initially opposed the colonial administration, they eventually became its principal intermediaries in the countryside, particularly as the colonial government sought to expand peanut cultivation by ceding land to the marabouts on the frontiers of the Peanut Basin. By the end of the colonial period, marabouts were among the few actors on the Senegalese stage who were able to mobilize land, labor, and capital, and who were also able to mobilize public opinion in their roles as both spiritual and temporal leaders. To this was added, after independence, the ability to mobilize votes - a potent combination that continued to prove influential into the 1990s.

**Impact of Independence**. With the coming of independence in 1960, the bureaucracy, infrastructure, and industry that had been designed and built to serve a regional population of 20 million were left to service a population of only three and one-half million. Even with considerable French assistance, an independent Senegal found it difficult to pay the salaries of the bureaucracy, to cover operating expenses, and to maintain or expand investment. These problems continue today. At the same time, the centralized administrative control mechanisms, which sometimes seemed irksome in the hands of the colonial administration, appeared less so in the hands of the new administration as it sought to consolidate power, and later as it began to Senegalize industry, agriculture, and commerce. The dirigisme which characterized French colonial policy also dominated Senegalese policy until the late 1970s, and is still a potent influence as new approaches to economic and social organization evolve, and as new actors emerge to share the political and economic stage with the bureaucracy, the marabouts, the syndicats, the patronat, and the Lebanese.

## D. Political Dimensions

Unlike many African countries, Senegal's independence was not accompanied by violent revolution. Continuity of political, economic, and cultural relationships with France was prized, and French influence and ways of thinking remained strong. In the post-independence era, the marabouts became increasingly important as power brokers in

national elections, and continued to command the attention of politicians. The subsidized credit, fertilizer, and equipment programs of the 1960s and 1970s (particularly those in the Peanut Basin) often flowed to and through the marabout class as part of the quid pro quo for their support in mobilizing both rural development and the rural vote. As drought followed drought in the 1970s and 1980s, forgiveness of rural loans became a familiar and practiced political routine, affecting both the rural perception of the meaning of the word "credit", and the willingness of the banking sector to lend outside the major cities. As capital accumulated, and as the Lebanese role shifted toward more urban pursuits, the marabout class expanded further into real estate, trade, and transport where it is sometimes thought that the influence of marabouts may assist in resolving administrative, tax, customs, and border-crossing difficulties.

**Political Parties**. Since independence, Senegal has been ruled by the same party, the Parti Socialiste, initially under the leadership of President Leopold Sedar Senghor (1960-80), and later under the leadership of President Abdou Diouf (1980-present). Throughout the period 1964-75, Senegal was for all practical purposes a one-party state. During his last few years in office, President Senghor took steps to liberalize the regime and to encourage development of a limited multiparty system. President Abdou Diouf furthered the democratic experiment, opening up the political system to more political parties within a few months of taking office.

A large number of political parties are currently active in Senegal, but politics, to an important extent, appears to reflect personalities rather than alternative philosophies and viable programs. In addition to the marabout class, the other traditional interest groups remain, and a number of new forces are beginning to emerge.

**Labor Interests**. Most of Senegal's private sector is based on self-employment, family labor, or microenterprise activity. The majority is not organized in any meaningful way. However, formal sector employment (less than six percent of the potential labor force) is highly unionized. The main, government-sponsored labor federation (CNTS) is well placed, highly visible, and highly active. In reaction to long-term declines in real wages, and to splinter groups in its leadership, the CNTS has publicly gone on record in the National Assembly in favor of real wage increases, and has begun an open campaign against government "capitulation" to outside forces preaching austerity (i.e. the IMF and the World Bank).

**Grass Roots Organizations**. At a much more basic level of organization, Economic Interest Groups (G.I.E.s) have begun to form in the private sector, partially as a reaction to the decline of the state-sponsored cooperative movement. By 1990, over 1600 of such groups have been registered. These groups are legal personalities with power to do business, to open bank accounts, and to be sued in court. Some 69 percent of such groups have less than 50 members; some 82 percent are rural; some 75 percent are male; and some 25 percent are female.

In addition to the G.I.E.s, the number of non-governmental organizations (NGOs) has increased from 50 to more than 120 in recent years. It is estimated that NGO activities have an impact on approximately three million Senegalese (more than 40 percent of the population). Unlike most other Sahelian countries, Senegal has NGO coordinating bodies and structures in place, and a positive relationship has been established between the NGOs and the government. The rapid growth of NGO activities is an expression of the vacuum left by the decline of state-sponsored entities, and is an indication of more positive attitudes toward democratic values and local self-help. These new attitudes on the part of government and on the part of emerging organizations should facilitate implementation of a broad range of development interventions. If growth does not accelerate, however, the tension that is building up among traditional pressure groups, and among the unemployed, will pose an increasing challenge to democratic stability in Senegal in the medium- to long-term.

## E. United States Interests

The United States has three basic interests in Senegal (apart from development and humanitarian considerations). Firstly, Senegal is a functioning democracy which has maintained and staunchly defended its democratic traditions since independence. Secondly, Senegal maintains a leadership position in international affairs; its voice of reason and moderation is respected not only in Third World but in the international community more generally. Thirdly, Senegal has strategic importance for the West. Its excellent port and airport, and its geographic position as the closest link to the Americas, are significant, as demonstrated during the Second World War and during the Falkland's crisis among others. Senegal and the U.S. have a long history of friendly relations which have intensified in recent years. Senegal was a firm supporter of the position of the United Nations and United States regarding the 1991 Gulf war, sending a small but symbolically significant contingent to the area of the conflict.

# II. KEY CONSTRAINTS AND OPPORTUNITIES FOR SUSTAINABLE GROWTH

## A. Structure and Evolution of the Economy

The constraints and opportunities for sustainable growth in Senegal can best be judged not only in terms of the political, historical, and resource considerations discussed above, but in terms of the record of Senegalese economic performance in the 30 years since independence. The historical record is a study in contrasts between the highly erratic nature of the Senegalese growth rate and the highly stable nature of the Senegalese structure of production. (See Table 1).

**Evolution of the Economy**. The erratic nature of Senegalese growth is not unexpected in a small, open, agriculturally based economy that is subject to the vagaries of Sahelian rainfall, and of fluctuating world prices for primary products. The data confirm this, even when substantially smoothed by averaging, as is suggested by the aggregate growth rates contained in Table 1.

**Table 1**
**Senegal: Real Gross Domestic Product by Period, 1960-89**

| SECTOR | 1960-1966 | 1967-1980 | 1981-1983 | 1984-1989 | 1960-1989 |
|---|---|---|---|---|---|
| Primary | 26.5 | 25.9 | 22.2 | 21.3 | 24.4 |
| Secondary | 17.8 | 21.3 | 24.5 | 25.6 | 22.2 |
| Tertiary | 42.1 | 40.3 | 38.3 | 38.6 | 39.9 |
| Salaries | 13.7 | 12.5 | 15.0 | 14.5 | 13.5 |
| Admin. | 12.6 | 11.6 | 13.8 | 13.1 | 12.4 |
| Dom. Workers | 1.1 | 0.9 | 1.2 | 1.5 | 1.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| TOTAL GDP 1977 (Billion CFAF) | 345.9 | 436.0 | 530.1 | 591.8 | 455.6 |
| GDP GROWTH RATE (%) | 3.3 | 1.8 | 5.7 | 1.9 | 2.6 |

**Source: Senegal: Agricultural Sector Analysis.**
**Calculated from Table 1 Annex I.**

Although primary sector production (agriculture, livestock, forestry, and fishing) averaged only 24 percent of GDP during the 30 year independence period as a whole, it has had a considerable effect on the evolution of the overall economy through a number of linkages. Agriculture provides raw materials for about 30 percent of Senegal's industry, and the peanut oil mills alone contribute about 12 percent to the secondary sector (i.e. about three

percent in terms of total national output in 1988). Additional significant impacts on output are generated in the tertiary sector (which includes transport, trade, and miscellaneous services). As incomes rise in the primary, secondary, and tertiary sectors, government revenues rise as well, providing an opportunity, for example, to reduce the deficit, to repay debt, or to reduce arrears. Unfortunately, the opposite frequently occurs, with government expenditures expanding as revenues grow, but failing to contract during the downward part of the cycle.

**Primary Sector**. Over the past 30 years in Senegal, the primary sector (agriculture, livestock, forestry, and fishing) has declined in importance relative to other sectors of the economy (from 27.5 percent of GDP in 1960 to 21.1 percent of GDP in 1990). Moreover, agriculture has grown more slowly than the primary sector as a whole. For example, available data indicate that the primary sector declined from 27.4 percent of GDP in 1978 to 21.1 percent of GDP in 1990. During the same 1978-90 period, agriculture declined from 15.3 percent of GDP to 8.3 percent of GDP. The only sub-sector of the primary sector which has increased its share of GDP during the 1978-90 period has been livestock which is up from 6.7 percent of GDP in 1960 to 7.9 percent of GDP in 1990.

In general the primary sector is characterized by extreme output variations, especially during the 1970s and the 1980s. Aside from bad weather in 1977, 1978, 1980, 1984, and 1989, a long-term shift from cash crops to lower-value food crops has contributed to stagnation of value added in agriculture, as a growing rural population seeks to maintain food security in the face of relatively fixed yields, and fixed or declining land resources. For example, the average total area planted in Senegal during the ten years between 1980 and 1989 was 3.6 percent below the 1970-79 average, with the area devoted to cash crops down 16.3 percent, and food crop areas up by 8.7 percent (an average increase of 0.8 percent per year). However, since the rural population has also been increasing by about 2.1 percent per year, the consequences are clear - the food crop area planted per rural person will have decreased by about 1.2 percent per year. In such circumstances, the demand for increases in productivity are high. In many cases, it may be possible to increase the supply of cash crops only by increasing the supply of food crops. The potential for producing the desired increases in productivity are dealt with in other sections below.

**Secondary Sector**. Industrialization (particularly through a process of import substitution) has been a high priority of the Senegalese government since early in the independence period. The share of the secondary sector (industry, handicrafts, construction, and public works) has expanded from 17 percent of GDP in 1960 to 26

percent of GDP in 1989, the only sector to increase its share over the 30 year period. The share of industry alone has increased from 12 percent of GDP in 1960 to an estimated 15 percent of GDP in 1988. Even this level of industrial expansion has required significant tax breaks, direct subsidies from the Treasury, export incentive payments, direct government investment in productive enterprises (both parastatals and private), significant use of donor resources, the granting of monopoly rights, directed and subsidized credit, tariff barriers on competing imports, and the imposition of quantitative import controls.

Lack of raw materials, high energy costs, high labor costs, excessive bureaucracy, and an overvalued exchange rate are some of the serious constraints to renewed growth in the industrial sector. Despite recent reform efforts, the Senegal Labor Force and Employment Survey notes that "Senegal's policies of import substitution and trading, primarily in the protected 'franc zone', have done little to improve efficiency, particularly labor productivity. Recent econometric analysis indicates that Senegal's export industries are not any more competitive, as a group, than those producing for the domestic market - a surprising result generally but perhaps not given Senegal's legacy. Senegal's industrial sector has been restructured to a lesser degree than many other SSA [sub-Saharan African] countries, and remains probably overly capital intensive given its industrial and export base and relatively high labor costs compared to other non-francophone developing countries."

**Tertiary Sector**. More important than the role of industry is the large share in the Senegalese economy held by the tertiary sector (transport, trade, miscellaneous services) throughout the independence period. This share averaged some 40-42 percent of GDP, the higher figure at the beginning of the period. Whatever the enthusiasm for industrial development, it should be clear that the Senegalese economy will never pass through the stage of dominance by manufacturing, construction, and related secondary sector activities that typified development in much of the West. Senegal made a direct transition from a predominantly agricultural economy to a predominantly service economy without ever passing through the industrial stage, and it did so more than thirty years ago, before the independence period began.

**Salaries of Government and Domestic Workers (Quartenary Sector)**. Given the discussion above on the subject of the bureaucracy, it should come as no surprise that the share of government salaries in GDP has remained nearly constant over a period of more than 30 years. This share routinely averaged 12-13 percent of total GDP. The level in 1960 was in fact 13.3 percent, and the 1990 figure was 12.3 percent, with a temporary peak of 15.1 percent in 1985 and 1986, just as the IMF stabilization program began to bite with

regard to the government wage bill. Salaries paid to domestic workers have increased from about one percent of GDP at the time of independence to 1.5 percent of GDP in 1990.

**Implications for Income Distribution**. As suggested by the discussion above, the urban/rural dichotomy in the Senegalese structure of production has important implications for income distribution at any given point in time. At present, the primary sector as a whole (agriculture, livestock, foresty, and fishing) represents 21 percent of GDP in Senegal, too low for an economy where 61 percent of the population lives in rural areas. Moreover, a good deal of income within the primary sector does not accrue to persons living in rural areas, although detailed understanding of this and many related points must await completion of baseline household budget studies currently being undertaken by the Senegalese Institute for Agricultural Research (ISRA) and by the International Food Policy Research Institute (IFPRI).

As indicated in the Senegal Labor Force and Employment Survey, at the time of independence Senegal had one of the highest urban/rural income differentials in Africa - a factor of about 16:1. By the mid-1980s, this factor had diminished to about 7:1 with only a few signs that temporary and permanent migration to Dakar and to secondary cities was slowing or coming to a halt. There is some evidence that financial stabilization and structural adjustment policies of the 1980s initially contributed to turning the terms of trade in Senegal in favor of rural producers, however, this was largely offset by the peanut price decreases of 1987.

## B. Macroeconomic Stabilization and the Environment for Development

Structural adjustment and accelerated growth in Senegal must take place against a background of reasonable macroeconomic stability that allows both the government and the private sector to mobilize savings, and to make investments in an increasingly efficient manner. Viewed against the background of its own performance in the late 1970s and early 1980s, or against the performance of most other developing countries in Africa or elsewhere, Senegal has put in an impressive performance on most macroeconomic variables since mid-1983 when International Monetary Fund Stand-By assistance was renewed. At the same time, by the beginning of the 1990s a certain "adjustment fatigue" may have begun to show itself on the budget issue as Senegal failed to meet key International Monetary Fund budget and arrears targets, and was forced to accept a "shadow" International Monetary Fund program through the end of calendar year 1990.

Both Senegal's overall good performance record, and the possible fatigue syndrome on the budget issue are evidenced in Table 2.

**Budget Stabilization**. In addition to its return to positive per capita income growth during the past five fiscal years, Senegal's overall budget stabilization results have also been significant. Relative to GDP, the role of the government in the economy has been reduced in the 1980s by more than one-third. Government expenditure which accounted for 31.9 percent of GDP in FY 1981, and for 25.2 percent of GDP in FY 1984, was reduced to 21.1 percent of GDP in FY 1990. Still, the 1990 figure represents a slippage of one percent of GDP from the low point achieved in FY 1988. Similarly, the overall budget deficit has been reduced by more than two-thirds from a peak of 11.5 percent of GDP in FY 1981 to 3.4 percent of GDP in FY 1990. Here the slippage (2.2 percent of GDP) has been somewhat greater from the low point achieved in FY 1988.

As indicated in Table 2, Senegal's major macroeconomic failure during the 1980s has been the failure to address the issue of revenue collections. Revenues have fallen from a peak of 23.8 percent of GDP in 1980, to a low point of 17.1 percent of GDP in FY 1990, a decrease of more than one-quarter. A key stabilization issue of the early 1990s will be Senegal's ability and willingness to increase the mobilization of domestic (as opposed to donor) resources, and to cut through the web of commitments to existing pressure groups (French, Lebanese, and Senegalese - including the marabout class) for legal tax exonerations, and for extra-legal tax relief, particularly with respect to enforcement of customs duties and real estate taxes.

Senegal eliminated all external budget arrears in FY 1986, but in keeping with the above pattern of slippage, external arrears reappeared in FY 1990. Internal arrears of the government and public agencies were reduced by more than four-fifths between FY 1984 and 1988. One IMF target was to eliminate all such domestic arrears by June 1989, but revenue shortfalls have postponed the proposed target to June 1992.

**Savings and Investment**. Largely as a result of improved fiscal management, tighter monetary policy, and improved supply conditions, the gap between domestic savings and domestic investment closed sharply during the past five fiscal years. Although gross domestic investment remained steady at some 14-15 percent of GDP throughout the period, the reduction of government dis-saving has decreased the savings gap by nearly four-fifths from 14 percent of GDP in FY 1983 to 3.1 percent of GDP in FY 1990.

## Table 2
## Senegal: Key Macroeconomic Indicators, FY 1980-1990

| FY | GDP (Billion CFAF at Current Prices) | Growth Rate of Real GDP | GDP Deflator (Percent) |
|---|---|---|---|
| 1980 | 604.7 | 1.6 | 10.5 |
| 1981 | 648.6 | -2.0 | 9.5 |
| 1982 | 757.0 | 6.5 | 9.6 |
| 1983 | 891.8 | 8.4 | 8.6 |
| 1984 | 977.5 | -1.1 | 10.8 |
| 1985 | 1,083.8 | -0.5 | 11.4 |
| 1986 | 1,223.1 | 4.2 | 8.3 |
| 1987 | 1,338.2 | 4.2 | 5.0 |
| 1988 | 1,432.9 | 4.4 | 2.5 |
| 1989 | 1,467.7 | 0.6 | 2.0 |
| 1990 | 1,564.4 (est.) | 4.6 (est.) | 2.0 (est.) |

| FY | Government Expenditure and Net Lending (Commitments | Government Revenue (including Grants) | Government Deficit |
|---|---|---|---|
| 1980 | 28.6 | 23.8 | 4.8 |
| 1981 | 31.9 | 20.4 | 11.5 |
| 1982 | 28.1 | 21.2 | 6.9 |
| 1983 | 28.5 | 20.3 | 8.2 |
| 1984 | 25.2 | 20.6 | 4.6 |
| 1985 | 23.5 | 19.9 | 3.5 |
| 1986 | 21.7 | 19.5 | 2.3 |
| 1987 | 21.4 | 19.9 | 1.5 |
| 1988 | 20.1 | 18.9 | 1.2 |
| 1989 | 20.8 | 18.5 | 2.4 |
| 1990 | 21.1 (est.) | 17.1 (est.) | 3.4 (est.) |

| FY | Balance of Payments Deficit (excluding Grants) | External Grants | Balance of Payments Current Account Deficit (Including Grants) - Saving/Investment Gap |
|---|---|---|---|
| 1983 | 21.3 | 7.7 | 14.0 |
| 1984 | 17.3 | 7.1 | 10.2 |
| 1985 | 18.7 | 6.5 | 12.2 |
| 1986 | 15.6 | 5.6 | 10.0 |
| 1987 | 11.0 | 5.3 | 5.7 |
| 1988 | 9.9 | 5.2 | 4.7 |
| 1989 | 9.6 | 5.1 | 4.5 |
| 1990 | 8.3 (est.) | 5.2 (est.) | 3.1 (est.) |

Source: Ministry of Economy and Finance. IMF. EBS/89/18; EBS/87/205; SM/86/59; EBS/84/267. IMF and USAID estimates for FY 1990.

**Current Account Deficit**. A parallel decline in the current account deficit (including grants) from 14.0 percent of GDP in FY 1983 to 3.1 percent in FY 1990 also took place. The current account deficit (excluding grants) underwent an even more dramatic decline as external grants fell from 7.7 percent of GDP in FY 1983 to an estimated 5.2 percent of GDP in FY 1990.

**External Debt**. Senegal's outstanding external public debt which had peaked at 86 percent of GDP in FY 1984, was reduced to an estimated 78 percent of GDP in FY 1990. The debt service ratio also appears to have peaked in FY 1990 (at a level equivalent to some 31 percent of exports of goods, services, and private transfers), and is now slated to decline. This should permit the elimination of further external debt rescheduling after FY 1991.

**Inflation**. Improved supply and demand conditions and restrictive monetary policy have combined to produce important reductions in the rate of consumer price inflation and in the GDP deflator. The rise in the consumer price index, which had peaked at 20.1 percent in FY 1982, was reduced to 5.5 percent in FY 1986. Small negative rates of consumer price inflation in FY 1987 and FY 1988 were achieved owing to particularly favorable supply and price developments in the agricultural sector, to increased competition in the industrial sector, and to successive reductions in quantitative trade controls and tariff barriers. Consumer price inflation was held to a mere 2.4 percent in both FY 1989 and FY 1990, a sharp reduction from the 1982 peak of 20.1 percent. As prices continued to fall, and as nominal interest rates were made higher and more flexible, real lending rates in Senegal rose from minus 3.9 percent in 1983, to a peak of 17.2 percent in 1986, before declining to 12.4 percent in 1990. A parallel pattern prevailed with regard to higher real interest rates paid to savers.

