Development and Climate

Country Study: Senegal

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Chap. 1 – Introduction

The real test for the least developing countries in the coming years is development. On the other hand, the social and economic vulnerability of these countries on the face of the current globalisation, as well as their vulnerability to major environmental hazards : soil erosion, desertification, global warming, etc., render their future development, especially of their populations, rather hypothetical. While there certainly exists a very wide north-south divide, it cannot be denied that huge disparities do exist between the developing countries.

"Developing countries recorded varying economic results during the last two decades (1980 - 2000). Whereas Latin America and South Asian countries showed increases in their per capita Gross National Products of 70% and 109% respectively, this economic indicator decreased in Sub-Saharan countries by 25%. [1]

All of the 28 countries at the bottom end of the HDI (Human Development index) rating and 40 out of the 50 countries at the bottom of the Human Development rating,[2] are from Sub Saharan Africa.

Such observations argue for a reconsideration of the way in which development in the Southern hemisphere, and in Africa in particular, is being conceived. Poverty, a key concern of developing countries, is being flagged at almost every international Conference as a hindrance to sustainable development. Indeed, the revival of current debates on development finance, focusing primarily on poverty alleviation or its merchandising (for example, "our dream is a world free of poverty", - world bank, or "let us work together for progress" - OECD) ; the contents of which appear rather "classical" or "neo-liberal", all underscore the need for a new world order, and for a redefinition of the place and role of Financial Institutions. In short, these debates, to cite only a few, suffer from the burden of a dominant paradigm, which could spell serious consequences for the developing countries[2]"

It is therefore a question of changing the way in which African countries, particularly the least advanced, formulate their sustainable development policies. As at present, their approaches and objectives (like those of the millennium declaration), are oriented towards the fight against poverty ; that is, towards the implementation of multi-lateral agreements on the environment, such as the conventions on combating desertification, on climate and on bio-diversity. This dichotomy has been the root cause of many reversals. For example, the current impasse in on-going negotiations and implementation of the climate convention. This convention, which appears too binding for some developed countries ; and too far removed from the major concerns of the developing countries, has been put on "stand-by", the main consequence of which, is that the ultimate objective of the convention (stabilisation of ghg concentrations in the atmosphere), will not be achieved within a reasonable time limit, - which is a considerable setback for the entire world populations.

Thus, there is a methodological void between the ways in which development issues on the one hand, and climate issues on the other, are addressed. To bridge this void, one has to proceed from the starting point of development priorities, as defined by the countries themselves.

This off course indicates that climate change issues in African countries, can only be addressed from the stand point of the stated objectives and development policies of these countries. The concept of "development first" perfectly translates this u-turn in the methodology employed to tackle development and environmental issues in developing countries, particularly those in Africa.

The previous publication of March 2002 raised the issue of a reference framework for the participatory approach and for relevant case studies : regional / NEPAD, sub regional / West African integration ; individual country studies.

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[1] SFI - World Bank, 2001.
[2] Global Report on Human Development, 2001, UNDP.
[2] « Development First » IIED

In keeping with the need for conformity and coherence with the other case studies, we have opted for the individual country approach, taking Senegal as an example for the West African sub-region. Senegal is an active participant in the process of sub-regional integration and is a partner of NEPAD (the New Partnership for African Development).

This example is quite significant, in the sense that Senegal experiences much the same type of problems confronting other west African countries, especially in energy matters (an almost total dependence on external sources for petroleum products), and in matters of food security (acute vulnerability to annual climatic fluctuations).