**Exchange Rate**. As a member of the West African Monetary Union (WAMU), Senegal cannot unilaterally control its nominal exchange rate, and current government policy is to oppose any devaluation, in part based on arguments regarding the supposed low supply elasticity of the Senegalese economy, and in part based on arguments related to the likely negative impacts of a devaluation on the budget. These negative impacts include, in particular, an increase in the local currency (CFAF) value of payments for debt service, petroleum purchases, and other external obligations that are normally denominated in dollars. Moreover, the increased protection for domestic industry and agriculture provided by a devaluation would obviate a good deal of the need for high protective tariffs and mark-ups (perequations) on food imports that also provide substantial revenues for government.

It may be noted that the tariff reductions of 1986 and 1988 were partially rolled back in 1989, owing not only to the protests of the relevant interest groups, but also owing to the need to meet IMF revenue targets. This has been an important example of short-term stabilization measures conflicting with long-term structural adjustment measures.

The current approach of Senegalese and WAMU Central Bank authorities is to continue to keep the inflation rate in Senegal below that of its trading partners, and to continue the depreciation of the real (inflation-adjusted) exchange rate that has amounted to some 16 percent between early 1986 and early 1990, despite the rise in the nominal exchange rate. The budget issue and the devaluation issue (or the issue of ways to approximate a devaluation) remain as key indicators of the seriousness of Senegalese intentions to promote structural adjustment and to accelerate growth in the 1990s and beyond.

## C. Markets for Goods and Services

Since 1983, the government of Senegal has pursued a policy of price liberalization that has resulted in a sharp reduction in the scope of price controls, and the introduction of greater flexibility in price determination. Beginning in October 1985 official prices for coarse grains were eliminated; authorizations for transporting more that 200 kilograms of grain were no longer required; and license and other requirements for grain wholesaling were abolished.

In December 1988, the government removed all remaining price controls except those on a small number of goods still deemed strategic or essential. These comprise the minimum producer prices for three agricultural products (peanuts, cotton, and paddy rice), and the prices for thirteen classes of retail goods (sugar, rice, tomatoes, tomato concentrate, cooking oil, wheat flour, bread, charcoal, petroleum products, cement, public medical fees, and pharmaceuticals). Also set by the government are the tariffs for electricity, water, and transportation. Prices of five "essential" consumer goods (sugar, condensed milk, wheat flour, cooking oil, and tomato paste) could not be decontrolled since they were produced by firms benefitting from long-standing special arrangements (conventions spéciales ) with the government.

Although committed to disengagement in a general sense, the state remains heavily involved in the marketing of imported rice, domestic rice, peanuts, peanut seed, imported

vegetable oil, cotton, and cotton seed. The state also provides a limited market for local millet, sorghum, and maize.

Senegal's high internal prices for such basic goods and services as electricity, petroleum products, sugar, flour, milk, wheat, and cotton act as significant constraints to increased output and employment, particularly in the food processing and textile sectors where industrialization often gets its start. The high prices characteristic of these products not only reflect the high-cost structure of some of the producing organizations, but also reflect substantial open or hidden taxes (perequations). These are seen as required owing to the relatively poor functioning of broader more equitable sources of tax revenue (including the income tax, the value-added tax, customs taxes, and real estate taxes) for reasons relating to interest-group politics previously discussed.

## D. Markets for Factors of Production

**Labor Market**. Senegal's labor market and system of industrial relations in the formal sector is based on the 1961 Labor Code which is itself based on the French Overseas Labor Code of 1950. Under the relevant legislation, government (Labor Ministry), the workers (CNTS), and the various employers groups form a special Tripartite Commission that is supposed to set the base wage rate for professional categories (salaire de base) and the minimum interprofessional wage (SMIG). The Senegal Labor Force and Employment Survey notes that "the so-called collective bargaining process is a highly centralized and visible process that tends to be determined unilaterally in the Presidency with the accord of business and organized labor. Thus, wage setting, i.e minimum wages, has become a very political process and one that trends to lag well-behind rates of inflation and occurs during infrequent intervals. Dating from colonial times, Senegalese unions have been oriented towards applying pressure on the government, not employers, to obtain satisfaction for their wage and other demands".

Given a fixed exchange rate, the general policy of the government in recent years has been to enhance Senegal's competitiveness both by increasing efficiency and by lowering input costs, including the costs of labor. As a result, the last change in the minimum wage occured in 1985. Given inflation, the real guaranted minimum wage rate declined by 19 percent between FY 1986 and FY 1989, and is projected to decline a further six percent during FY 1990-92.

It is worth mentioning that total urban employment in Senegal (formal and informal) totals only some 770,000. Formal sector employment (to which the above described system would apply) totals no more than 170,000 persons or six percent of the potential labor force. Of these, some 90,000 are employed by the government and parastatals (three percent of the potential labor force). Only some 30,000 (one percent of the potential labor force) are employed in manufacturing. Services employ under 30,000 of whom about 2,500 are employed in banking and finance. The remainder of modern sector employment includes primarily temporary and casual labor. Thus whatever may be concluded about the difficulties and anomalies of Senegal's formal labor market, this market applies to only a very small minority of workers.

However, the reverse conclusion may also perhaps be drawn. Senegal's modern sector employment may be constrained in part because the formal labor market is too cumbersome, and fails in any real sense to link specific wage rates with specific labor productivity at the level of the shop floor. Multiple measures adopted by the government beginning in September 1990 have acted to introduce more flexibility in employment regulations and wage determination, but the basic notion of linking productivity to wages is in its infancy.

**Capital Market**. By early 1991, Senegal's formal financial system consisted of ten commercial banks and nine non-bank financial intermediaries. Formal capital markets, however, have had a smaller impact on the development of the Senegalese economy than might be expected for a number of reasons. In the last half of the 1980s, for example, Senegal routinely invested some 15 percent of its recorded GDP. Of this, 30 percent was invested by the public sector, and this was largely financed by the donors. Private and parastatal investments accounted for some 10 percent of GDP, but a good portion of truly private investment will have been financed from retained earnings, family borrowings, tontines, and informal lending, especially since such investment includes the Muslim brotherhoods, (peanuts, transport, real estate), private service companies (insurance companies, commercial traders) and smaller-scale, informal, and G.I.E. businesses.

Since 1989, Senegal has undertaken a program of banking sector reform in cooperation with the West African Monetary Union, and supported by the World Bank, the French, the U.S. and other donors. The purpose of the restructuring is to improve financial intermediation to permit the private sector to increase its ownership of productive resources as the public sector reduces its position in the economy, as well as to facilitate normal business transactions at all levels. To date four government-owned banks have been

liquidated and two privatized; a regional Bank Supervision Commission has been formed; interest rates have been raised and made more flexible; double taxation of interest earned on savings has been eliminated; sectoral credit allocations have ceased; prior authorization of bank loans by the Central Bank has ended; and the government has ceased giving its guaranty to private and parastatal loans.

It is evident, however, that many other elements have to be in place in order to create the level of confidence required for a truly dynamic banking system to emerge. Moreover, increased mobilization of domestic savings, and improved outreach to all sectors of the economy, will require institutions in addition to the classic banks of the type currently operating in Senegal. These additional institutions might include mutual savings and credit organizations, or other non-bank financial intermediaries of various types, some of which are being studied or already exist in prototype, including USAID's own successful Community and Enterprise Development project for lending to small- and medium-scale enterprises.

**Land Tenure**. Land ownership and use rights in Senegal are defined by Law No. 64-46 (the Law of National Domain) enacted on June 17, 1964, as modified by Law No. 76-66 of July 2, 1976. The two laws overlay countless versions of customary law, still largely in practice, and replace the French Civil Code, the Torrens system, and the simplified registration system (livret foncier), that existed side by side in Senegal by the time of independence. The 1964 Law divides the National Domain into four categories: urban zones; classified zones; rural zones; and pioneer zones. Classified zones are forest areas and protected areas such as national parks. Rural zones are those which at the time of the law were regularly exploited for agriculture, pasture, or rural housing.

Under current law less than two percent of land in Senegal is strictly private, the remainder lying within the National Domain. Persons farming land within a rural zone have use rights, but farmers cannot sell, rent, or lend their land. All transactions must be conducted through localy elected rural councils; there is no legal land market.

At least in the Peanut Basin (which has been studied the most thoroughly) it appears that the Law of National Domain has largely curtailed the open sale and mortgage of land in the National Domain, but it has not put a stop to customary land-lending practices that improve the allocative efficiency of land use within the traditional village compound. Heirs are still determined by rural compounds in accordance with customary rules without interference by the rural councils. The right of access to land is established primarily

through customary principles, and the right to alienate compound land is not commonly used (as would be expected from customary law). While tenure security might be a constraint, studies conducted by the University of Wisconsin Land Tenure Center suggest that it is not currently the binding constraint given other problems including environmental degradation, difficulty in accessing technology, poorly functioning input supply systems, and limited markets.

**Tree Tenure**. Since 1984, the government of Senegal has also been considering new forest legislation, including the recognition in law of private property rights over trees that farmers plant on their farms. A draft of a new Forest Code was in the National Assembly in late 1990, and certain provisions of the new code, including recognition of private property rights to planted trees, are being treated by many forestry officials as if they were already in force. This new Code, if implemented properly, provides new opportunities for expansion of forestry and agro-forestry activities that can address Senegal's serious erosion problems, protect and expand rural incomes, and reduce the labor time involved in gathering fuelwood (particularly for women and children) in rural areas. A possible constraint is Article 53 of the New Code which would require persons wishing to cut or trim trees to secure authorization from the forest service. The process of drafting implementation regulations for the New Forest Code, in particular Article 53, will be of particular importance in establishing a positive environment for effective forestry and agro-forestry interventions.

## E. Rural Incomes

**Constraints**. Rapid population growth and a fragile natural resource base have combined to constrain the growth of the primary sector in general, and of crop production in particular. Although Senegal's population in 1990 was more than double that of 1960, the real value of production in the primary sector had increased by only 70 percent, and the real value of crop production has remained essentially unchanged. During the same period, the real value of marketed crop production declined by nearly one-half as a growing rural population increased the share of home consumption in total crop output, and shifted from cash crops to food crops in order to maintain basic food security. Cash incomes to purchase food to fill the production/consumption gap, to purchase health and education services, and to invest in farm inputs, implements, and other technologies have declined, so that the low productivity constraint has begun to feed upon itself.

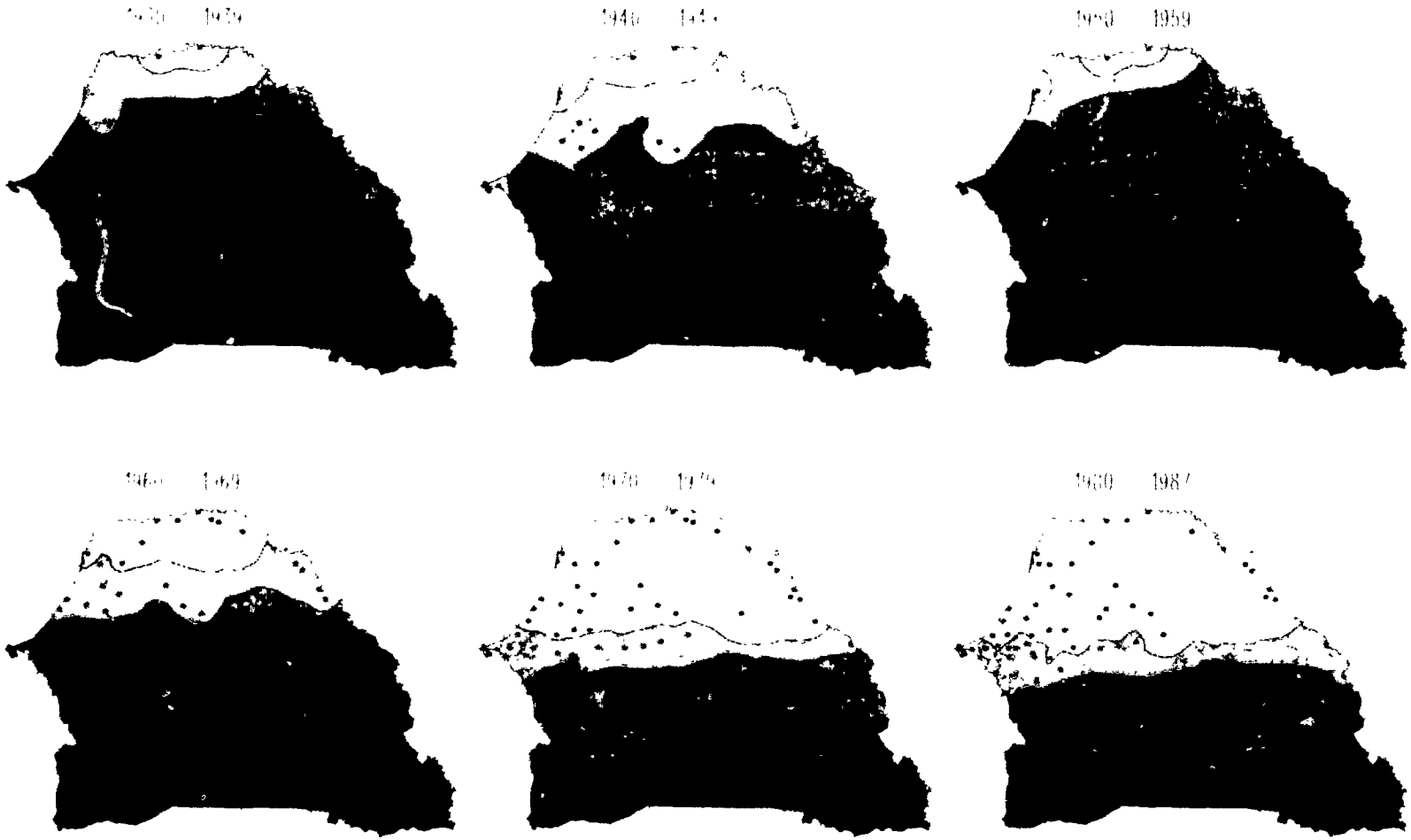
Since independence, Senegal's total area in crop production has remained essentially unchanged as new lands brought into production have been offset by land lost to declining rainfall, to erosion, and to declining soil fertility. Rainfall, both its level and distribution over the growing period, is a key constraint. Map 3 is included here to show the magnitude of the problem and how it has changed over time. Most notable is the southward shift in the 500 mm rainfall zone, to the point where over the 1980-87 period, nearly one-half of the country would have been considered unsuitable for rainfed agriculture (400 mm is considered the minimum for rainfed crops. The 500 mm isohyet corresponds to an 80 percent probability of 400 mm of usable rainfall). The 80 percent probability implies four crops in each five years, about the minimum for successful farming.

In Senegal millet/sorghum accounts for 50 percent of land planted to crops, and peanuts account for some 36 percent. Maize accounts for an additional five percent, with rice and cowpeas accounting for some four percent each. Over the past 30 years, national yields for millet/sorghum, peanuts, and cowpeas have exhibited no statistically significant upward trend. Maize yields in the southern parts of the country have improved over time (0.9 - 1.6 percent per year) but in all cases at a rate well below the rate of growth of population. Rice yields overall appear to be increasing given the heavily subsidized production in the Senegal River valley, but rice yields in the Casamance show no trend. Most of this may be attributed to the local culture which reserves rice production to women (who have little access to credit or improved inputs) and to soil degradation from saltwater intrusion on the floodlands used for swamp rice production. Overall in Senegal, increases in yields arising from the increased quantity and quality of the labor force, from improved and short season seeds, and from increased animal traction and other farming technologies have not been winning the battle to offset the decline in the physical quality of the soil.

In general, the development and adaptation of new technologies has been limited by the lack of direction and poor management of the research establishment, and by a lack of motivation and operating expenses in the extension service. Lack of credit, particularly in recent years, has been the natural outcome of the high risk associated with Senegalese agriculture as it has been practiced, the conservative nature of the French-dominated banking system, and the memory of the credit forgiveness declarations of the national government in the not-so-distant past.

As discussed previously, marketing and pricing of coarse grains in Senegal are basically decontrolled, while the marketing and pricing of peanuts and rice are controlled by the state. Taking account of the estimated 40 percent overvaluation of the exchange rate,

# SENEGAL AVERAGE ANNUAL RAINFALL, 1930 1987




0 200 400 600

KILOMETERS

SCALE 1 : 10,000,000

PREPARED BY U.S. GEOLOGICAL SURVEY, EROS DATA CENTER

recent analysis suggests that millet receives somewhat negative effective protection (minus 11-12 percent) in the important peanut basin, and only slight protection (two to seven percent) nearly everywhere else. By comparison, the substitute for millet in consumption (rice) receives heavy protection (250-300 percent) country-wide, while the substitute for millet in production (peanuts) is encouraged by a rate of effective protection of 44-64 percent country-wide. Although the 1986 Cereals Plan saw an important role for millet in domestic production and consumption, the production of millet is constrained by a revealed political preference for providing protection to peanuts and especially to rice. Peanut production has a strong linkage to the marabout class, while the peanut marketing monopoly (SONACOS) is sometimes thought to be a source of political patronage and funds. The CPSP monopoly on importing low grade, broken rice is a source of revenue for the Treasury through the price stabilization tax (perequation). Rice transport contracts (subsidized) and wholesaling operations (with guaranteed margins) can also be highly profitable for the politically well-connected, which includes the marabout class. The high internal price for rice which provides for the above margins also help protect domestic production.

**Opportunities**. Based on 1987-89 areas and yields for major cereals crops (millet, sorghum, maize, paddy, and cowpeas) and major cash crops (peanuts and cotton), the U.S. Geological Survey/EROS data center has calculated the human carrying capacity of Senegalese crop production at some 3.9 million people (approximately 57 percent of the current population and approximately 41 percent of the population projected for the year 2000). Cereals were assumed to provide some 80 percent of a daily caloric intake of 2300 calories. At currently applied levels of technology, the total value of Senegalese crop production (cereals and cash crops) totaled some 126 billion CFA. Applying medium to high technologies already in use in Senegal to existing crops, USGS/EROS calculates that the human carrying capacity of Senegal can be expanded by some 40 percent to 5.4 million persons; and that the value of crop production can be expanded by some 26 percent to 159 billion CFAF.

Under a more optimistic scenario, improved yields were combined with an expansion of the area currently under cultivation to include 50 percent of arable land not currently under cultivation or located in reserved areas. In addition, crops were optimally allocated to areas by rainfall requirements and soil types. Under such nearly ideal circumstances (and with the introduction of no radical new technologies and no new crops), Senegal's carrying capacity could be expanded by some 86 percent (to some 7.2 million people), and the value of crop production could be nearly doubled (to 245 billion CFAF). This latter scenario has

# Table 3

## Land and Land Use Characteristics: Land Included and Excluded by the 400 mm Usable Rainfall Zone

| Land Use or Land Characteristic | Area (000 ha) | | | Percent | | Percent |
|---|---|---|---|---|---|---|
| | Included | Excluded | Total | Included | Excluded | Total |
| Total Area | 11,030 | 8,683 | 19,713 | 56.0% | 44.0% | 100.0% |
| No Agric. Potential | 4,232 | 6,544 | 10,777 | 39.3% | 60.7% | 54.7% |
| Moderate Potential | 6,798 | 2,139 | 8,936 | 76.1% | 23.9% | 45.3% |
| Reserved Area | 1,806 | 2,271 | 4,076 | 44.3% | 55.7% | 20.7% |
| No Potential | 1,360 | 647 | 2,008 | 67.8% | 32.2% | 10.2% |
| Moderate Potential | 445 | 1,624 | 2,069 | 21.5% | 78.5% | 10.5% |
| Potential Outside Res. | 5,437 | 1,491 | 6,929 | 78.5% | 21.5% | 35.1% |
| Farmed (1989/90) | 1,357 | 759 | 2,116 | 64.1% | 35.9% | 10.7% |
| Unused (1989/90) | 4,080 | 733 | 4,813 | 84.8% | 15.2% | 24.4% |
| Area Planted to Crops (1989/90) | 1,357 | 759 | 2,116 | 64.1% | 35.9% | 10.7% |
| Groundnuts | 495 | 269 | 765 | 64.8% | 35.2% | 3.9% |
| Cotton | 24 | 0 | 24 | 100.0% | 0.0% | 0.1% |
| Total Cash Crops | 519 | 269 | 789 | 65.9% | 34.1% | 4.0% |
| Millet | 565 | 388 | 953 | 59.2% | 40.8% | 4.8% |
| Sorghum | 114 | 16 | 130 | 87.7% | 12.3% | 0.7% |
| Maize | 91 | 1 | 93 | 98.5% | 1.5% | 0.5% |
| Paddy (rainfed) | 58 | 1 | 59 | 98.8% | 1.2% | 0.3% |
| Niebe | 3 | 62 | 65 | 5.0% | 95.0% | 0.3% |
| Sub-Total | 832 | 468 | 1,300 | 64.0% | 36.0% | 6.6% |
| Manioc | 3 | 13 | 16 | 19.4% | 80.6% | 0.1% |
| Sweet Potatoes | 1 | 0 | 1 | 100.0% | 0.0% | 0.0% |
| Fonio | 2 | 0 | 2 | 100.0% | 0.0% | 0.0% |
| Voanz | 0 | 0 | 0 | 100.0% | 0.0% | 0.0% |
| Beref | 0 | 8 | 8 | 0.0% | 100.0% | 0.0% |
| Sub-Total | 6 | 21 | 27 | 22.2% | 77.8% | 0.1% |
| Total Food Crops | 838 | 489 | 1,327 | 63.1% | 36.9% | 6.7% |
| 1990 Population (000's) | 3,032 | 4,664 | 7,696 | 39.4% | 60.6% | 100.0% |
| Rural | 2,459 | 2,159 | 4,617 | 53.3% | 46.7% | 60.0% |
| Urban | 573 | 2,506 | 3,079 | 18.6% | 81.4% | 40.0% |
| Land Available Ha/pers. | 1.8 | 0.3 | 0.9 | Land Available is the | | |
| Rural | 2.2 | 0.7 | 1.5 | potential outside land | | |
| Urban | 9.5 | 0.6 | 2.3 | in reserves. | | |
| Land Farmed/rural pers. | 0.6 | 0.4 | 0.5 | | | |
| Unused Potential/rural | 1.7 | 0.3 | 1.0 | | | |

Source: Crop Areas: MDRH/DAS; Land Areas and Potential [USGS/EROS, 1990]
Note: Potential is determined by soil characteristics. This does not imply arability because it does not include rainfall criteria - land in the "Included" column should be considered arable while unused potential in the "Excluded" column is most likely not arable. The "potential" area also contains about 15% unusable land due to inclusions (this has not been subtracted).

important implications for population programs in Senegal as well since the country's 1990 population of 7.3 million matches quite closely its theoretical carrying capacity even under very optimistic conditions.

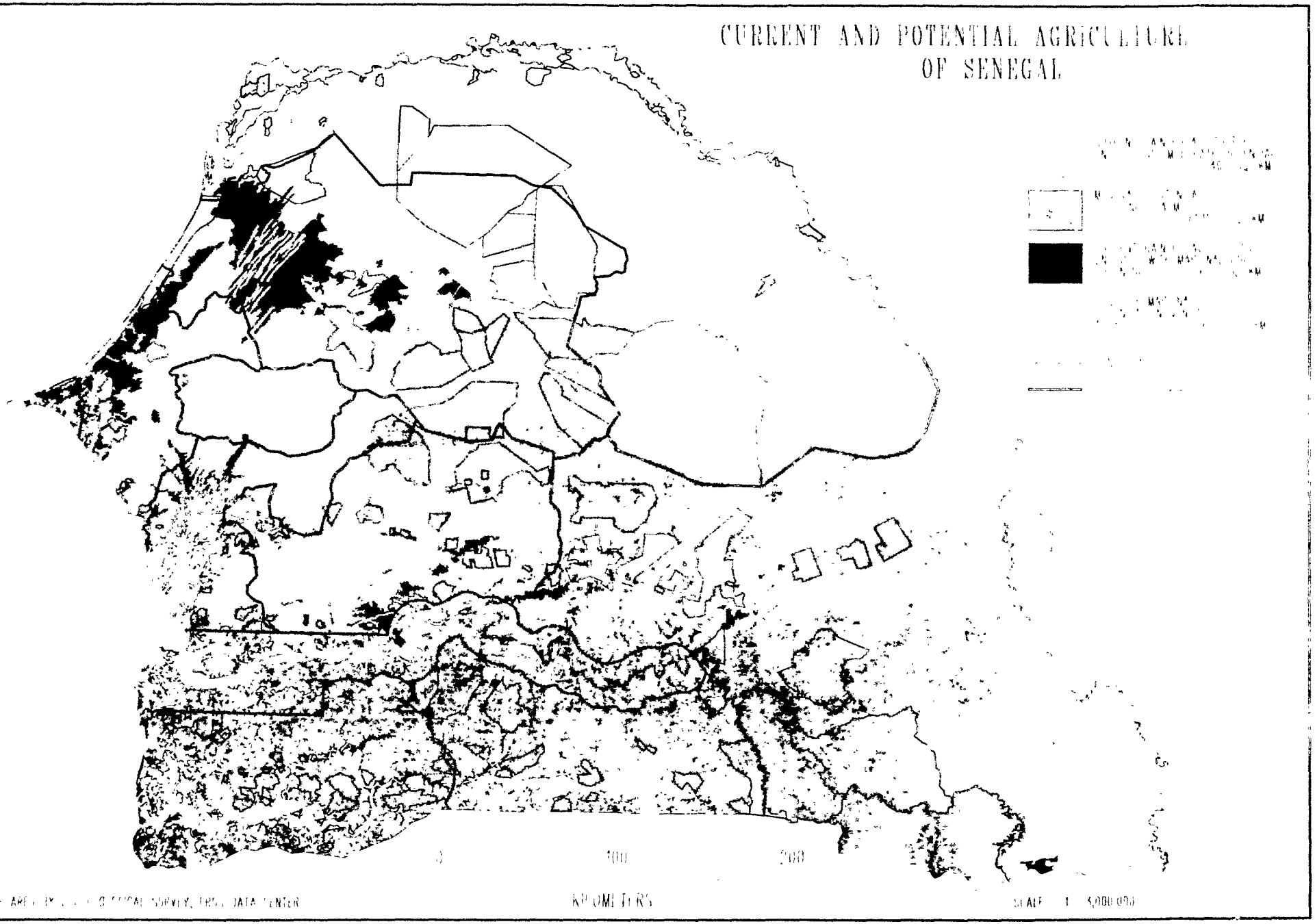
While it is unlikely that the optimal scenario will be realized on a national basis, the USGS/EROS analysis highlights two important facts: even in the absence of high-cost irrigation efforts, additional unused arable land still exists in Senegal in significant quantities (largely in the southern half of the country) and a significant body of improved technologies exists which is not yet widely applied. Table 3 defines sustainable agricultural potential in Senegal somewhat more precisely dividing the country (roughly north and south) into two Regions on the basis of the availability of 400 mm of agriculturally useful rainfall.

The area north of the 400 mm usable rainfall zone contains 35 percent of the peanut production, 37 percent of the millet/sorghum production, 95 percent of the cowpeas, and the majority of the commercial vegetable production in Senegal. There are specific risks associated with increasing vegetable production in most of this area, because much of it depends on well-water for irrigation, and the water table is already becoming degraded.

The development potential (and therefore the array of strategic options) for the area south of the 400 mm usable rainfall isohyet is vastly different from the area to the north. It contains the majority of the potential cultivable land (76 percent) and almost all of the unexploited potential (especially if rainfall is considered). Almost 80 percent of the moderate potential land outside reserves in this zone is still unused. (It contains 85 percent of the national unused potential). After subtracting 15 percent for unusable inclusions and reserving one-third of the remainder for fallow and/or natural vegetation, cultivated area could still be increased by over 1.7 million hectares - 130 percent of the 1989-90 total planted. The only other part of the nation which has even a remotely similar potential is the Senegal River valley (250 thousand hectares is realistically possible for irrigation but at enormous cost). It is reasonable to conclude that this zone represents Senegal's major hope for sustainable growth in agriculture. (See Map 4).

Whatever the availability of arable land, it is clear that increases in Senegal's agricultural productivity, even on a regional basis, must rely on the application of appropriate technologies both to increase the productivity of land currently in production and to protect the productivity of new land from erosion and loss of soil fertility. Much of this technology will have to come from a revitalized Senegalese Institute for Agricultural Research (ISRA). ISRA, and others, have developed and/or tested a fairly large number of

# CURRENT AND POTENTIAL AGRICULTURE OF SENEGAL



productivity enhancing land, water and farm management technologies for the most important crops in Senegal's various agro-ecologic zones.

## F. Population Growth

**Constraints**. Since independence, Senegal's rapid population growth and slow economic growth have interacted to limit improvements in the quality of life which Senegalese have come to expect. Rapid population growth has seriously impacted on the quality of the natural resource base, and Senegal has already surpassed its human carrying capacity in terms of cereals production and sustained forest yields. Yet, slow economic growth which limits the supply of health and education services has retarded the onset of the demographic transition affecting both the demand for and the supply of family planning services. Thus, fertility remains high (an average of 6.6 children); and modern contraceptive prevalence remains low (2.4 percent).

**Table 4.**
**FERTILITY INDICATORS, URBAN/RURAL DICHOTOMY**

| FACTORS | TOTAL | URBAN | RURAL |
|---|---|---|---|
| Total Fertility Rate | 6.6 | 5.4 | 7.1 |
| Desired Family Size - Women | 6.8 | 5.8 | 7.6 |
| - Men | 7.8 | 6.4 | 8.7 |
| Knowledge of Contraception | | | |
| At Least One Method | 91.5% | 96.6% | 89.0% |
| At Least One Modern Method | 67.6% | 87.5% | 58.1% |
| At Least One Traditional Method | 23.8% | 9.1% | 30.9% |
| Approval of Use of Contraception | 44.8% | 60.2% | 33.3% |
| Contraceptive Prevelence: All Methods | 11.3% | | |
| Modern Methods | 2.4% | 6.7% | 0.3% |
| Traditional Methods | 9.9% | 7.5% | 9.6% |
| Desire for More Children | | | |
| No More | 19.0% | 28.5% | 14.5% |
| Want to Space Next Child | 25.3% | 24.8% | 25.5% |
| Breastfeeding | 18.8 mo. | 16.2 mo. | 20.2 mo. |
| Post-Partum Amenorrhea | 16.2 mo. | 12.4 mo. | 18.1 mo. |

**Source: 1986 Senegal Demographic and Health Survey; Diourbel Study, 1989**

Despite extensive contacts with the West, Senegal remains a conservative country, and this has constrained the development of family planning policy and services. Socioculturally, Senegal is a traditional, polygamous, rural, Islamic, ethnically diverse society. The influence of marabouts and other traditional leaders is strong, and men are generally the decision makers. The diversity of languages and cultural norms in a predominantly illiterate, rural population presents special problems for dissemination of information.

As Table 4 indicates, a substantial urban/rural dichotomy exists for fertility characteristics. The urban picture suggests the beginning of the demographic transition - the lower desired family size approximates the number of children women are actually having. There is a high level of knowledge of modern contraceptives, but only 6.7 percent of urban women use them. Moreover, urban, literate women are at greater risk of short birth intervals owing primarily to shorter and less intense breastfeeding, thus reducing use of a traditional method of child spacing. In contrast, the rural scene is not changing: women want more children than they are having; husbands want at least one more child than do their wives. Children are highly valued as a demonstration of fertility, for rural labor, and for old age security. Over half of rural married women have heard of at least one modern method but use of modern contraceptives is virtually non-existent.

It is evident that demand creation among younger women and a more positive attitude about contraceptive use is needed. Of the 19 percent of married women who want to limit their family size, 59 percent are over 45 years of age, and 62 percent have six or more children already. Moreover, among women who know of a contraceptive method, less that half approve of its use, with a marked difference between urban and rural areas. Education is an even more striking factor in approval/acceptance of contraception: 75 percent approval among literate women and 36 percent among illiterate.

Children make up one-fifth of the population but they account for nearly 60 percent of all deaths. Over 10 percent die before their first birthday. Of these, 27 percent die of respiratory diseases, 21 percent from diarrheal diseases, 14 percent from vaccine-preventable diseases (tetanus, measles and polio), five percent from meningitis, and three percent from malaria. In the face of such mortality rates and given the cultural value of children, women must be assured that children will survive before they will alter their desired family size.

Senegal has a centralized, hierarchical system of health care prone to bottlenecks in the flow of funds, the assignment of personnel, and decision-making. Moreover, between 1969 and 1988, the public health budget decreased as a share of the public operating budget from 10 percent to five percent, and some two-thirds of this was spent on personnel support. The health infrastructure consists of 16 hospitals, 47 health centers, 659 health posts, and over 1400 health huts. Nonetheless, only 40 percent of the population has access to health care, and coverage has declined as population has grown and budgets have tightened. At the end of 1989, family planning services were limited to 110 public sector clinics. In addition, medical conservatives have negatively influenced family planning policy by emphasizing curative health care over preventive; delaying legalization of contraception until 1980; instituting excessive regulation of oral contraceptives; and resisting nurses and midwives as family planning providers.

In order to increase both the quantity and the quality of family planning services basic weaknesses in the public health system must be addressed. Given existing and likely budget constraints, management and supervision must be strengthened to increase the efficient use of financial and human resources, e.g. to curtail excessive concentration of qualified personnel in urban areas; to reduce movement of health personnel without regard to service delivery needs; and to increase supervision and training of health care workers. Family planning must be integrated with maternal and child health (MCH) activities which must be reorganized to reduce fragmentation of services and oversight. Donor coordination is essential to support decentralization and to avoid the proliferation of single-issue programs funded and to conserve scarce resources.

Opportunities. Although demand for family planning services is limited, factors are beginning to increase that demand. These include a return to more positive income growth, increasing urbanization, changing fertility characteristics among urban women, increasing participation rates for girls in primary school, increasing female literacy rates, and an increasing number of women's groups involved in activities of all kinds, including income-generating activities. As urbanization increases, and as social pressure increases to enroll children in school, the economic benefits of having children may decline while the economic costs may tend to increase.

On the supply side, attitudes in the Ministry of Public Health and Social Action are changing with an increasing openness on the part of senior officials toward emphasizing family planning activities. The government of Senegal and the Ministry have begun to demonstrate a commitment to decentralization, and are now developing Regional Health

Development Plans. This effort complements a number of Ministry efforts to identify additional sources of funds including increased community support. The Ministry is now demonstrating an increased orientation to preventive medicine and public health care and has requested long-term technical assistance to expand health education. The plan is to train all médecins chefs to the masters level in public health.

With 150 physicians in private practice, several private polyclinics, 20 private pharmacies, 16 midwives with private practices, and 1 truly private hospital (in Thies), the private sector is also in a position to contribute to improved family health care in Senegal. For example, in 1989 the USAID family planning project was supporting family planning in 29 private sector clinics, and 10 other sites offering natural family planning. Continued integration of oral rehydration therapy as well as family planning commodities and services into private sector and NGO health activities could expand overall coverage in a cost-efficient and sustainable manner, particularly in urban areas where demand and incomes are highest. Social marketing of contraceptives poses an opportunity that is only in its infancy, and it may be extended to include anti-malarials and/or oral rehydration salts.

## III. HOST-COUNTRY INSTITUTIONS AND OTHER DONORS

### A. The Public Sector

The public sector in Senegal has been struggling to transform itself from a structure that views itself essentially as the motor of the economy into a much leaner, more flexible mechanism for economic and social management (as opposed to control). In addition to greater management efficiency, it is expected that the changes underway will also contribute substantially to a greatly improved allocation of national resources and more effective program implementation. Many of the proposed changes affect a population highly concentrated in and around Dakar, a concentration which represents a potentially strong force for social unrest. The government's perception of this fact has contributed to great caution in making the changes to which it is otherwise committed.

Within the government a new burst of budget cuts, personnel cuts, and administrative reform has been underway since March 1990. At that time, the number of Ministries was reduced to 13, and organizational responsibilities substantially reordered. Coordination committees have been established to promote inter-ministerial communication. While the changes should be beneficial in the long run, it is not surprising

that in the short run they have contributed to some disruptions in services and delays in program implementation -- not the least of which is the macroeconomic stabilization program.

In terms of program responsibility, the administrative changes should facilitate USAID's interaction with government units: data production and planning functions have been absorbed into the new Ministry of Economy, Finance and Plan; water, irrigation, and environmental issues have been combined under the responsibility of the Ministry of Rural Development; and the previous functions of the Ministry of Social Development have been divided between the Ministry of the Interior and the new Ministry of Public Health and Social Action. The new Ministry of the Interior has now assumed greater oversight of NGO and PVO programs. In general, increased decentralization, particularly at the level of the health and agricultural extension services, will be beneficial to implementation of development programs.

The reorganization, if accompanied by changes in operating procedures, particularly budget-setting priorities, may begin to have an impact on public sector effectiveness in promoting development. Heretofore, the operating budget process has been based on perpetuating existing structures, with minimal evaluation of performance, and with few linkages to the roles and responsibilities of these structures in terms of executing priority development investments.

Appointed regional authorities (prefets and sous-prefets) and elected local officials (mayors and local councils) are forces that can have an impact on development activities. At the local level, multi-disciplinary rural development centers (Centres d'Expansion Rurale Polyvalents) are responsible to the Ministry of the Interior. These centers are intended to unify the development efforts of local groups (including PVOs and NGOs).

## B. The Private Sector

The Senegalese private sector contributes roughly 85 percent of GDP, and employs some 97 percent of the potential labor force. The Senegalese private sector accounts for nearly 100 percent of primary agricultural production, 86 percent of industry (including food processing), and 77 percent of services. Public and parastatal dominance has been concentrated in peanut marketing, mining, banking, power and communications.

The Senegalese private sector is primarily informal and rural, with a growing urban informal sector in light industrial production and crafts, construction, trade, transport and other services. Larger investments in the modern formal sector have traditionally come from the French and Lebanese. Today, an estimated 20,000 French, and an approximately equal number of Lebanese remain in Senegal. French and other European economic interests tend to be concentrated in food products, textiles, mechanical engineering, metal conversion, wholesale and retail trade, industrial equipment, chemicals pharmaceuticals, tourism, insurance, and publishing.

French private companies are all members of the French Employers Union (SPIDS), which represents more than 60 percent of formal sector activity, 76 percent of primary industry, and 65 percent of secondary industry. The Senegalese government has worked to balance the power of the French association by founding the CNP (National Employers Association) of which SPIDS is a member. The CNP currently accounts for 90 percent of formal sector activity, including all professional associations. Other organizations include the National Council of Employers, the local Chambers of Commerce in major cities, and the Chambre des Métiers for artisans. Despite the highly formal profile of business associations in Senegalese affairs, CNP representatives often express the opinion that the New Industrial Policy and other reform programs have been pursued without adequate consultation prior to implementation.

Lebanese economic interests are concentrated in food products, chemicals, plastics, rubber, wholesale trade, retail trade, tourism, and transport. Lebanese influence on policy and administration is more subtle and more social. It is based on intimate knowledge of, and alliance with, important Senegalese families and often includes a mutual understanding and appreciation of Muslim values and practices.

The formal Senegalese private sector is growing, with investments increasing in tourism, transport, and small-scale trade (replacing the Mauritanians expelled in 1990). Private Senegalese investors are also entering some manufacturing industries (e.g. textiles) in increasing numbers despite some difficult economic trends.

Problems facing the modern formal economy (e.g., lack of protection and competitiveness, aged equipment, tight credit, policy uncertainty) are leading to growth in the informal economy. The informal sector contribution to GDP was estimated at 60 percent in 1987, up from 48 percent in 1981. The informal sector includes primarily

microenterprises, often self-employed or assisted by family labor, and G.I.E.s, which are replacing cooperatives and which provide a formula for credit access to small business.

Private sector organizations are numerous and represent all areas of activity including the employers associations, labor unions, special interest groups, G.I.E.s, PVOs, and NGOs discussed in detail in section I.D above. The employers association (CNP) has become somewhat more active (and the government somewhat more receptive) in recent years, in pursuing a dialogue on development issues. Increasingly, private sector operators are indicating that they perceive a change of attitude among government officials, and an increased understanding of private sector requirements. Yet official policies have not provided consistent signals, and revenue-raising imperatives have conflicted with the desire to provide tax and other incentives for business development. Government has also demonstrated an increasingly positive attitude and willingness to cooperate with the large number of PVOs and NGOs offering active support for health, natural resource management, agricultural, and women's activities, among many others. USAID believes it can play an important facilitating role in encouraging the policy dialogue between the private sector and the government on key issues and can assist the NGO/PVO community in carrying out a similar dialogue.