Chap. 2 - National situation and current development issues

SENEGAL (2000)

Population : 10 million Surface area (1997): 196.7 thousand sq. km Population per sq. km (1997): 49 Population growth : 3 % GNI per capita : 500 US$ GDP : 4.4 billion US$	**Structure of economy**			
	%GDP	**1980**	**1990**	**2000**
	Agriculture	**18,9**	**19,9**	**18,2**
	Industry	**15,4**	**18,7**	**26,9**
	Manufacturing	10,6	13,1	17,8
	Services	**65,8**	**61,4**	**54,9**

Location: With a surface area of 196,722 km^2, Senegal is a flat, low-lying country situated in the extreme western part of Africa. The country has a semi-arid tropical Sudano-Sahelian climate, with a relatively narrow temperature span. The rainy season is limited to a single summer monsoon. Rainfall has declined significantly in the last three decades. It fluctuates widely from year to year and from one region to another, ranging from just over 1,000 mm/year in the southern part of the country to less than 250 mm/year in the northern part. As a consequence, vegetation varies from bushy steppes in the north to forest stands in the south and southeast. The central part of the country consists of Sudano-Sahelian and Sudano-Savannah terrain. Senegal's soils are dry and sandy in the North, ferrous in the central regions and lateritic in the South. In general, soil fertility is very poor and the soil is extremely vulnerable to wind and other forms of erosion.

In 1998, the population of Senegal was estimated at around 9 million. It is growing at an annual rate of 2.9 %. At this rate, the population will double every 25 years. Some 65 % of the population is concentrated on 14 % of the national territory. National density average is 44 inhabitants per km^2. The largest urban centre is the Dakar area, with 23 % of the total population and an average density of 3,659 inhabitants/km^2. Urbanisation in that area continues to increase steadily, causing many social problems such as unemployment and poor sanitation. Social services are saturated and urban poverty is growing.

Over the last 10 years, the Senegalese economy has experienced a two-phased evolution:

- The period from 1990 to 1993 was characterised by a poor macro-economic performance, despite the implementation of IMF structural adjustment policies.
- The period since 1994 has been marked by a clear economic recovery. GDP growth has stabilised at between 5% and 6%. Most sectors have performed well. Inflation has fallen to 1.9% in 2000, and the government has tightened control over the public finances.

Conventional scenario : IPCC

The country's present development trends were obtained from a conventional scenario encompassing the period 1995 / 2025..

The Conventional Development Scenario[3] paints a picture of regional patterns over the next several decades under "conventional" development assumptions. In many ways, it tells an optimistic story of rapid growth and modernization of the economies of the region. In the context of increasing economic globalisation, regional consumption and production patterns gradually move toward the standards of industrialized countries, while the scenario also assumes that institutions of governance become progressively more effective and the region enjoys an era of relative peace and security.

One remarkable aspect of the present scenario (in comparison with the IPCC scenario), is the determination to reduce poverty among the local populations, through rapid economic growth, accompanied by economic and social integration of the latter in the globalisation movement and through accelerated research for healthy and efficient technology. These measures fall well within conventional convergent strategies, based on development and economic growth. The resultant structural changes (rapid or otherwise), will depend on the share of attention given to social and environment issues. On the African continent, the importance given to food security, will undoubtedly be based on the chosen scenario. The reference is therefore A I (trend F1), moving more or less decisively towards B1.

Nevertheless, in addition to these optimistic development assumptions, the scenario bears a disquieting message, as well. Certain environmental and social conditions that were already problematic in 1995 persist or have worsened for example, poverty, inefficient energy use, inadequate water services and land pressure. Moreover, the story of "convergence" in the scenario should not be read as an assumption of fast approaching parity between the region and industrialized countries. Even if the optimistic rate of income growth assumed in the CDS is sustained, it will take around 200 years before average incomes in the region reach the present day average seen in North America. Important trends in the scenario are summarized in **Table 1**

Table 1. Summary of convention al development scenario indicators

Indicator	1995	2025	Unit or Quantity	Trend
Population	62	133	Million	Near doubling (2.6%/year)
CDP per capita	1,173	1,904	$ PPP/capita	Significant growth (1.6%/year)
Hunger	17 (28%)	28 (21%)	Million	Increasing absolute hunger, Decreasing as percentage
Deforestation	**304**	**499**	kha/yr	**Accelerating deforestation**
Cropland degradation	**227**	**87**	kha/yr	**Slowing but serious**
Biomass Reliance	**81**	**73**	% of final demand	**Gradually decreasing**
Biomass Energy Use	**444**	**1,121**	PJ	**Increasing pressure on resources**
Oil Dependency	**80%**	**87%**	Imports as % of non-biomass primary energy	**Increasing dependency**
CO2 Emissions	10	40	M tonnes/yr	Increasing, but very low
Water Stress	0.02	0.03	Use-to-resource ratio	Low, but lack of access continues

[3] The analysis was developed with the assistance of the PoleStar system. Abstract “Sustainable Development in West Africa : Beginning the process” SEI-Boston Center / ENDA, 1999.