## C. Other Donor Programs

**Other Donors**. Donor development assistance to Senegal grew at a rapid rate throughout the 1980s (8.8 percent per year) reaching a level of 600 million by 1988, or roughly two and one-half times the per capita assistance received by other countries in sub-Saharan Africa. Senegal currently receives support from some 27 major donors, of which the top six are France, the European Community (EC), the World Bank, Italy, Japan and the U.S.A. (See Table 5).

Donor assistance to directly productive sectors (agriculture, fishing, forestry, mining, industry, construction, banking, tourism, etc.) has grown most rapidly during the past five years and is now the largest category of development assistance (26 percent of the total). Program assistance has also grown rapidly and is now the second largest category of assistance (24 percent of the total). As Senegal has recovered from the drought of the early 1980s, food aid has diminished to comparatively low levels.

**Table 5**

**Senegal: Gross Official Development Assistance by Donor, 1980-88**

(Disbursements - Millions of U.S. Dollars)

| Top 10 Donors | 1980 | 1985 | 1986 | 1987 | 1988 | Average 1980-88 |
|---|---|---|---|---|---|---|
| France | 111.4 | 82.4 | 153.7 | 174.8 | 186.6 | 141.8 |
| IDA | 12.1 | 29.1 | 113.3 | 116.3 | 59.0 | 66.0 |
| E.C. | 24.3 | 6.2 | 64.8 | 74.4 | 65.4 | 47.0 |
| United States | 36.0 | 44.0 | 40.0 | 48.0 | 35.0 | 40.6 |
| Italy | 0.1 | 15.7 | 31.0 | 45.4 | 50.0 | 28.4 |
| Arab Countries | 2.1 | 39.5 | 36.0 | 33.3 | 26.5 | 27.5 |
| Germany F.R. | 11.9 | 15.9 | 26.9 | 16.0 | 20.4 | 18.2 |
| Japan | 5.0 | 11.7 | 12.8 | 25.3 | 36.3 | 18.2 |
| Canada | 6.8 | 13.9 | 18.0 | 25.9 | 24.4 | 17.8 |
| AF.D.F. | 0.4 | 2.3 | 9.8 | 36.3 | 23.4 | 14.4 |
| Other Donors | 57.5 | 42.6 | 93.4 | 83.3 | 72.0 | 69.8 |
| TOTAL | 267.6 | 303.3 | 599.7 | 679.0 | 599.0 | 489.7 |

The key multilateral donors assisting Senegal are the World Bank, the European Community and the IMF. World Bank and IMF assistance, primarily in the form of structural adjustment, started in the 1970s in an effort to control inflation, the budget, and balance of payments deficits, as well as to restructure the economy to make it competitive in the world market. Despite some false starts, the stabilization program has been successful in reducing deficits and inflation since 1984. European Community assistance to Senegal has been primarily in the agricultural sector (livestock, water development, natural resources and institutional development). There are indications, however, that larger amounts of European Community funds will be apportioned to health and human resource development activities in the future.

The World Bank is currently involved in a large-scale youth employment program which was developed to offset the effects of required structural reforms. Along with the French, the World Bank is also involved in wide-ranging educational efforts. In addition, the World Bank is developing a new Human Resource Development Project which will include prominent health and population components. Lastly, the World Bank is currently developing a country-wide agricultural extension intervention which we will rely upon to contribute to the success of our efforts in the area of agricultural research.

On the bilateral side, France has ranked consistently as the number one (overall) donor, providing an average of $142 million per year during the 1980s, primarily in the areas of structural adjustment, agriculture, health, and education. Since 1985, Italy has rapidly expanded its assistance to Senegal (1985-88 average of $36 million) establishing itself as the fourth largest donor by 1988, with a primary focus in water development, agricultural research, integrated rural development and health activities. Japanese assistance to Senegal has also expanded rapidly since 1984, with Japan ranking 5th in overall assistance in 1988. Most of the assistance activities of Japan have been in small-scale rural development, rural water supplies, fisheries development and food aid. To date Japan's approach has been somewhat scatter-shot in type responding to requests and relying almost exclusively on the use of single-year financing. Several Arab countries, particularly Saudi Arabia and Kuwait, provide significant donor assistance to Senegal, mostly in areas related to the support and reinforcement of Muslim cultural and religious activities.

**Donor Coordination**. Given the multiplicity of donors, and the high level of resources involved, increasing efforts will be made by the Mission during the strategy period to improve donor coordination. While we have already had considerable contact and success with various donors through formal organized mechanisms such as the Club du Sahel, the World Bank Consultative Group, and the Senegal River and Gambia River Consulting Committees, we will stress revitalization of sectoral donor coordination meetings to be held on a regular and formal basis in the areas of our strategic focus such as family planning and natural resource management. In addition, USAID will stress the need for the World Bank to revitalize the Consultative Group mechanism for Senegal, which last met in 1987. This approach will build upon experience we have had to date both in banking sector reform and in negotiating reform of the agricultural sector. The Mission feels that far greater effort is required in this area and will produce concrete results at both policy and technical levels if carried out in a systematic and organized manner.

## IV. LESSONS OF EXPERIENCE

**Experience**. The long-term goal of USAID Senegal has been to increase per capita income and food security through an orderly process of financial stabilization, structural reform, and project activities in broad areas of agriculture, natural resources, health, and family planning. Although a reasonable degree of financial stabilization has occurred, it is evident that financial stabilization alone, and the limited structural adjustment that has

occurred to date, are insufficient to move Senegal onto a significantly higher growth path. Moreover, financial stabilization and structural adjustment are very broad goals which are beyond USAID's manageable interest operating on its own.

Although USAID programs and policy dialogue will continue to address macroeconomic issues, we will be more selective, focusing on those macroeconomic and policy issues that relate most strongly to our population and natural resources strategy. The proposed strategy stresses both the need to develop greater ownership of reform on the part of the Senegalese, and the need to build constituencies for reform from the bottom up. USAID has long sought to achieve three major objectives: (1) to promote a dynamic market economy; (2) to increase cereals production; and (3) to improve family health. Based on its recent experience, USAID has concluded that these objectives were also too broad, except in the sense that we contributed positively to government and other donor programs with compatible aims.

With regard to promoting elements of a market economy, our proposed strategy will now focus on those elements of private sector development that directly support our strategy to increase natural-resource based income or to decrease family size. Similarly, our recent experience (and our Agricultural Sector Analysis) suggest that the previous objective of assisting the government of Senegal to achieve 80 per cent food self-sufficiency was too broad, and was out of reach. Previous approaches failed sufficiently to focus on the negative effects of increasing cereals production in the short run without sufficient regard to maintaining a solid base of soil productivity, and also failed to focus on the complex and shifting production and employment strategies which rural households adopt to maximize income from available resources.

Both the government and USAID placed too much emphasis on increasing rice production in the Senegal River valley as a potential solution to Senegal's food deficit problems. This has proven to be a high-cost approach whose primary constraint is not land or water, but capital, management, and entrepreneurship. Senegal now requires interventions that are less capital and management intensive, with more reliance on initiative and decision-making at the local level. In the past, too much faith was also placed in the ability of regional development authorities (RDAs) to transfer technologies and inputs, and to "animate the peasants."

In general, USAID experience suggests that we were involved in too many geographic areas and too many activities (from agricultural production, to cereals pricing, to

water buffalo, to salt water distillation) to effectively manage and provide measureable impacts. In the past, the focus of our agricultural assistance, particularly our PL 480 I assistance, tended to shift over time without sufficient analysis or sufficient donor coordination. USAID has concluded that its program assistance, including its food aid, will have a larger impact in the context of a consistent multi-year framework as opposed to annual ad hoc programs. These multi-year programs can only be effective if discussion and understanding with the government of Senegal is thorough from the outset, and if coordination with the other donors has surfaced the major problem areas.

Although family planning remains inextricably linked with maternal and child health (MCH) activities, our experience suggests the need to focus on those elements most closely related to decreasing family size in order to achieve targets that are within our manageable interests.

**Activities to be Phased Out**. As a result of a planned series of evaluations, audits, sector assessments, program reviews, strategy seminars, and strategy discussions, USAID/Senegal will be phasing out selected agricultural, engineering, health, and technology transfer activities in order to more closely focus its program on its four new strategic objectives. Upon completion of two regional river basin planning and development projects (one in May 1991 and one in June 1992), no further regional river basin activities will be funded. Support of agricultural research focused on the Senegal River valley will be phased out, along with related activities in support of irrigated rice production in the Bakel region, and improved animal traction involving use of water buffalo. In the health sector, USAID will phase out support for special, targeted programs to combat malaria and to provide immunization services. Several small technology transfer and training activities will also come to an end including a simplified real estate tax cadastre in the town of Ziguinchor. As USAID narrows its focus on natural resources and population, housing activities will be phased out.

# V. PROGRAM LOGICAL FRAMEWORK

## A. Super Goal: Improved Quality of Life

The overarching goal of the U.S. assistance program to Senegal is to improve the quality of life of the Senegalese people through a process of long-term development that is equitable, participatory, self-reliant, and environmentally sustainable. Although Senegal has

returned to relative economic stability and improved growth, employment is not keeping up with the increase in the labor force, and economic growth and stability are threatened by rapid population growth and a deteriorating natural resource base. USAID has concluded that accelerated growth is a central issue, and that population growth and environmental degradation are long-term development problems that must be addressed in Senegal now.

Although Senegal receives substantial concessional assistance from its many foreign partners, USAID has concluded that self-reliant development in Senegal calls for increased mobilization of domestic resources, based on increased popular participation in decisions affecting both income creation and income distribution. At an early stage in its strategy development process, USAID concluded that a strategy of increasing private sector incomes would be preferable to alternative strategies for improving the quality of Senegalese life that emphasize increased delivery of social services; redistribution of existing wealth; or increased popular participation in a broad range of political, social, cultural, and economic activities. (See Annex I for the "objective-tree" regarding Strategic Choices).

Given government and donor budget constraints, USAID was skeptical of the sustainability and outreach of a strategy emphasizing increased delivery of social services, particularly if population growth and environmental degradation were allowed to go unchecked, and incomes began to decline. For related reasons, a strategy emphasizing redistribution of Senegal's limited and potentially declining wealth was also rejected. A strategy emphasizing increased popular participation in broad areas of Senegalese life was attractive and was debated long and hard. In the end the approach was thought to be too broad to be manageable, too difficult to monitor and assess, and perhaps too overtly political.

Given Senegal's democratic orientation, the need for self-reliance, the need for equity, and the need for sustainability, it was determined that democratic participation would remain as a principal cross-cutting theme of USAID's approach to increasing private sector incomes among selected target groups.

## B. Strategic Goal: Increased Private Incomes Derived from Natural Resources

The poorest of the Senegalese people, and the Senegalese people most deeply connected with the natural resource base which needs protection are the 61 percent of the people living in rural areas. In part because so many rural Senegalese are poor, and in part

because donor resources are not unlimited, USAID has concluded that increasing private sector incomes derived from the sustainable exploitation of the natural resource base has substantial merit as a program goal. (See Annex I for the "objective-tree" regarding the Summary of the USAID Senegal Country Program Strategic Plan).

An alternative strategy emphasizing increased incomes in the modern industrial sector was considered and rejected. This decision was based on the relatively higher incomes (and labor costs) in the sector, together with the existence of a number of other constraints including lack of raw materials, high energy costs, excessive bureaucratic controls, and an overvalued exchange rate. An informal sector strategy was also considered. Equity concerns made such a strategy an attractive option. The close relationship between growth in the modern industrial sector and growth in the informal goods-producing sector, however, limit the latter's development potential. Moreover, the informal services-producing sector appears to be fully saturated in terms of creating a significant number of new jobs. Increasing employment and income in the government and parastatal sectors were also considered and rejected as unsustainable and probably counterproductive.

A strategy based on increasing private sector incomes from sustainable exploitation of the natural resource base must take into account the sizeable value of home consumption in the rural household budget. In Senegal, a long-term shift from cash crops to lower-value food crops has contributed to the stagnation of value added in agriculture, as a growing rural populationhas sought to maintain food security in the face of relatively fixed yields,and fixed or declining land resources. As a result, in many cases it may be possible to increase the supply of cash crops in Senegal only by first increasing the supply of food crops. Increases in the value of trees and tree products may similarly be reflected in increased home consumption (or simply in the capitalized value of standing trees prior to their entering the marketing chain). USAID has been careful, therefore, to specify both a "marketed output" sub-goal, and a "home consumption" sub-goal, to its goal of increasing private sector incomes from sustainable exploitation of the natural resource base. Moreover given the complex interactions among population growth, degradation of the natural resource base, and income growth, USAID has added a third sub-goal to measure the increase in private income per capita derived from the exploitation of the natural resource base. This measure emphasizes that an increase in national or household income that is offset by an increase in national or household numbers is undesireable.

In light of the economic, social, and political realities outlined above, the USAID assistance strategy to Senegal is structured around four development objectives: (1) decreased family size; (2) increased crop productivity in zones of reliable rainfall; (3) increased value of tree production; and (4) increased liberalization of the market.

## C. Strategic Objective One: Decreased Family Size

**Rationale**. Rapid population growth and a deteriorating natural resource base are interacting to limit both economic growth and improvements in the physical quality of life. Senegal has already surpassed its human carrying capacity in terms of cereals production and in terms of sustained forest yields. Rapid population growth, fixed land in production, and fixed yields have already led to stagnation in the real value of crop production, and to a reduction in the real value of marketed crop production by one-half during the past 30 years. At the household level, as cash incomes fall, the ability to purchase food (especially during the "hungry season"), to purchase health and education services, and to invest in farm inputs has declined, so that the low productivity cycle is feeding upon itself.

At the national level, the slow growth of agriculture contributes to slow growth in the economy as a whole with negative implications for the budget and for investment in both the public and private sectors. Limited investments in health, sanitation, and education are limiting the physical quality of life, the quality of the labor force, and Senegal's overall international competi- tiveness. Partly as a result, Senegal faces a growing inability to employ its rapidly growing labor force in agriculture, industry, or government.

Given the important linkages among reduced fertility, improved health, improved education, increased labor productivity, and improved conservation of the natural resource base, USAID considered several options for reducing the population growth rate. Increased primary education for women, though an important factor, was outside USAID's manageable interest and financial ability to achieve during the 1992-97 time frame. Senegal has increased the legal age of marriage for women to 16 but is unable to enforce the law. Therefore, this factor seemed outside our manageable interest. Since the World Bank is considering a decrease in pronatalist incentives as part of its conditionality for the negotiation of the Human Resources Development Project, we chose not to duplicate this effort. On the other hand, USAID can exploit its considerable experience and comparative advantage by assisting Senegal to moderate its relatively rapid rate of population growth through the design and implementation of policies and programs to decrease family size.

**Strategic Objective Performance Indicator**. Through a well focused program to increase both demand and supply aspects of family planning services in the public and private sectors, USAID will assist the government of Senegal to achieve a decrease in family size as measured by a decrease in the total fertility rate from an average rate in 1986 of 6.6 children per woman at age 49 to a planned rate of 6.0 in 1996.

A comprehensive strategy to achieve a sustained decrease in family size in Senegal must address both demand and supply aspects of family planning through both public and private sector mechanisms, with significant differences in emphasis and timing between programs designed to benefit urban and rural clientele. Although only 39 percent of Senegal's population currently lives in cities and towns of 10,000 or more inhabitants, such urban areas are growing nearly twice as rapidly as rural areas. Because of urban/rural dichotomies in income levels, employment opportunities, literacy rates, breastfeeding practices, and fertility characteristics, the primary strategic focus will be on service delivery in urban areas. The more progressive demand for family planning in urban areas is complemented by the existence of more health facilities and personnel in both the private and public sectors permitting achievement of program targets in a cost-effective manner. In rural areas, demand for family planning services is currently at low levels, and existing health facilities and personnel are also more limited. The USAID population strategy, therefore, is strongly focused on urban areas in the short- to medium-term.

Based on the above considerations the USAID strategy for decreasing family size in Senegal includes two targets:

**Target No. 1**: Increased Use of Modern Contraceptive Methods in Urban Areas (Benchmark Indicator: Urban contraceptive prevalence using modern methods will be increased from 6.7 percent of married women of reproductive age in 1986 to 20.0 percent in 1996); and

**Target No. 2**: Increased Awareness of Modern Contraceptive Methods in Rural Areas (Benchmark Indicator: Knowledge of modern contraceptive methods will be increased from 58 percent of married women of reproductive age in 1986 to 75 percent in 1996).

**Urban Strategy**. Increased use of modern contraceptive methods in urban areas will require that current demand for family planning services be met through improvements in both the availability and quality of maternal and child health (MCH) and family planning services. Although increased availability of services and improved quality will in themselves increase the demand for family planning services, additional steps must also be taken in Senegal's traditional, Islamic, ethnically diverse society to increase knowledge of contraceptive methods and benefits, and to validate people's changing perceptions of modern family planning through increased advocacy by senior political and religious leaders. It will also be important to gain acceptance of family planning as a routine part of public health by integrating family planning with MCH services. Examples might be evaluation of pregnant women for high risk factors, treatment of sexually transmitted diseases, and health education stressing exclusive breastfeeding for four to six months (as a means to decrease diarrheal disease among infants and as a means to reinforce the natural contraceptive benefits of breastfeeding). In addition, a decrease in the desired family size must also occur based in part upon changes in perceptions regarding the likelihood of increased child survival (primarily through decreased infant mortality from diarrheal disease and neonatal tetanus). Therefore, MCH interventions, and activities focused on diarrheal disease, form an important of our strategy.

On the demand side, the USAID strategy considered several other options. Reducing the demand for child labor and increasing female incomes were considered to be outside our manageable interest and would not have helped focus our activities. However, USAID will utilize information, education, and communication techniques to expand knowledge of modern contraceptive methods to 95 percent of urban married women. Specific materials and approaches will target the general population, women, men, health care providers, and health care service points, including maternities. To accelerate the changes in attitudes that are already taking place, USAID will work with senior government and religious leaders to markedly increase the number of urban residents who report having heard commentary on population matters from these high-level sources. The above interventions are expected to collectively contribute to a planned decrease in desired family size in urban areas from 5.5 children in 1986 to 4.0 children in 1996.

By the end of the strategy period, USAID expects that every population center in Senegal of more than 10,000 inhabitants will be covered by maternal and child health/family planning service delivery points in proportion to its population, and that the quality of services will have improved, as indicated by measured increases in contraceptive continuation rates.

In the public sector, this increased coverage will require substantial government and donor resources to renovate and expand existing service points, to build some new service points, and to finance family planning commodities. In addition we intend to overcome the constraints in logistics management and commodity distribution. Improvements in the quality of services would result not only from the increase in the quantity of resources, but also from improved management and supervision of maternal and child health/family planning services, and through specialized training of doctors, midwives, and nurses.

In the private sector, the number of clinics and private practices offering family planning and MCH services will also be increased. This effort will be supplemented by the utilization of private sector distribution networks in the "social marketing" of contraceptives. "Social marketing" implies initial subsidization of relatively high-cost family planning commodities procured in the U.S., as well as initial subsidization of information and advertising campaigns. Private sector approaches are expected to make a significant and cost-effective contribution to the overall efforts to increase use of modern contraceptive methods, although there are limits on the ability of the private sector to reach all strata of urban society.

In selecting activities to decrease infant mortality in both urban and rural areas, we considered interventions for acute respiratory infections, vaccine-preventable diseases, diarrheal disease and maternal health. The follow-up system for paramedical personnel implementing respiratory disease treatment protocols is as extensive as that required to maintain high levels of vaccination coverage. Since Senegal has yet to achieve this latter capability, it would be a disservice to overload the system with a new activity. The immunization program has been entirely supported by the Italians through UNICEF so we chose not to duplicate these efforts, with the exception of stressing tetanus toxoid as part of maternal health services. Oral rehydration therapy has proven an effective intervention to decrease mortality from dehydration resulting from diarrhea and USAID has pioneered in this work providing an extensive background upon which to build. The high risks associated with pregancy in Senegal are well demonstrated by the estimated range of maternal mortality: 550-2,000 maternal deaths per 100,000 live births. Family planning is a direct intervention for maternal mortality as well for infant mortality and must be linked to the evaluation of high risk pregnancies by paramedical personnel.

**Rural Strategy**. During the period 1992-97, the USAID family planning strategy in rural areas will concentrate on assisting the government of Senegal to increase awareness

of the benefits of modern contraceptive practice. As in urban areas, one approach will be to employ information, education, and communication techniques, particularly to increase knowledge among mothers of the benefits to themselves and their infants of increased child spacing. Mobilizing government and religious leadership in the effort to accelerate changes in attitudes will be even more important in rural than in urban areas. Moreover, grassroots understanding and support among traditional healers and local leaders must be mobilized through information, education, and communication campaigns. The aim is to reach half of such traditional healers and leaders by 1997, and in turn, for them to reach half of the local population with family planning messages by the same date. As family health delivery services improve and place increased emphasis on reducing infant mortality and improving maternal health, and as the other elements of the program begin to have their impacts, the desired family size in rural areas is projected to decline from 7.6 children in 1986 to 6.6 children in 1996.

## D. Strategic Objective Two: Increased Crop Productivity in Zones of Reliable Rainfall

**Rationale**. Despite the limitations of its natural resource base, Senegal still has significant unexploited agricultural potential particularly in its southern half where reliable rainfall totalling 400 mm per year is available in four years out of five. The relatively low cost and potentially widespread impact of interventions based on rainfed agriculture are in contrast to the high cost and limited impact demonstrated by the capital-intensive irrigation activities attempted in Senegal to date. Despite the existence of a well adapted cash crop (peanuts), and the ready availability of imported rice, Senegalese farmers have demonstrated a preference for attaining at least a minimal degree of food security based on home production and consumption, before continuing or expanding cash cropping.

Even in southern Senegal, however, bringing new land into production, and more intensive farming of existing land to expand food and cash crop production, call for intensive measures to protect the productivity of the soil from erosion. Within a limited geographical area of reasonable agricultural potential, and by focusing on increased crop productivity where it has both experience and a comparative advantage, USAID can make a significant and sustainable contribution to meeting Senegal's requirements for increased rural incomes and improved food security.

In considering "what else" could contribute to increasing income based on natural resources, rainfed agriculture in the northern half of the country which receives less than

400 mm of reliable rainfed was excluded because agriculture in this zone is extremely marginal. The entire zone is highly vulnerable to wind erosion and a portion is too dry to support crop cultivation although it is farmed continuously. Due to the advanced stage of soil degradation and high population densities, developing sustainable production systems is more difficult, and more risky, and pay-offs are likely to be lower and further into the future than in the more favorably endowed zone to the south. Irrigation was excluded owing to its demonstrated high cost in Senegal, the existence of formidable management and organizational constraints, and the desirability of maintaining a tighter geographic focus.

Another "what else" decision excluded several cash crops from the strategy. Statutory and Agency policy guidance discourage support for peanuts and cotton, the principal cash crops in our zone of intervention. In both cases the commodities have long been supported by the French who maintain an active interest in research, processing and marketing. USAID has no comparative advantage to work on these crops in Senegal. Fruits and vegetables were not considered as a possible strategic objective, but were considered as a possible target of opportunity. However, they are produced in the Senegal River valley and in the coastal zone north of Dakar (i.e. outside of our zone of intervention), have only modest growth potential, and are too minor and geographically specific to provide a basis for broad-based economic growth and development.

Livestock and fisheries were also excluded from this strategy for similar reasons. The livestock sector has performed relatively well without extensive donor assistance over the recent past. USAID's own experience in Senegal has not been encouraging; a livestock project was terminated in the early 1980s having largely failed to achieve its objectives. This is consistent with A.I.D's experience elsewhere in Africa where it has had limited success in the sub-sector. Marine fisheries are economically important and the sub-sector has been quite dynamic over the last decade. France and Canada provide extensive assistance to this sub-sector while USAID has no experience in Senegal. Thus USAID has no comparative advantage in these sub-sectors and other donors are well established.

**Strategic Objective Performance Indicator**. Through a combined program to increase both soil productivity and the use of adapted technology, USAID will assist the government of Senegal to increase production of cereals in zones of reliable rainfall from an average 1989-90 baseline level of 1,000,000 metric tons to a planned 1996-97 level of 1,300,000 metric tons. Productivity increases would be measured on an estimated 200,000 hectares of affected land, and would be net of some productivity losses that would otherwise be expected to have occurred.

USAID's strategy to assist the government of Senegal to increase crop productivity in zones of reliable rainfall must address and reverse a long history of declining soil productivity, and must accelerate the development and introduction of technologies adapted to local soil, water, wind, and cropping conditions. Senegal's rural labor force has been increasing steadily both in quantity and in quality during the 30 years since independence, and a number of technological innovations have been developed, adapted, and introduced. Nonetheless, with soil productivity in broad areas of the country declining by some three to five percent per year, yields for major crops have stagnated. At the same time, the opening up of new lands has been largely offset by the loss of existing land through declining rainfall, and through erosion, especially wind erosion.

The quantity and quality of Senegal's soil resources must begin to receive increased attention now or the battle to increase yields will continue to be stalemated. Maintaining and expanding the area under cultivation in Senegal is possible, but both old and new areas must be carefully protected from physical erosion, and from decreased water infiltration owing to deteriorating soil structure and cover. Once the physical quantity of the soil is stabilized, and the soil's ability to hold water and deliver nutrients is assured, the payoff from the introduction of complementary modern technologies will also increase. This complementary approach requires a continuing stream of crop production technologies that are well adapted to zones of reliable rainfall in Senegal. It requires improved management and expansion of the traditional extension service, and expansion of the technology transfer capabilities of grassroots organizations operating in rural areas including PVOs, NGOs, and G.I.E.s.

This strategy is based on the conclusion that improved resource management (soil, water, vegetative cover) is the key to increasing soil productivity and developing more productive and sustainable production systems. Crop breeding is one "what else" that was excluded. Instead, the Mission opted for screening and evaluating genetic material developed elsewhere. This low-cost strategy can produce acceptable returns on varieties that are found to give superior yields in association with improved resource management practices. Another "what else" decision resulted in rejecting reliance primarily on conventional inputs to increase productivity. Farmers have been reluctant to use fertilizer and other purchased inputs in rainfed agriculture that were not heavily subsidized. Research in Senegal shows that such inputs give the best economic returns when used in zones of higher rainfall and where soil moisture and organic material content are higher.

Thus these inputs may effectively complement improved resource management techniques in the strategic zone of intervention.

Based on the above considerations the USAID strategy for increasing crop productivity in zones with reliable rainfall in Senegal includes two targets:

**Target No. 1**: Increased Soil Productivity (Benchmark Indicator: An additional 45,000 rural households in regions of reliable rainfall adopt some form of technology to improve soil productivity by 1997); and

**Target No. 2**: Increased Use of Adapted Technology (Benchmark Indicator: An additional 45,000 rural households in regions of reliable rainfall adopt some form of improved agronomic practice or begin using improved inputs by 1997).

With regard to benchmark indicators for Targets 1 and 2 above, rates of adoption of technology have been chosen as proxies for the much more difficult to collect and much more expensive biophysical measurements that might have been proposed. The reasonably close cause and effect relationships between the adoption of soil conservation technologies and ultimate biophysical improvements is one reason for this choice; a second reason is lower cost; and a third reason is the more obvious linkage to people level impacts.

**Soil Productivity Strategy**. Increasing soil productivity in zones of reliable rainfall in Senegal will require a major effort to directly reduce soil erosion from wind and water through the planting of windbreaks, and through improvements in watershed management. Given the moderate quality of available soils, and the relatively high variability of rainfall even in the southern portion of the country, emphasis must be placed on increasing the ability of the soil to absorb and retain water and to make nutrients available to plants. This will involve improvements in soil structure primarily through the introduction of improved land preparation techniques, increased use of agro-forestry methods, and increased retention of organic matter in the soil. Improved watershed management will also be required, however, and will represent the major linkage between the soil erosion and water infiltration approaches utilized to improve soil productivity.

Improving soil productivity in zones of reliable rainfall in Senegal is an enormous task which can only be begun during the 1992-97 period given the necessity to strengthen the existing extension service, and to increase the technical ability and outreach of PVO, NGO,

and G.I.E. organizations. By the end of the strategy period, USAID expects that 15 percent of the estimated 300,000 rural households in zones of reliable rainfall will have adopted some form of technology to improve soil productivity. This would provide protection from wind or water erosion for a planned 40,000 hectares, and would result in improved water infiltration for a planned 175,000 hectares, with some land benefitting from both approaches. Total coverage of more than 200,000 hectares would address some 15 percent of the nearly 1.4 million hectares currently under cultivation in Senegal's zones of reliable rainfall.

**Strategy to Increase Use of Adapted Technology**. A strategy to increase use of adapted technology in Senegal's zones of reliable rainfall will require a major strengthening and redirection of the country's major agricultural research institution (ISRA). It will also require substantially strengthened linkages among ISRA, the private sector, the extension service, and grassroots organizations that are capable of cooperating with ISRA in adaptive research and in transferring adapted technologies to the field in significant quantities. A large part of the effort to strengthen the extension service will be supported and financed by the World Bank through its proposed, large-scale extension project (PNVA).

USAID does not propose an additional large-scale extension effort, but will coordinate with the extension service and with the World Bank to maximize the compatibility of the Bank's proposed "training and visitation" methodology with the farming systems and agro-forestry approaches inherent in the USAID strategy to increase crop productivity. Moreover, USAID intends to work closely with ISRA to increase its cooperation with grassroots organizations and the private sector. By the end of the 1992-97 period, ISRA will be working with a planned 15 farmer organizations, NGOs, PVOs, G.I.E.s, or private sector firms. Technologies to be transferred will include improved seeds, improved cultural practices, improved tools and equipment, and increased use of manufactured fertilizers. The purpose of collaboration would be to increase the quantity, quality, and timeliness of technologies and information shared with rural households.

## E. Strategic Objective Three: Increased Value of Tree Production

**Rationale**. Given the high susceptibility of Senegalese soil to erosion, particularly wind erosion, the productivity of Senegalese agriculture is tied to a continued and increased integration of agricultural and forestry technologies. Although conservation and planting of trees has a positive effect on the value of crop production, this effect is often only apparent in the long run, and is sometimes only preventive in nature. Given these considerations and

the requirements of rural Senegalese households for increased income and for increased access to tree products, a separate strategic objective has been adopted regarding an increase in the value of tree production. Emphasis is on income generation from tree products in order to maximize sustainability of tree conservation and planting activities, but some of the activities will also have positive indirect effect on reducing erosion and increasing soil productivity. Since increased tree production often results in significant externalities where benefits may accrue beyond the boundaries of individual or community plots of land, the necessity for information, education, and communication campaigns, incentive structures, and support for research, development and extension also argue in favor of a separate strategic objective for increasing the value of tree production.

Given the potential contribution trees may make throughout Senegal to family income from tree products, to environmental stability and, indirectly, to crop production, this objective is not limited to a particular geographic zone. However, large-scale commercial forestry has been excluded from the strategy on the grounds that currently it is of negligible importance; it has limited potential; and it offers no appreciable prospects for broad-based growth, even over the long-term.

**Strategic Objective Performance Indicator**. Through a combined program both to plant more trees and to conserve existing trees, USAID will assist the government of Senegal to increase the value of tree production by $2 million annually in project areas by the year 1997 attributable to the USAID program. This implies an increase in income of $40 per household for approximately 50,000 participating households.

The USAID strategy to assist the government of Senegal to increase the value of tree production relies on both increased planting of trees and increased conservation of trees to address Senegal's serious problems of erosion and deforestation, to protect and expand rural incomes, and to reduce the labor time involved in gathering fuelwood (particularly for women and children) in rural areas. The strategy addresses both demand and supply aspects of increased tree production recognizing that the sustainability of program efforts requires both an increased understanding of the indirect value of tree production, as well as direct incentives and benefits. USAID has had important and positive experience in Senegal in promoting the planting of trees, particularly through reliance on the private sector and local community groups. The enthusiastic response to date is an indication that information, education, and communication techniques, combined with the seriousness of the underlying environmental problem, can generate a significant demand for tree planting materials. This demand must be encouraged and met through an expanded network of

private nurseries and through an expanded program of research and extension of improved propagation and management techniques.

Given the magnitude of Senegal's erosion and deforestation problems, however, it is evident that planting trees can only be a small part of the solution. It is clear from field trials that natural regeneration of native trees and grasses can make a significant contribution to the well-being of the farm household particularly where erosion control, increased soil productivity, and increased fuelwood production are the primary goals. Similarly, natural forestry management techniques can make an important contribution to increasing the value of tree production in national or local forests. Household income from improved management of public and community forests may be significant.

Based on the above considerations, the USAID strategy for increasing the value of tree production in Senegal includes two targets:

**Target No. 1**: Plant More Trees (Benchmark Indicator: 3,000,000 trees planted and surviving attributable to the A.I.D. program by 1997); and

**Target No. 2**: Increased Conservation of Trees (Benchmark Indicator: 200,000 hectares of land protected and managed to permit regeneration of trees).

**Plant More Trees**. Increasing the incentives to plant trees in Senegal will require improved knowledge among farmers, improved government policies, and improved markets for tree products. USAID intends to expand its information, education, and communication campaigns to improve knowledge among farmers of the benefits of trees, while mobilizing NGOs and local organizations to assist in training and technology transfer (in addition to the actual planting of trees).

Although a good deal of progress can be made utilizing these methods alone, the incentives to plant trees can be significantly improved through policy dialogue and policy change designed to increase individual control over natural resources in general, and to improve "tree tenure" rights in particular. Senegal's 1990 draft Forest Code includes recognition in law of private property rights over trees that farmers plant on their farms. This draft law will now have to pass the National Assembly, and implementation regulations will have to be drafted and enforced. Changes or extensions of the law may also be required

based on reactions of farmers and local organizations to initial attempts at enforcement of the new law and its implementing regulations.

Beyond such measures, the USAID strategy seeks to improve the incentives to plant trees by improving the marketing of tree products. Deregulation of the markets for tree products is one element that should act to reduce marketing margins. A second element will be the establishment of a market information system emulating the successful system that reports on grain prices. A third element will include the strengthening of regional markets for tree products and improved promotion of high-value tree products (e.g. cashews) for domestic and overseas markets. As incentives to plant trees improve, USAID expects that 100,000 additional farmers will have planted trees in zones of USAID intervention by 1997.

This strategy for increasing incentives to plant trees excludes several options. USAID will not work on grades and standards nor on storage and processing. These interventions pertain largely to developing external markets for fruits and nuts. Other donors have more experience with these commodities (the Germans with regard to cashews; the British and the Belgians with regard to fruit trees) and such activities are peripheral to the mainstream of our strategy. USAID will leave public sector forestry extension services largely to the World Bank with its training and visitation extension project. USAID's strategy will be to work with NGOs and farmer organizations to promote tree planting.

While improved incentives are the major focus of the USAID strategy to plant more trees, increased availability of technology will also be important. As in the case of food crops, ISRA will play an important role. The first step to be taken is to define a research agenda that reflects revised priorities, including the integration of tree, crop, and livestock research. The second step will be to establish a well-targeted forestry research program whose budget, personnel, and research methodologies reflect the revised priorities. With institution building in hand, USAID expects that approximately seven technologies or technological packages will have been developed and tested "off-station" by 1997.

**Increase Conservation of Trees**. Increased conservation of trees in Senegal requires programs to protect existing and newly planted trees, and to increase natural regeneration of trees in farmers' fields and in forests. At the policy level, the incentive to conserve trees must be improved through changes in legislation and regulations that recognize the private property rights of individuals and organizations that take actions to conserve trees. As is the case with the planting of trees, USAID sees such policy changes

as an important factor contributing to its ability to increase community participation in the management and protection of trees. USAID's approaches to increasing the number of villages and local organizations involved in the protection and management of public lands, forests and parks will parallel the approaches adopted for increased planting of trees. USAID expects that approximately 25,000 additional farmers will be involved in natural regeneration and natural forestry management practices in zones of A.I.D. operations by 1997.

## F. Strategic Objective Four: Increase Liberalization of the Market

**Rationale**. USAID's strategy to encourage further liberalization of the market for natural resource-based production recognizes that increasing incomes for producers will require not only increased production but also increased demand for that production and better access to markets. We considered the factors that would contribute to increased demand--increased efficiency of processing, better dissemination of market information, and improved transport and storage. Most of these "what elses" require investment in new technologies. We thought that such investment could come best from the private sector. After having already invested heavily in processing sub-projects for millet and cowpeas, we had learned that technology was not the only critical constraint, but that pricing and access to markets imposed severe limitations on demand. We also questioned whether we had any comparative advantage to bring to transport and storage, areas where other donors such as the Canadians had been active.

In reviewing factors affecting demand and access to markets, we looked long and hard at the overvalued rate of exchange. All prices in the Senegalese economy, including all agricultural prices are affected directly or indirectly by the overvaluation of the CFAF. Either a devaluation by the Central Bank of the West African Monetary Union should be encouraged or separate policies to approximate a devaluation should be put into place by the Senegalese government, i.e. uniformly taxing all imports (e.g. rice) and subsidizing all exports (e.g. groundnuts). We felt that, although we could encourage a revision in the exchange rate, we are unable to address this issue on a bilateral basis and it must be dealt with on a regional basis by A.I.D. Washington for the entire CFAF zone.

We elected, therefore, to focus on efforts to increase private sector activity and to decrease government regulation, both key factors in increasing access to markets. To do so is to buck Senegal's long history of centralized controls, paternalism and suspicion of the

market. Yet, decreased government regulation of marketing and pricing decisions can contribute significantly to increased private sector activity and income generation in rural areas. On the other hand, the private sector must develop the capacity to perform key production, marketing, and service functions in order to fill the gap left by the government's withdrawing from these activities.

A step-by-step process of liberalization is underway. As mentioned earlier the government has removed price controls on all but thirteen goods deemed essential or strategic. But it remains involved in marketing some commodities which are central to our strategy. Of particular concern to us are the distortions in cereals markets resulting from controls on rice. The effect is to provide heavy protection to rice where Senegal has no comparative advantage and a low or negative protection to millet, sorghum and peanuts where it does. Further liberalization of rice prices and markets will be required not only to improve allocation of resources in production of these crops, but also to increase rural incomes by reducing marketing and processing margins. In addition, energy prices are too high due to government controls and perequation taxes, blocking the development of industry and leading to excessive use of charcoal and tree cutting for fuelwood. Energy prices should be reduced.

At the same time, with 30 percent of industry linked with agricultural sector production, increased private sector activity is necessary both to encourage liberalization of markets and to take advantage of opportunities created by the liberalization process. Historically, business groups have failed to play a lobbying role for change, and businessmen complain that reforms such as the New Industrial Policy have been instituted without sufficient consultation with their representatives. Better collaboration on reform between the private sector and the government would provide impetus for fresh changes and for more effective implementation of reforms once enacted.

**Strategic Objective Performance Indicator**. Through a process of decreased government regulation and increased private activity, USAID will assist the government of Senegal to increase the value of crop production marketed by the private sector from 46 percent of total crop production in 1989/90 to 56 percent in 1996/97, principally through privatization of the marketing of domestic rice production. Success in privatizing rice marketing will be one indicator of a more general liberalization effort under discussion within the context of the multi-donor, multi-year Agricultural Structural Adjustment Program Grant. Market liberalization progress in oil peanuts, confectionary peanuts, or cotton could expand

the private sector marketing of crop production beyond the 56 percent targeted for 1996/97.

Achieving the targeted performance assumes that donor resources will continue with some improved availability of government budget revenues to offset revenue losses and lost subsidies inherent in the above reforms and to assist in "compensating" program losers (largely parastatal and rural development authority managers and employees).

**Target No. 1**: Increase Private Sector activity (Benchmark Indicator: Increase in the number of private traders, transporters, and processors of cereals and wood products above a baseline to be determined by special studies carried out early in the CPSP period).

The Mission considered several approaches to increasing private sector activity. It decided that its primary effort will be in strengthening business associations and organizations to enable them to carry on a more effective dialogue with government on marketing issues and to provide better services to their own members. Development of policy options for discussions with government and defense of legitimate business interests will require additional training and research capabilities. Increased training sessions, programs, presentations, conferences, studies, and (ultimately) prepared position papers dealing with policy issues would be some of the indicators of an increased ability by business organizations to deal effectively with policy issues.