In spite of the scenario's relatively optimistic vision of growing economies and average household incomes, it remains in many ways a bleak vision of the development prospects in the region. While poverty decreases as a fraction of the population, the absolute number of people in hunger increases more rapidly in the thirty years of the scenario than in the twenty-five years between 1970 and 1995. At the same time, the environment is progressively degraded through loss of forests and other ecosystems, degradation of arable land and local pollution around burgeoning cities.

In the energy sector, growing demand for biomass energy aggravates pressure on forest resources. Petroleum demand grows almost four-fold, deepening the region's dependency on oil imports. Nevertheless, even under the robust economic assumptions of the CDS, West Africa does not emerge as a significant contributor of greenhouse gases, as energy consumption per capita remains relatively low.

The persistence of absolute poverty , rapid population growth and increasing resource scarcity in the scenario could lead to social friction and conflict over increasingly scarce resources. In fact, such conflict could undermine the assumption of steady economic growth. In other words, long-range social, economic and environmental sustainability is highly uncertain under conventional development premises.

Policy Implications

The survey of indicators indicates that the CDS is not a development pathway compatible with sustainability. The scenario assumes "policy-as-usual", that is, an absence of integrated and coordinated efforts to meet sustainability goals. It provides a baseline reference for exploring the actions required for a transition to an alternative sustainable development scenario in the future.

Policy-making for the long term is not straightforward in Africa, even among the relatively stable UEMOA states. One of the CDS assumptions is the evolution of effective governance. This is not only a precondition of sustainable development, it is also a *sine qua non* for sustained effective long-term policy making. Even if stability is assumed, there is a sense of "emergency" to much planning in the area in the face of demographic change, economic vulnerability, security concerns and the threat of drought. Policy inevitably tends to concentrate on survival in the short term rather than development in the long term. Under these conditions, and given the unpredictability of many of the factors involved, finding the breathing space to construct credible and viable long-term policy strategies is indeed a challenge. Our purpose here is simply to raise questions that. may be of use for those policy-makers who assume that challenge.

Priority Areas for Policy-Makers

Among the areas deserving of special attention are the high incidence of hunger, the continuing reliance on inefficient energy resources (particularly biomass), the continuing under-development of water resources, and the potential for resource conflict. Although the CDS brings these areas into focus, it should be borne in mind that they are likely to figure in virtually any conceivable scenario for this thirty year period. Indeed, in a more pessimistic, historic-trend scenario they would appear even more pressing.

1 Hunger

The increase in absolute poverty in the region is perhaps the most unsettling feature of the scenario. The decrease in the fraction of population in hunger does not disguise a situation of increasing

poverty .Although the distributional inequality in UEMOA states remains below US levels, the exceedingly low average income levels and the lack of even the rudimentary redistribution net that exists in the industrialized countries together magnify the extent of the crisis. ln West Africa the problem is not so much the size of the gap between rich and poor, as the extent of the poverty affecting a majority on the bottom.

A clear policy goal should be the radical alteration of the existing agricultural production systems that, as the scenario shows, are not efficient enough or improving sufficiently quickly to meet the needs of the rising population. Considerable and speedy evolution towards intensification must be targeted, but such an overhaul is not attainable without an appreciable boost in external support.

Eventually, some form of effective social security system will need to be introduced to alleviate poverty. Such an initiative is both practically and politically difficult however, and ultimately dependent on political will at the national level. Furthermore, public spending on social welfare in Africa is currently subject to the international climate which is not presently supportive of such measures. Other steps may be taken, however , to ensure that the resilient informal networks of distribution and food supply that currently keep many of the poorest in West Africa from starving do not succumb to modernizing pressures. Taxation, social welfare, education and health care policy can all profit from a close examination of the existing "informal" networks by which West African societies have internalised various forms of social security .The question is how to make these systems compatible with the new demands of "modern" social structures in order to reinforce, rather than criminalize or uproot these systems.