The strategy also seeks to increase popular participation in policy reform through support for community organizations. The growing number of NGOs, and the increased government and donor interest in having NGOs assume responsibility for mobilization and training in rural areas, make NGOs extremely important as resources for project implementation, and as interlocuteurs between villagers and the government on policy issues. Many NGOs, however, need help in training staff and building analytical and management capacity. Others simply lack funds to carry out their project ideas.

**Target No. 2**: Decreased Government Regulation (Benchmark Indicator: Privatization of marketing and pricing of rice and elimination of rice transport subsidies).

In addition to strenthening business associations and organisations to carry on a sustained and meaningful dialogue with government on policy issues, the strategy to

liberalize markets also seeks to develop a more effective dialogue among aid donors, and between the donor community and the government, on policy issues relating to liberalized markets. Most of the pricing, marketing and processing issues are already on the table in the context of the World Bank Structural Adjustment IV Credit, the IMF Enhanced Structural Adjustment credit, and the multi-donor Agricultural Structural Adjustment Program. USAID will work toward the establishment of a more formal donor coordination mechanism with regular and frequent meetings that are targeted to produce up to three signed multi-donor agreements with the government on market liberalization issues through the 1997 period. Privatization of the marketing and pricing of rice, and elimination of rice transport subsidies, would be clear indicators of successful dialogue among donors, the private sector and the government.

The Mission considered a number of other areas of government deregulation in addition to pricing and subsidies including preferential licensing, privatization of parastatals and increased tax equity. All of these are important. The French, the World Bank and the Canadians are all engaged in providing advice on privatization. Our comparative advantage and Senegal experience in privatization were limited. We have already given our best shot on the tax equity issue (ESF VII) and are following up with training. Preferential licensing issues are extraordinarily political. We have touched on these issues in previous ESFs, regarding wheat and sugar. In neither case were we particularly effective. We have had success on subsidies (fertilizers) and prices in the past, and consider that replicating this succesful dialogue process can produce a measurable impact on marketing of cereals and wood products.

## G. Gender-Differentiated Impacts

Throughout its programming, USAID is examining gender issues and making a specific effort to increase women's productivity, income and opportunities. Much of our portfolio under the new strategy concentrates on increasing incomes in agriculture where women play a major role in cultivation, harvesting and processing. Women will be the prime targets and beneficiaries of our health and family planning programs--although future programs will also emphasize the importance of involving men in family planning. Women will be key participants in the private voluntary organizations in which we work.

The Mission is taking a number of steps to institutionalize its effort to integrate gender considerations into its overall program. Developing the data to track gender issues will be

one major challenge. We are building requirements for gender-disaggregated data into project designs and have used the Gender Resources in National Development (GRAND) project to strengthen government awareness of the importance of such data. We provided WID training to all Mission project officers and are now refining a WID action plan drawing from studies on the role of women in agriculture, health, education and the private sector as part of the CPSP process. Finally, to assure that the Mission has sufficient personnel to carry out its WID action plan, we are upgrading the position of the WID officer and recruiting for a Senegalese sociologist/anthropologist to serve as a full-time advisor to the Mission on design and evaluation, paying particular attention to gender issues.

While not focusing exclusively on women, USAID will consider the role of women in all evaluations and in each new project design. Women will play an important part in the new natural resource management program. Women collect firewood, grow gardens, cultivate crops, plant and protect trees--and women's groups can play an active role through their village organizations and in agricultural research on natural resource-based cropping systems. They are already involved in reforestation through the matching grant program, and the new PVO/NGO Support Project, scheduled to begin in the fourth quarter of FY 1991, will provide direct support for non-governmental organizations, many of them women's groups.

The role of women in our health and population projects, particularly as beneficiaries, can be complemented by targetted training of women for administrative and extension positions. We have had significant success in raising the numbers of women participants in our training programs in rural sociology, soil sciences, agricultural economics, couputer sciences and financial management. More than 60 percent of short-term and 30 percent of long-term participants sent in recent years have been women, and these numbers can be increased.

## H. Targets of Opportunity

In addition to its strategic objectives, the Mission may develop two or three targets of opportunity during the course of the CPSP period. They include: Human Immunodeficiency Virus, democratization, and credit.

**Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS):**

In December 1986 the first six HIV/AIDS cases were reported in Senegal. As of October 1990 there were 425 reported cases. Less than one per cent of the general population is estimated to be sero-positive, but the rate among high risk groups varies from five to 38 per cent depending on the geographic location.

The government and the donor community have conducted an active fight against HIV/AIDS from the beginning. The AIDS research protocol that has existed since 1985 among Harvard University, Dakar University, and Limoges and Tours Universities in France has contributed to this effort. The Dakar University Hospital lab has a strong international reputation for AIDS research and has been designated as a World Health Organization Regional Reference Laboratory. The Ministry of Public Health and Social Action has completed medium- and long-term plans for HIV/AIDS control with support from the World Health Organization's Global Program on AIDS.

Senegal is one of the few countries in Africa where early programs to sensitize the population about HIV/AIDS may have a chance to retard the advance of the epidemic. As a complement to and an integral part of ongoing maternal and child health/family planning activities, USAID will continue to support HIV/AIDS activities through training, commodity support, selected technical assistance, and information, education and communication activities.

**Democratization**. One of Senegal's greatest assets is its functioning democracy and its (relatively) strong democratic traditions--free and open elections, a multiparty system, a free press and an independent judiciary. A number of USAID activities support these traditions particularly in the areas of governance and popular participation. The 1990 amendment to the Rural Health Delivery Services II/Child Survival Project, for example, emphasizes the importance of decentralized planning and increased regional accountability. The new PVO/NGO Support project will strengthen Senegal's growing number of independent, non-government organizations and their ability to represent villagers' interests and concerns. The forestry project works with village organizations and farmers' groups to emphasize local participation, choice, and control of natural resources. Our training program sends business leaders to the United States on observation tours--including a look at the lobbying role of business--and has scheduled a trip for judges to look at civil rights administration.

We have begun to develop a process for weaving these individual activities into a more coherent strategy. During the first part of the CPSP period, we will be looking closely at our portfolio and at opportunities to increase our impact on the governance and participation issues. A key area directly related to our strategic concentration on natural resource management (and one that is likely to be at the center of a Mission democratization strategy) is improved local decision making. We have already begun studies on the role of local government and institutions in decisions involving natural resource control and management. We have established a linkage with the local institution responsible for training rural administrators, and may well provide opportunities for further training under our training project. Should these initial efforts prove successful, USAID may want to develop a democratization initiative aimed at improving local planning and managemert.

**Credit**. A constraint on private sector activity has long been the lack of credit. The banking sector has suffered major cutbacks, and establishing a significant credit program in the Senegalese environment has been difficult, despite recent efforts at reform. The closing of the Agriculture Production Support Project this year, after three years of trying to mount an agricultural credit program, is evidence of this.

Nevertheless, credit is important to increase private sector activity, to increase demand for natural resource-based products, and to provide savings for rural investments. Two small pilot experiments nurtured by USAID have been encouraging. The Community and Enterprise Development Project has provided $5 million to more than 1,000 enterprises with a recovery rate of 95 percent and revenues that now cover half of operating costs--despite a major expansion in the last year. Under its training project, the Mission has been financing a local private voluntary organization developing village credit unions. Both initiatives are scheduled to be completed early in the CPSP period. Both, however, provide support to the private sector, often in areas directly related to natural resource production. They also generate data and experience important to government efforts now underway to revise legislation affecting financial intermediation. Consequently, although credit is not one of the Mission's current strategic objectives, credit activities may well be continued during the CPSP period.

# VI. MANAGEMENT CONCERNS

## A. Program Management

**Phasing and Design of the Program**. The new strategy will be implemented with a combination of program, project and food aid. Resources available under the Development Fund for Africa (DFA) will be utilized to support ongoing activities in the areas of agriculture (watershed management, reforestation, agricultural sector grant, and agricultural research), banking reform, and PVO/NGO support until these efforts terminate mid-way through the strategy period. A major population and family health intervention will be developed following an evaluation of the Mission's two ongoing health activities in FY 1991. Implementation of this major health activity will begin in FY 1992. Starting in FY 1993 a major Natural Resource Management/Environmental intervention will be developed as a follow-on to our current efforts in reforestation and agriculture research. In FY 1994, a major new intervention focusing on water management and environmental concerns is envisioned as a follow-on to the Southern Zone Watershed Management activity which will be phasing out. A social marketing activity will also be developed in FY 1994 in conjunction with progress made under the population/family health activity.

On the program side throughout the strategy period, Economic Support Fund (ESF) and African Economic Program Research (AEPRP) resources, will be utilized, primarily as budget support to encourage the government of Senegal to liberalize markets and to continue privatization plans. This will complement tax and regulatory reforms already adopted by the Senegalese government, and will permit enterprises to make more rational investment decisions and improve growth prospects. Food aid will be used throughout the strategy period to help cover the national food deficit, to stimulate policy changes in food crop pricing and marketing, and to provide local currency for programs developed under USAID's strategic objectives.

**Major Program Design Issues**. The phasing-in of the interventions mentioned above will require careful consideration of design issues as they are developed. Some of the more pertinent of these are included below:

- **Population/Family Health** An effective population/family health strategy for Senegal requires a continuing reorientation of the attitude in the Ministry of Public Health and Social Action (MPHSA) toward providing preventative health care and toward improving health

care management skills. Although some progress has been made in this area, it remains to be seen whether the Ministry has the long-term commitment to undertake the reforms necessary to effect sustainable results. Equally important is whether the government is committed to managing the population growth rate. To date, there has been limited senior leadership support for family planning and family size limitation. Another issue is the level of management, planning, and financial support for maternal and child health services that is necessary in order to adequately support family planning services.

- **Natural Resource Management/Environment** A new intervention will follow our current Reforestation project which ends in 1993. The new project will seek to promote our strategic objective of increasing the value of tree production, and will need to address issues pertaining to agro-forestry development and natural regeneration. Some of the most important issues are indicated below.

-- What are the most appropriate institutions: local government, informal village structures, farmer organizations, non-governmental organizations, etc? How can they best be strengthened? What is their appropriate relationship with state institutions?

-- What kind of incentives are most necessary and effective to promote agro-forestry development and natural regeneration?

-- How do traditional and modern tenure "rules" influence resource management? What kinds of tenure reforms are feasible or desirable to improve natural resource management?

**Monitoring and Evaluation Plan**. The Mission recognizes monitoring and evaluation as critical to the success of its assistance portfolio and important to ensuring continued support for its program. Monitoring of the portfolio will be accomplished in a number of ways: in-depth reviews of all project, financial, and administrative activities will be conducted by all Mission offices on a six week rotational basis; formal project committees have been established and will continue to meet on a regular basis to discuss project issues/problems; and an extensive audit program incorporating in-house financial reviews, non-federal audits, and audits by the Regional Inspector General will be continued.

The Mission is establishing a major monitoring program to gather the data necessary to measure the progress made in advancing program goals and objectives during the strategy period. Monitoring the objective indicators for all levels from goal to subtargets as

presented in Annex I requires the development of an extensive data system in the Mission. Upon acceptance of the strategy, the Mission will initiate the process of collecting the required baseline data where not already available. In the population sector, prior studies provide an adequate base to begin to track progress, but some baseline data for the crops, trees and marketing portions must still be collected. As Annex I demonstrates, indicators for lower levels of the objective tree have been identified and the collection of that data will be built into programs and projects arising from the strategy. Program Development and Support funds will be used in FY 1991 and 1992 to establish data systems and to do the baseline analyses required. Future year funds will be used for annual data updates as required.

The Mission will develop an evaluation schedule each year during the strategy period and anticipates being able to conduct one major impact evaluation and 2-3 project evaluations per year.

**Research Agenda**. The Mission will be reinforcing its monitoring and evaluation capability by carrying out the following types of studies during the strategy period.

- Economic Research and Analysis. At the macroeconomic level, the Mission will carry out studies on pricing subsidies, revenue collection and reform, and public sector expenditure mechanisms in order to help the government of Senegal to improve the quality of its investment decisions. In addition, a master sample frame which will be based on proxy economic variables developed from the 1988 Census, through the Family Health and Population project, will provide a refinement to surveys which has not been possible in any other sub-Saharan African country.

- Food Assistance Strategy. The Mission will continue support for studies and analyses to determine agricultural policy implications of food aid for both the public and private sectors in areas such as local cereals marketing, commodity pricing structures, baseline household consumption data, and farm input utilisation. The Mission envisions multi-year PL 480 food assistance closely linked to its agricultural and natural resource management strategy and to overall food security in Senegal.

- Population/Family Health. The Mission will continue to support secondary analyses of the 1986 Demographic and Health Survey and the 1988 Census to provide more in-depth data to guide program implementation. For example, the Mission will provide continuing

technical assistance of the U.S. Bureau of Census to facilitate disaggregation of the 1988 census data on women in Senegal.

- Natural Resource Management/Environment. Studies will be conducted as required in these areas for purposes of establishing baseline data and providing required input and analysis of issues related to project design and development.

**Program Requirements**. U.S. development assistance to Senegal has averaged $46 million per year during the past ten years. Projected levels for FYs 1991 and 1992 are $38 and $36 million respectively. Assuming performance indicators are achieved as is required under the new DFA mandate, funding levels are projected to increase progressively as follows over the strategy period.

**Projected Program Levels 1992-1997**

($000)

| Fiscal Year | Development Fund for Africa (DFA) | Economic Support Fund (ESF) | PL-480 Titles I/II/III | Total |
|---|---|---|---|---|
| 1992 | 20,000 | 5,000 | 11,000 | 36,000 |
| 1993 | 24,000 | 5,000 | 11,000 | 40,000 |
| 1994 | 29,000 | 5,000 | 11,000 | 45,000 |
| 1995 | 32,000 | 5,000 | 13,000 | 50,000 |
| 1996 | 36,000 | 5,000 | 14,000 | 55,000 |
| 1997 | 40,000 | 5,000 | 15,000 | 60,000 |
| TOTAL | 181,000 | 30,000 | 75,000 | 286,000 |

## B. Mission Management

**Staffing Requirements**. USAID's strategy emphasis on population/family health, crop production, forestry, and marketing will necessitate adjustments in how the Mission is organized and staffed. The current rough balance between program and project activity is expected to be maintained during the first half of the strategy period but may shift to a greater project focus in the later part of the strategy period.

A more concentrated focus on crops, forestry, and natural resource management necessitates concentration of the responsibility for these closely related activities in our Agricultural Development Office. The current Irrigation, Water Management and Engineering Division will be modified from a full-scale technical division to an ancillary support unit, and will be placed in the Project Development Office. The scaling down of this unit began in FY 1991. The cuts in staff in this and other offices will result in a reduction of

U.S. direct hire staff from 23 to 20 by the end of FY 1991. Further reductions will be made as Senegalese Foreign Service National (FSN) personnel are trained to take over positions currently held by Americans in the Mission's Project Development and Agricultural Development offices. Thus, by the end of FY 1993 the U.S. direct hire level is expected to be reduced to 18 and it is anticipated that the level will drop to 16 as the process is completed by the end of the strategy period in FY 1997. The reduction of expatriate Personal Service Contractor staff, initiated in FY 1990 with a reduction from 13 to 9, will continue as Senegalese staff are upgraded to fill those positions.

The Mission will continue to implement its ongoing regional responsibilities during the strategy period. These are diverse and numerous: Legal Advisor assistance to the Gambia and Mali; Executive Office administrative and commodity procurement assistance to the Gambia, Cape Verde and Guinea Bissau; Controller Office and Executive Office support to 19 Regional Inspector Staff; and Food for Peace Office assistance to the Gambia, Cape Verde, Mauritania, and Mali. It is anticipated that these responsibilities will be required at roughly the same levels and will not constitute an additional burden on the Mission.

**Operating Expense Requirements**. In FY 1990 the government of Senegal established an operating expense trust fund of $2,000,000. USAID has programmed these funds for use in FYs 1990, 1991, and 1992. USAID will seek additional deposits totaling $2,000,000 which will be used during fiscal years 1993-1996. By the end of FY 1996 the Trust Fund will be closed. USAID Senegal plans to move to its new office building beginning in FY 1994. Beginning at that time, office rent (currently $500,000 per year) will no longer be a cost. Funds for purchase or construction of the new office building are considered outside USAID operating expense resource requirements for purposes of this discussion.

Based on the above, and without taking into account general price increases in Senegal, inflation in the U.S., and currency exchange fluctuations (250 CFAF= $1 is assumed) USAID expects its operating expense requirements to be as indicated below.

| | Appropriated Dollars | Trust Funds |
|---|---|---|
| FY 1992 | 5,406,000 | 760,000 |
| FY 1993 | 5,466,000 | 700,000 |
| FY 1994 | 5,106,000 | 560,000 |
| FY 1995 | 5,266,000 | 400,000 |
| FY 1996 | 5,326,000 | 340,000 |
| FY 1997 | 5,666,000 | -0- |

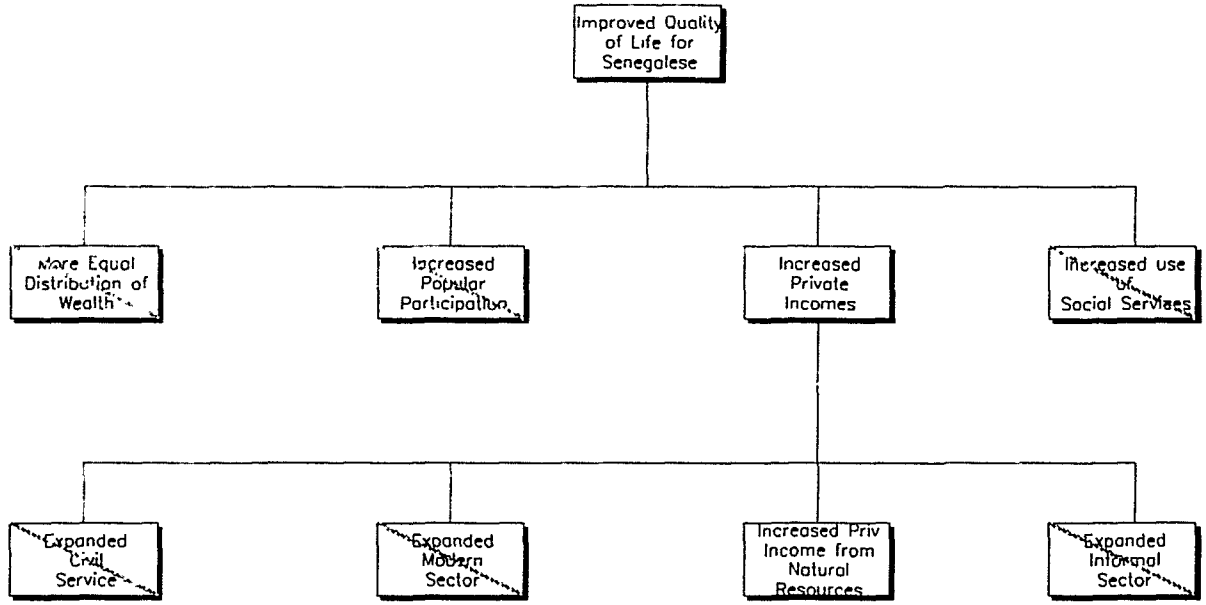
# ANNEX I

# C P S P

## LOGICAL FRAMEWORK

## (Objective Trees and Indicators)

Super Goal




Goal

# Strategic Choices

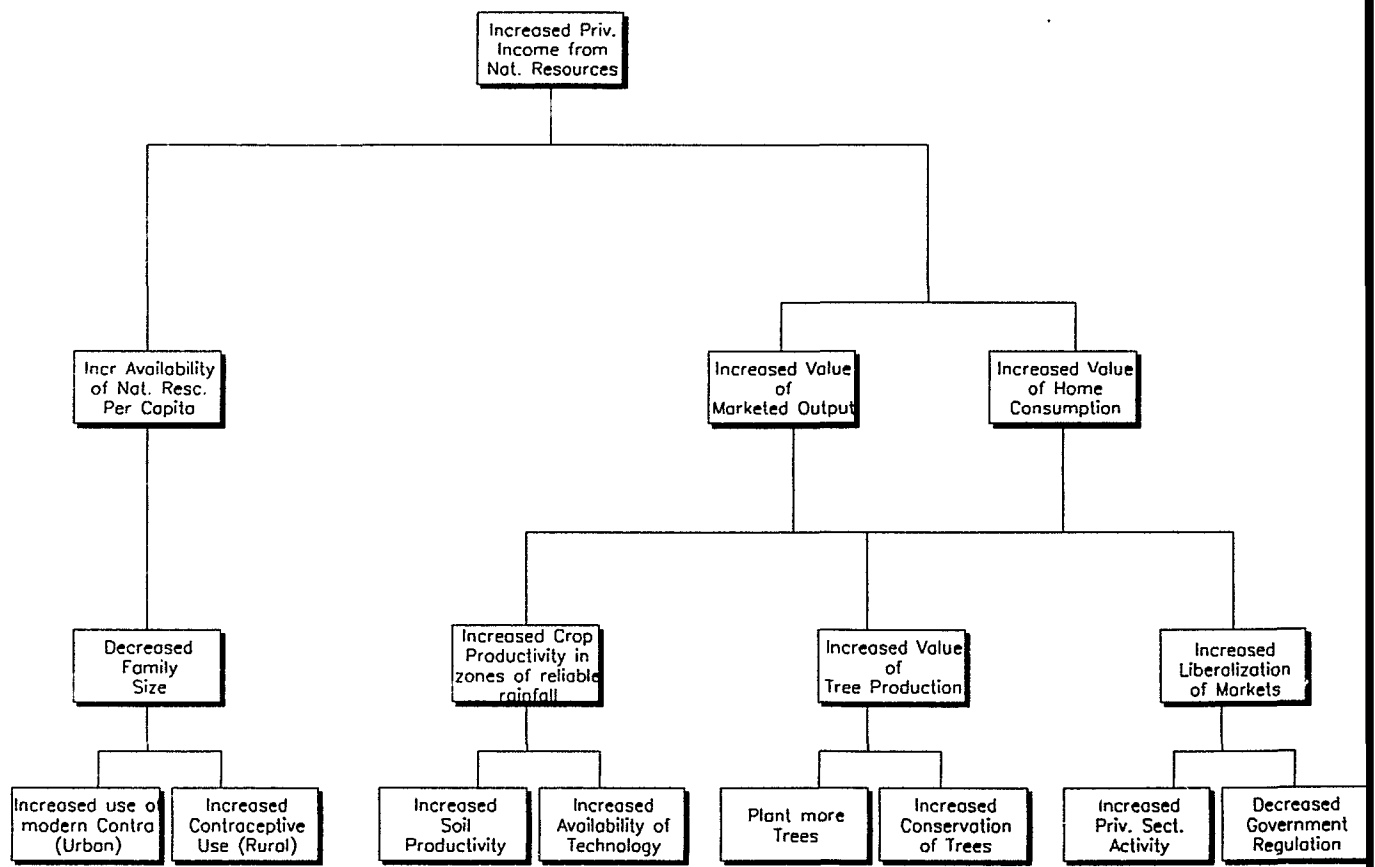
# USAID/Senegal
# CPSP Summary

**Goal**

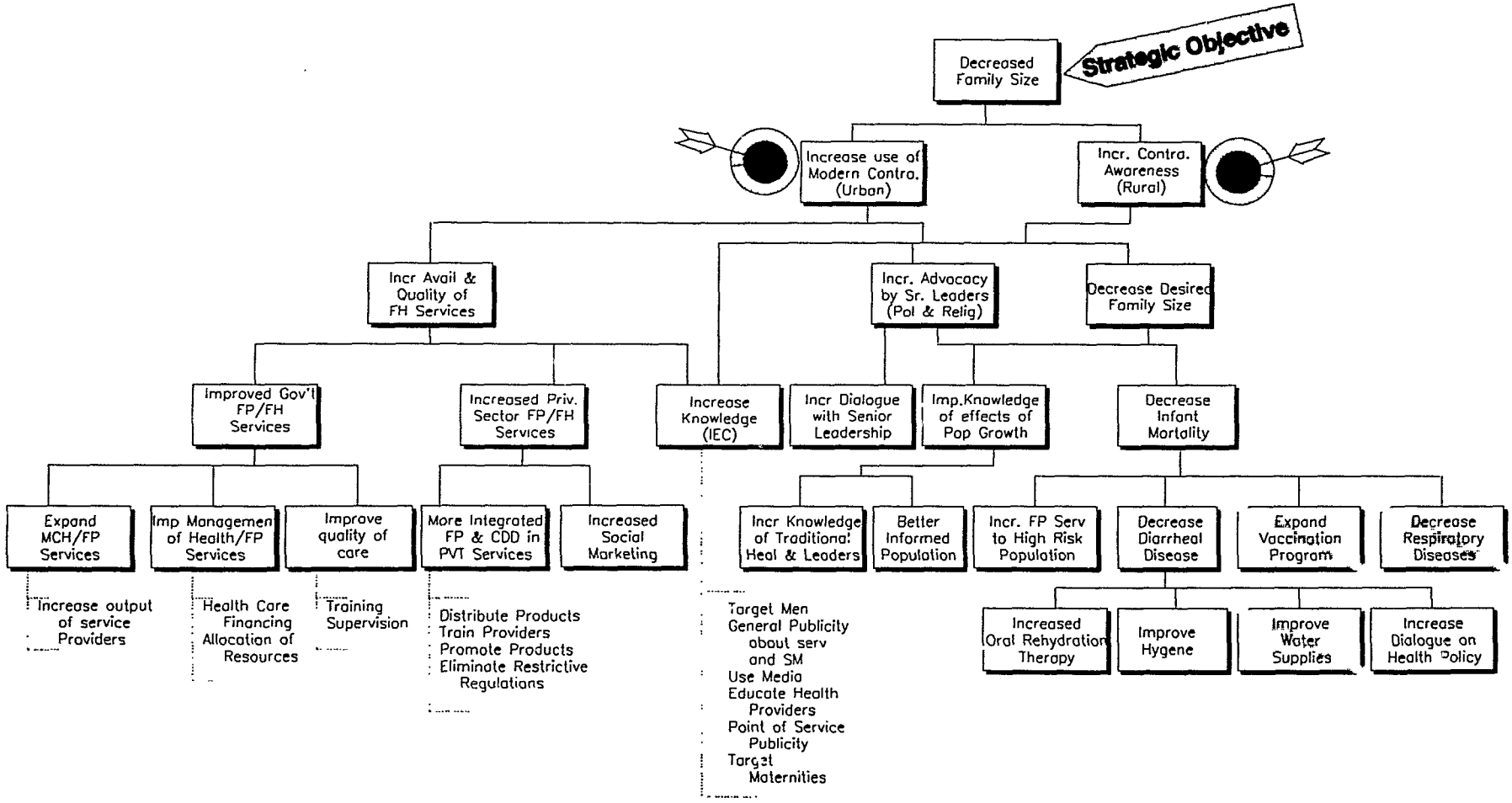
**Sub-Goal**

**Strategic Objectives**

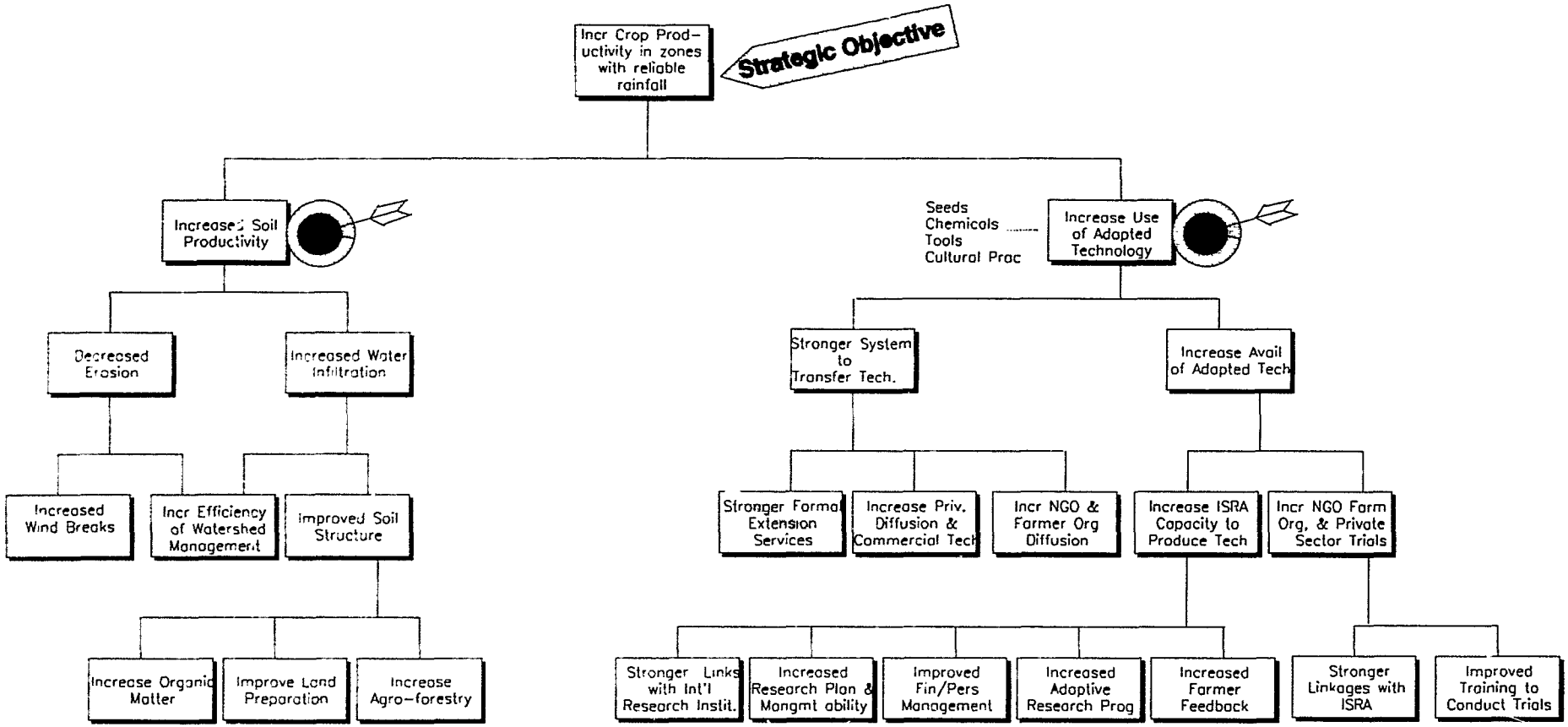
**Targets**



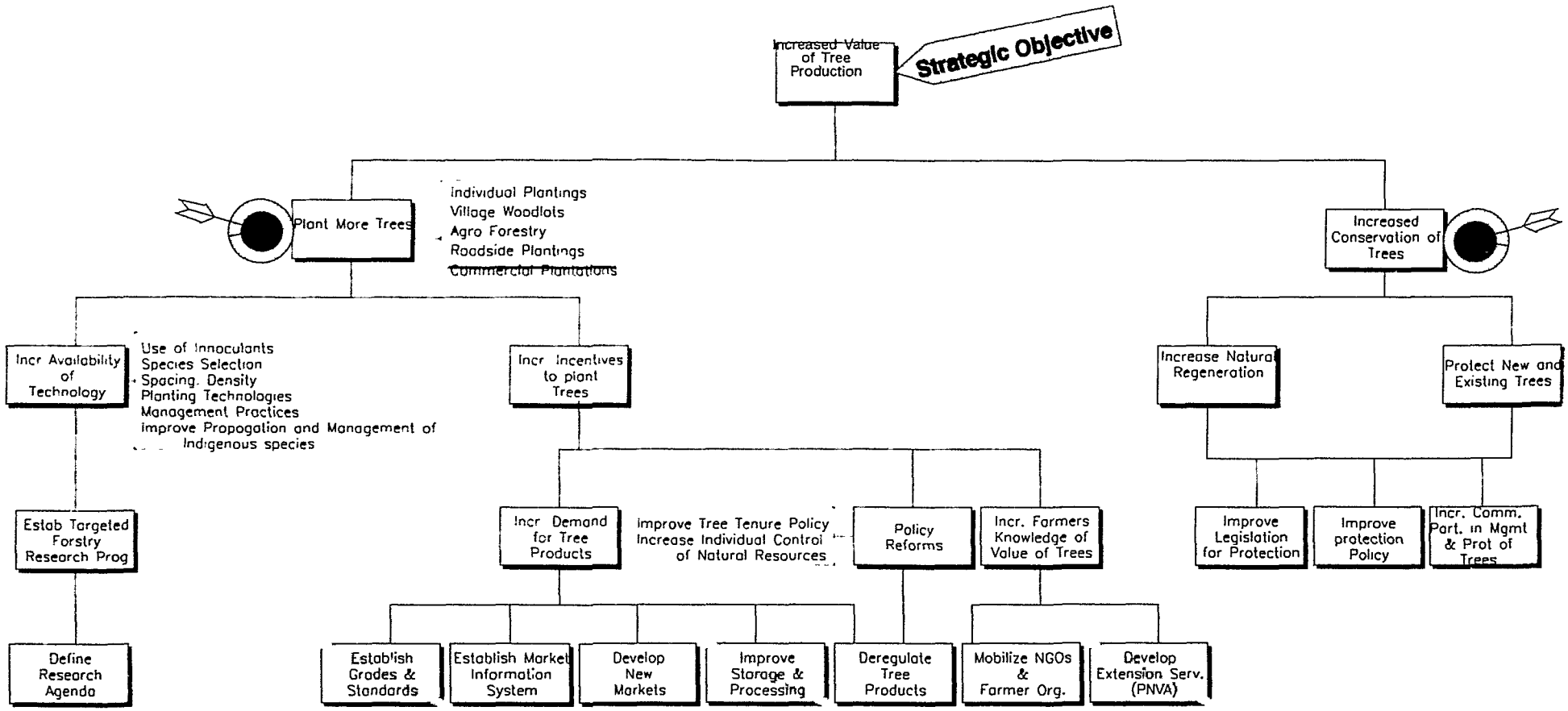

**Population** **Crops** **Forestry** **Marketing**


Decreased Family Size
Strategic Objective
Increase use of Modern Contra. (Urban)
Incr. Contra. Awareness (Rural)
Incr Avail & Quality of FH Services
Incr. Advocacy by Sr. Leaders (Pol & Relig)
Decrease Desired Family Size
Improved Gov't FP/FH Services
Increased Priv. Sector FP/FH Services
Increase Knowledge (IEC)
Incr Dialogue with Senior Leadership
Imp.Knowledge of effects of Pop Growth
Decrease Infant Mortality
Expand MCH/FP Services
Imp Managemen of Health/FP Services
Improve quality of care
More Integrated FP & CDD in PVT Services
Increased Social Marketing
Incr Knowledge of Traditional Heal & Leaders
Better Informed Population
Incr. FP Serv to High Risk Population
Decrease Diarrheal Disease
Expand Vaccination Program
Decrease Respiratory Diseases
Increase output of service Providers
Health Care Financing Allocation of Resources
Training Supervision
Distribute Products
Train Providers
Promote Products
Eliminate Restrictive Regulations
Target Men
General Publicity about serv and SM
Use Media
Educate Health Providers
Point of Service Publicity
Target Maternities
Increased Oral Rehydration Therapy
Improve Hygene
Improve Water Supplies
Increase Dialogue on Health Policy

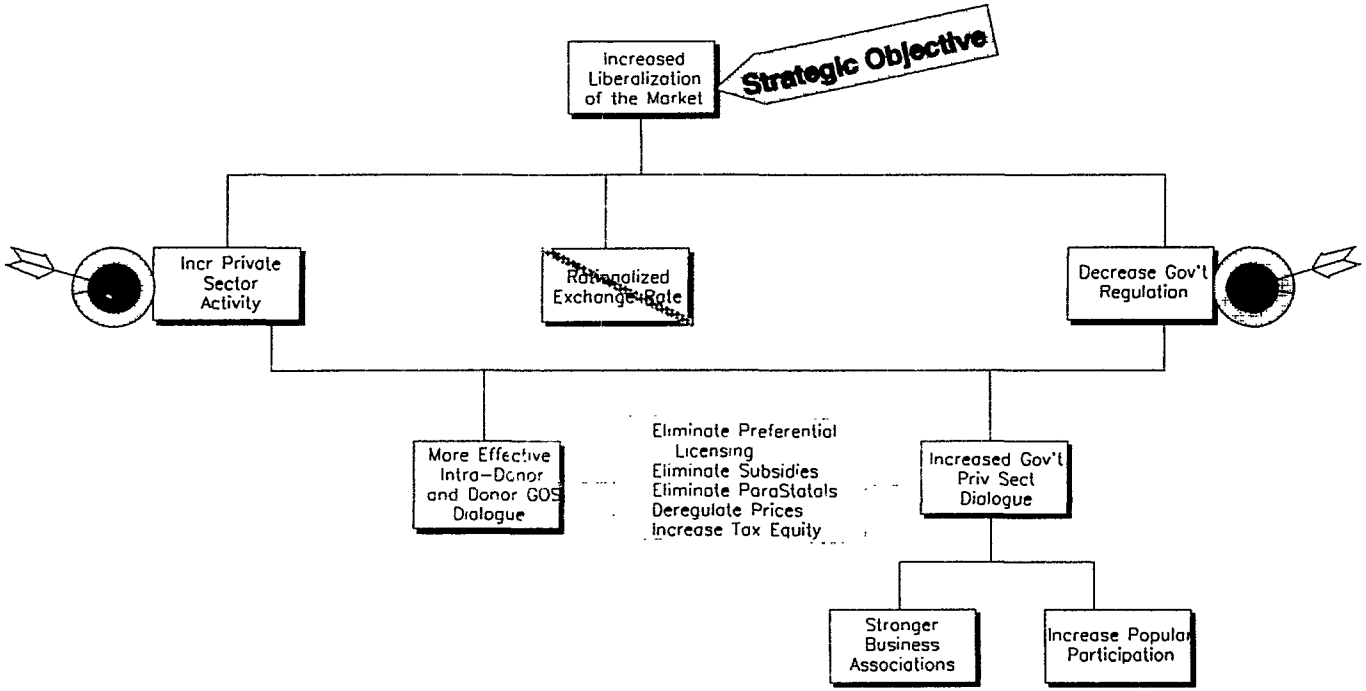
# Population


Incr Crop Prod-uctivity in zones with reliable rainfall
Strategic Objective
Increased Soil Productivity
Seeds
Chemicals
Tools
Cultural Prac
Increase Use of Adapted Technology
Decreased Erosion
Increased Water Infiltration
Stronger System to Transfer Tech.
Increase Avail of Adapted Tech
Increased Wind Breaks
Incr Efficiency of Watershed Management
Improved Soil Structure
Stronger Formal Extension Services
Increase Priv. Diffusion & Commercial Tech
Incr NGO & Farmer Org Diffusion
Increase ISRA Capacity to Produce Tech
Incr NGO Farm Org, & Private Sector Trials
Increase Organic Matter
Improve Land Preparation
Increase Agro-forestry
Stronger Links with Int'l Research Instit.
Increased Research Plan & Mangmt ability
Improved Fin/Pers Management
Increased Adaptive Research Prog
Increased Farmer Feedback
Stronger Linkages with ISRA
Improved Training to Conduct Trials

# CROPS


Increased Value of Tree Production
Strategic Objective
Plant More Trees
Individual Plantings
Village Woodlots
Agro Forestry
Roadside Plantings
Commercial Plantations
Increased Conservation of Trees
Incr Availability of Technology
Use of Innoculants
Species Selection
Spacing, Density
Planting Technologies
Management Practices
Improve Propogation and Management of Indigenous species
Incr Incentives to plant Trees
Increase Natural Regeneration
Protect New and Existing Trees
Estab Targeted Forstry Research Prog
Incr Demand for Tree Products
Improve Tree Tenure Policy
Increase Individual Control of Natural Resources
Policy Reforms
Incr. Farmers Knowledge of Value of Trees
Improve Legislation for Protection
Improve protection Policy
Incr. Comm. Part. in Mgmt & Prot of Trees
Define Research Agenda
Establish Grades & Standards
Establish Market Information System
Develop New Markets
Improve Storage & Processing
Deregulate Tree Products
Mobilize NGOs & Farmer Org.
Develop Extension Serv. (PNVA)

# Forestry


Increased Liberalization of the Market
Strategic Objective
Incr Private Sector Activity
Rationalized Exchange Rate
Decrease Gov't Regulation
More Effective Intra-Donor and Donor GOS Dialogue
Eliminate Preferential Licensing
Eliminate Subsidies
Eliminate ParaStatals
Deregulate Prices
Increase Tax Equity
Increased Gov't Priv Sect Dialogue
Stronger Business Associations
Increase Popular Participation

# Markets

# CPSP LOGICAL FRAMEWORK

## LIST OF ACRONYMS/ABREVIATIONS

| | |
|---|---|
| CDD | Control of Diarrheal Diseases |
| CESAG | Centre Africain d'Etudes Supérieures en Gestion (African Center for Advanced Management Studies) |
| CONGAD | Conseil des Organisations Non-Gouvernementales d'Appui au Développement (National coordinating body for non-government organizations) |
| CPSP | Caisse de Péréquation et de Stabilisation des Prix (Equalization and stabilization fund) |
| DHS | Demographic and Health Survey |
| FP | Family Planning |
| FTE | Full Time Equivalent |
| F/U | Follow-up |
| GOS | Government of Senegal |
| HCF | Health Care Financing |
| IEC | Information, Education, and Communication |
| ISRA | Institut Sénégalais de Recherches Agricoles (Government agricultural research institute) |
| IUD | Intrauterine Device |
| KAP | Knowledge, Attitudes, and Practice (Survey) |

## LIST OF ACRONYMS/ABREVIATIONS (contd.)

| | |
|---|---|
| MDRH | Ministère du Développement Rural et de l'Hydraulique (Ministry of Rural Development and Hydraulics) |
| MWRA | Married Women of Reproductive Age |
| NGO | Non-Governmental Organization |
| ORT | Oral Rehydration Therapy |
| PRITECH | Technologies for Primary Health Care Project |
| SAED | Société d'Aménagement et d'Exploitation des Terres du Delta (Government regional development agency for the Senegal River valley) |
| SONACOS | Société Nationale de Commercialisation des Oléagineux du Sénégal (Government company for marketing peanut products) |

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CPSP LOGICAL FRAMEWORK

GOAL AND SUB-GOAL INDICATORS

E. 1

| TREE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 0 | Increase Private Income from Natural Resources. | Goal | Total: Natural resource income increased by $6.8 million annually by 1997 over 1991 baseline.<br><br>Crops: Value of total crop production increased from CFAF 7.0 billion in 1991 to CFAF 7.9 billion in 1997 (without USAID program) or to CFAF 9.1 billion in 1997 (with program). Net impact = CFAF 1.2 billion = $4.8 million per year.<br>Trees: Value of tree production increased from ____ in 1991 to ____ in 1997. Net impact = CFAF 5.0 billion = $20 million. | Total: MDRH crop production estimates. Baseline and follow-on surveys.<br>Crops: MDRH crop production estimates.<br><br>Trees: Baseline and follow-on surveys. |
| 1.0 | Increased availability of Natural Resources Income Per Capita. | Sub-Goal | Total: Per capita income from natural resources increased by an average of $47 per capita for 145,000 participants by 1997.<br>Crops: per capita income from crops increased by $106 per year per participants by 1997 (for 45,000 participants).<br>Trees: Per capita income from trees increased by $20 per participant per year by 1997 (for 100,000 participants). | Census. Baseline and follow-on surveys. |
| 2.0 | Increased Value of Marketed Output (FP/FH) services. | Sub-Goal | Total: Value of marketed production increased from ___in 1991 to ___in 1997 (without USAID program.<br><br>Crops: Value of marketed crop production increased from CFAF 0.7 billion in 1991 to CFAF 0.8 billion in 1997 (without USAID program) or to CFAF 1.2 billion (with program). Net impact = CFAF 0.4 billion per year by 1997 = $1.6 million.<br>Trees: Value of tree sales increased from in 1991 to in 1997. | Total: MDRH crop production estimates. Baseline and follow-on surveys.<br>Crops: MDRH crop production estimates. Baseline and follow-on surveys.<br><br>Trees: Baseline and follow-on surveys. |
| 3.0 | Increased Value of Home Consumption. | Sub-Goal | Total: Value of home consumption increased from ___in 1991 to ___in 1997 (without program) to___ in 1997 (with program).<br>Crops: Value of home consumption increased from CFAF 6.3 billion in 1997 (without USAID program) or to CFAF 7.9 billion in 1997 (with program) Net impact of program = CFAF 0.8 billion = $3.2 million per year.<br>Trees: Value of home consumption/tree stocks increased from ___in 1991 to to ___ in 1997. | Total: MDRH crop production estimates. Baseline on follow-on<br>Crop: MDRH crop production estimates. Baseline and follow-on surveys.<br><br>Trees: Baseline and follow-on surveys. |

CPSP LOGICAL FRAMEWORK

POPULATION INDICATORS



| IRFE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 0 | Decreased Family Size. | Strategic Objective | National Total Fertility Rate decreased from 6.6 in 1986 to 6.0 in 1996. | DHS KAP |
| 1.0 | Increased Use of Modern Contraceptives (Urban, i.e. over 10,000 population). | Target | Urban Contraceptive Prevalence (modern methods) increased from 6.7% in 1986 to 20.0% in 1996 (assumes 1992 urban rate @ 15%). | DHS KAP |
| 1.1 | Increased availability and quality of Family Health services. | Sub-target | a) Every urban center (over 10,000) with growth rate 2.7% (1976-1988) has FP service points proportional to population (average of 1 clinic/4000 WRA). | GOS Statistics |
| | | | b) Average contraceptive continuation rate increased from 10 months for pill & 18 months for IUD in 1989 to 16 months for pill & 24 months for IUD in 1996. | KAP |
| 1.11 | Improved Government family planning & family health (FP/FH) services. | | % of GOS health budget supporting FP/FH services increased from ___ in 1992 to ___ in 1996. | HCF Study GOS Data |
| 1.111 | Increased MCH/FP medical services. | | Number of urban public MCH/FP service points increased from 54 in 1989 to 130 in 1996. | GOS Data |
| 1.112 | Improved management of Health/FP services. | | a) 1000 clients/yr/FTE FP nurse midwife 3 years after trained & clinic operational. | Project Data |
| | | | b) 70% of FP clinics use service statistics for planning annual activities & for justifying expenditures by local health committee. | Project Data |
| 1.113 | Improved quality of care. | | a) Dropout rate decreased from 22% in 1989 to 11% in 1996. | KAP |
| | | | b) Mothers reporting prescription of antidiarrheal drugs decreased from 23% in 1989 to 12% in 1996. | KAP |
| | | | c) 75% of MCH/FP clinics receive at least two supervisory visits per year. | Project Data |

| | | | | |
|---|---|---|---|---|
| 1.12 | Increased Private Sector Family Planning/Family Health Services. | | Number of known Private FP medical services facilities (excl. commercial sales) increased from 28 in 1989 to 65 in 1996. | Project Data |
| 1.121 | Integrated Control of Diarrheal Disease (CDD) activities with private FP services. | | Percent private FP medical services with CDD activities increased from 0 in 1989 to 50% in 1996. | Project Data |
| 1.122 | Increased Social Marketing. | | Through social marketing condom sales increased from 0 in 1989 to 7 million per year in 1996. | DHS<br>KAP |
| 1.13 | Increased Knowledge of Services among urban MWRA. | | Knowledge of 1 modern method increased from 87.5% in 1986 to 95% in 1996. | DHS |
| 2.0 | Increased Contraceptive Awareness (Rural). | Target | Knowledge of modern contraceptive methods increased from 58.1% in 1986 to 75% in 1996 among rural MWRA. | DHS<br><br>KAP |
| 2.11 | Increased Knowledge about child spacing (rural MWRA). | | Knowledge of 1 benefit of child spacing increased from ____ in 1992 to ____ in 1996. | Baseline; F/U KAP |
| 2.2 | Increased advocacy by senior leaders (political and religious). | Sub-target | % of people reporting having heard leadership commentary on population matters increased from ___ in 1992 to ___ in 1996. | Baseline; F/U KAP |
| 2.21 | Increased dialogue with Senior Leadership. | | No. of meetings with senior GOS leadership increased from ___ in 1992 to ___ in 1996. | |
| 2.22 | Improved Knowledge of effects of population growth. | | Knowledge of 1 effect of population growth increased from ___ in 1992 to ___ in 1996 among populace and leaders. | Baseline; F/U KAP |
| 2.221 | Increased Knowledge of traditional healers & leaders. | | 50% of traditional healers & leaders educated @ effects of population growth on economic, natural resources & social environment; 50% of population reports hearing at least 1 group discussion led by trad. healers/leaders. | Project Data<br><br>KAP |

CPSP LOGICAL FRAMEWORK

POPULATION INDICATORS



| | | | | |
|---|---|---|---|---|
| 2.222 | Better Informed Population. | | IEC programs added to 50% of NGO projects and to 50% of forestry activities & 50% of rural maternities. | Project Data |
| 2.3 | Decreased Desired Family Size. | Sub-target | Desired number of children decreased from 5.5 in urban areas in 1986 to 4.0 in 1996 and from 7.6 in rural areas in 1986 to 6.6 in 1996. | DHS<br><br>KAP |
| 2.31 | Decreased Infant Mortality. | | Infant mortality from diarrhea decreased from 24% in 1983 to 18% deaths in under 5's in 1996. | DHS |
| 2.311 | Increased FP Services to women with high risk factors. | | 65% of high risk women receive FP IEC and half of them use contraception. | Project data |
| 2.312 | Decreased Diarrheal Disease. | | Age-specific frequency of diarrhea decreased by 30% among 0-6 month olds. | Surveys (PRITECH) |
| 2.3121 | Increased Oral Rehydration Therapy use. | | Proportion of diarrheal cases treated with ORT increased from 24% in 1989 to 50% in 1996. | Surveys (PRITECH) |
| 2.3122 | Improved hygiene. | | -a) Age-specific frequency of diarrhea decreased by 50% among primary school children.<br>-b) Increased exclusive breastfeeding for 4-6 months from 5% in 1986 to 20% in 1996. | Surveys<br><br>DHS |
| 2.3123 | Increased dialogue on Health Policy. | | USAID participating on health care financing (HCF) committee which is writing a "White Paper" on HCF. | Project Data |

CPSP LOGICAL FRAMEWORK
CROP INDICATORS

| TREE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 0.0 | Increase crop productivity in zones of reliable rainfall. | Strategic obective | Cereal production increased from 1,000,000 MT to 1,300,000 MT over period of program due to increased productivity. | Survey of adoptors. MDRH crop production estimates. |
| 1.0 | Increase soil productivity. | Target | 45,000 farmer families in region adopt improved form of soil productivity by 1997. | Sample survey of regional universe: 1) baseline survey to estimate rate & type of practices in use, yr 0, and 2) periodic surveys to estimate adoption rate of specific technologies. |
| 1.1. | Decreased erosion. | Sub-target | 40,000 hectares protected from erosion with windbreaks & watershed mgt techniques. | |
| 1.2 | Increase water infiltration. | Sub-target | 175,000 ha. benefitted from technologies enhancing water infiltration. | |
| 1.11 | Increase windbreaks. | | | |
| 1.12 & 1.21 | Increase efficiency of watershed management. | | | |
| 1.22 | Improve soil structure. | | | |
| 1.221 | Increase organic matter. | | | |
| 1.222 | Improve land preparation. | | | |
| 1.223 | Increase agro-forestry. | | | |
| 2.0 | Increase use of adapted technology. | Target | Increase of 45,000 additional households in region using improved inputs & agronomic practices by '97 (fertilizer, improved seed, tools & equipment, chemicals, improved cultural practices). | Sample survey of regional universe: 1)baseline survey to estimate % of house-holds using improved inputs & cultural practices in yr. 0 &, 2)periodic surveys to estimate practices & adoption rate. |

CPSP LOGICAL FRAMEWORK
CROP INDICATORS

| | | | | |
|---|---|---|---|---|
| 2.1 | Stronger system to transfer technology. | Sub-target | a) ISRA working with 15 farmer organizations, NGO's & private sector.<br>b) Quality & timeliness of information shared with farmers. | ISRA records.<br>Monitoring reports on technology transfer system. |
| 2.2 | Increase availability of adapted technology. | Sub-target | a) 15 technologies & recommendations available for 400 mm reliable zone, which were tested under on-farm conditions & evaluated economically. | ISRA records. |
| 2.12 | Increase private diffusion & commercial technology. | | a) Number of private input dealers expanding.<br>b) Quality & quantity of technical information provided to farmers from private sources increasing. | Wholesale input deals records.<br>Informal field surveys. |
| 2.13 | Increase NGO & farmer organizations diffusion. | | -Number of NGO's involved in technology transfer increased & farmer clientele expanded.<br>-Number of farmers served technology transfer function) by their associations increased. | Evaluation of NGO's involved in technology transfer.<br>Farmer organizations records & interviews. |
| 2.21 | Increase ISRA capacity to produce technology. | | See Comment. | Evaluation of ISRA program. |
| 2.22 | Increase NGO, farm organization & private sector trials. | | Number of farm trials & demonstrations managed by NGO's & private sector. | NGO & private input suppliers' records, files. |
| 2.211 | Stronger link with international institutes. | | a) Existing networks prioritized according to domestic needs.<br>b) Scientific exchange increased. | ISRA documentation.<br>Records showing research results exchanged, materials made available to ISRA & n° of consultants held. ISRA records document resources provided thru networks. |

CPSP LOGICAL FRAMEWORK
CROP INDICATORS

| | | | | |
|---|---|---|---|---|
| 2.212 | Increase research planning & management ability. | | a) Scientific collaboration increased intra-& inter-disciplinary; across depts; b) Research programs funded in accordance with well defined research plan; c) System for periodically reviewing & revising research priorities established. | ISRA records evaluation. |
| 2.213 | Improve financial/ personnel management. | | a) Recruitment, promotion, training & remuneration reforms instituted; b) Resources managed in accordance with approval budgets; c) Accurate, relevant & timely financial analysis available to managers. d) Amount of resources saved thru use of improved financial management. | ISRA records evaluation. ISRA budget & accounts & management reports. |
| 2.214 | Increased adaptive research program. | | N° & quality of priority research programs improved. | Research publications; progress reports. Project reports on research management. |
| 2.215 | Increase farmer feedback. | | a) Number of on-farm visits by ISRA researchers increased by ___%; b) Number of visits of farmers to research stations; c) Number of joint meetings farmers, researchers + extension staff, NGO's & private enterprise. | ISRA records, farm visits. |
| 2.223 | Stronger linkages with ISRA. | | Number of farmer organizations working with ISRA. | ISRA records & interviews. |
| 2.222 | Improve training to conduct trials. | | Number of training sessions by researchers for extension workers/NGO's private enterprise. N° of private sector training ext/NGO's & farmers. | Project records. |

CPSP LOGICAL FRAMEWORK
FORESTRY INDICATORS

| TREE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 0 | Increased value of tree production. | Strategic objective | -Direct per capita income from forestry products & increase in value of tree stocks = CFA 5,000/yr per program participant. | 1. Project records & studies of impact of natural forestry mgt. & nat.regen. practices<br>2a)baseline survey of income from forest products &<br>b) periodic survey in zone of USAID program. |
| 1.0 | Plant more trees. | Target | 3,000,000 trees planted & surviving attributable to USAID program, by 1997. | 1. Project Records<br>2. Special surveys, studies. |
| 1.1 | Increase Availability of technology. | Sub-target | 7 technologies tested off-station. | 1. ISRA Records. |
| 1.11 | Establish targeted forestry research program. | | Forestry program being implemented, reflecting revised priorities; budget, personnel, and research methodology in place. | ISRA Documents<br>-Statement of research program. |
| 1.12 | Define Research Agenda. | | Revised research agenda developed reflecting revised priorities, and integrated with crops & livestock research. | ISRA Program Documents. |

CPSP LOGICAL FRAMEWORK
FORESTRY INDICATORS

| TREE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 1.2 | Increase incentive to plant trees. | Sub-target | Increase attributable to USAID program of 100,000 farmers who have planted trees over program period. | Baseline & follow-up surveys in zones of USAID project intervention. |
| 1.21 | Increase demand for tree products. | | N° of regional markets established for poles & other tree products. | Survey. |
| 1.211 | Establish market info system. | | Market price report published regularly. | Public reports. |
| 1.212 | Develop new markets. | | 1. Number of forestry-based product exports increased<br>2. Value of forestry-based export products increased<br>3. Size of market for forestry products grows by -----% year. | Trade statistics.<br>Periodic market surveys. |
| 1.22 | Policy reforms. | | Tree Tenure Decree passed. | GOS decree. |
| 1.221 | Deregulate tree products. | | Open market for tree products<br>Tree products exempted from levies and fees. | GOS decree. |
| 1.23 | Increased farmers' knowledge of value of trees. | | Number of farmers trained.<br>Number of new technologies adopted. | Project documents survey. |
| 1.231 | Mobilize NGO's & farmers. | | Number of NGO's & farmer organizations participating in tree planting increases ____% annually. | Project documents survey. |

CPSP LOGICAL FRAMEWORK
FORESTRY INDICATORS

| TREE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 2.0 | Increased conservation of trees. | Target | 200,000 hectares protected & managed to permit regeneration. | Survey<br>-baseline<br>-periodic. |
| 2.1 | Improve mgt of new and existing trees. | Sub-target | 25,000 farmers involved in natural forestry mgt. and natural regeneration by 1997. | Survey<br>Project records. |
| 2.11 | Improve legislation for protection. | | A new forestry policy for public domain, forests & parks encouraging conservation is passed or legislation enacted. | Legislation/policy statement. |
| 2.12 | Improve protection policy. | | A new forestry policy for public domain, forests & parks encouraging conservation is passed or legislations enacted. | Legislation/policy statement. |
| 2.13 | Increase community participation in mgt & protection of trees. | | Number of villages & local organizations involved in protection & management of public lands, forests & parks. | Survey. |

CPSP LOGICAL FRAMEWORK

MARKETING INDICATORS



| TREE | STATEMENT | LEVEL | INDICATOR | SOURCE |
|---|---|---|---|---|
| 0.0 | Increased liberalization of the market for agriculture and natural resource-based products. | Strategic objective | Percent value of cereals and wood products moving through liberalized market. | GOS statistics surveys. |
| 1. | Increase private sector activities. | Target | Increased numbers of traders, millers, transporters in cereals and wood products from x to y_____. | GOS statistics privately funded surveys. |
| 2. | Decreased government regulation. | Target | Elimination of rice transport subsidy and subsidies to SONACOS, CPSP, SAED.<br><br>Deregulation of prices for rice. | GOS statistics and legislation/ regulation. |
| 1.1 | Increased donor coordination/GOS Dialogue. | Sub-target | Three signed agreements for joint programs. | Donor documents Donor-GOS agreements. |
| 1.11 | Establish regular AID/donor coordinating mechanism. | | Existence of donor coordination groups focused on private sector development. | Evaluation. |
| 1.12 | Regular donor/GOS meetings. | | Frequency of meetings. | Evaluation. |
| 1.2 | Increased private sector-GOS dialogue. | Sub-target | Regular formalized meetings scheduled with President goes from_____to_____. | GOS - business statements.<br><br>Evaluation. |
| 1.21 | Strengthen business associations and organizations. | | Issuance of policy positions developed by independent business associations based on solid research.<br><br>Increased numbers of programs, training sessions, conferences, presentations, position papers and studies.<br><br>Increased availability of credit. | Review of private business association statements.<br><br>Evaluation.<br><br>GOS statistics. |
| 1.211 | Increased private research. | | Published reports. | Business associations. |

CPSP LOGICAL FRAMEWORK

MARKETING INDICATORS



| | | | | |
|---|---|---|---|---|
| 1.212 | Training. | | Numbers trained.<br>Training programs established. | Business associations CESAG, private training institutions Training. |
| 1.213 | Improve financial intermediation. | | Branches opened, loans made, amount lent, credit unions established, savings taken.<br>Legal framework in place. | Credit and savings institutions.<br>GOS statistics<br>Evaluations. |
| 1.22 | Increased popular participation. | | Increased numbers of private organizations. | Evaluation. |
| 1.221 | Strengthen NGOs. | | Number of NGOs recognized by GOS.<br>Number of village organization served by NGO projects.<br>Number of project activities undertaken.<br>Number of training programs underway.<br>Numbers trained. | CONGAD<br>GOS<br>Survey. |
| 1.2211 | Increased donor coordination of assistance to NGOs. | | Established mechanism in place.<br>Regular meetings.<br>Common agreements. | Evaluation. |
| 1.2212 | Strengthen local NGO coordinating body | | Increased services to members. New Programs, training, research, technical assistance provided to members. | Evaluation. |
| 1.2213 | Increased training and technical assistance to NGOs | | Numbers trained, technology transferred. | Evaluation. |

# ANNEX II

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