2 Energy

Another troubling aspect of the scenario is **the projected increase in biomass use, by a factor of 2.5 for the region between 1995 and 2025 in the CDS**. This absolute increase occurs in spite of the decreasing share of biomass in the regional energy balance. The continued reliance on increasingly scarce biomass fuels will have undesirable impacts both on human development and the environment. The major factor in forest depletion today is changes in land-use, but fuel requirements already are a significant factor, and the two combined in the future may be explosive. In the meantime, the international conventions on desertification, climate change and biodiversity all indicate growing international pressure to further protect and extend forests. Such conflicting demands on this resource can have a directly negative impact on the populations closest to them, as has already been seen in Mali in the 1980s (Ribot, 1998).

Two policy approaches come into play here: **energy system modernization and forest management.** Energy requirements grow by a factor of 2.7 for the region between 1995 and 2025 in the CDS. To improve the quality and efficiency of energy available to the average West African user, the provision of electricity and modern fuels would have to increase to meet this demand and displace the predicted 73% met by biomass. At the same time, prices will have to decrease for the user, presumably as economies of scale come into play. A diversification of energy sources would allow a demand-driven increase in alternative sources of energy. Renewable energy sources are a possibility that have already been explored with some success throughout the UEMOA region. The Sahel countries in particular have exceedingly high insulation rates, ideal for large-scale introduction of solar power. Pro-active policy measures in East Africa, in particular Zimbabwe, have met with a certain success in disseminating this energy resource and these could be emulated and extended in the UEMOA states. Finally, with wise energy policies, the region can avoid replicating the energy inefficient path of conventional Northern development by promoting end-use efficiency and demand management.

ln terms of large-scale generation, hydroelectric power is a possibility although its exploitation in the region has to date been limited. Given the interactive nature of the water systems in the region, a regional approach to construction and distribution of hydropower would be the most rational. The issue is fraught with complications however, not least of which is concern about water constraints in the future. Any attempt to improve large-scale electricity generation in the region would require a diversified but highly coordinated policy, regional in nature, and taking account of the trade conditions (in petroleum and other fossil fuels) between the UEMOA states and their neighbours. It is worth noting that one of the UEMOA states' neighbours has considerable water resources (Guinea) while others have large crude oil deposits (Nigeria and Gabon). The current trading conditions make the proximity of these major resources all but irrelevant to the region. Another consideration requiring research is the viability of increasing the number of regional refineries.

Forest-management policy has advanced in recent years, with forest protection, management and renewal schemes emerging throughout the region. At present, however, there is tension between the international drive to maintain forests and the local need to exploit them. Research is needed to determine how the increasing need for cleared land, for both settlement and agriculture, can be aligned with the continued high demand for wood fuel on the one hand and plans to preserve and renew forest land on the other. Without clear and coordinated policy in this area, conflict is likely.

Water

Water withdrawals in the CDS are small relative to water resources in the UEMOA states, but this reflects inadequate access for much of the population and underdevelopment rather than an *a priori* abundance of freshwater sources. The indications are that, in order both to grant access to water to the population at large and to feed the increasing demands of irrigation, industry and power generation, a strategic long- term policy for water use and infrastructure must be devised. The current under- exploitation of water resources has the advantage of allowing such a policy to be conceived and executed in a timely manner, rather than being imposed upon an already unsustainable system.

Water exploitation is emerging as a major potential source of conflict for the next century .Africa has some experience of the dangers of confrontation over the use of shared resources in the Congo basin, and the continuing tension between Ethiopia and Eritrea over control of the upper Nile (Okidi 1994). West Africa has not yet experienced such conflicts, but there too the resource is not shared equally by all countries. A regional approach to water exploitation would allow maximal efficiency and head off potential conflict. The UEMOA provides an important regional forum for water development. It provides a structure for water allocation between states, resource development and ecosystern protection, which could help West Africa avoid water conflicts that may deepen in the years to come. Water sharing should become a priority for negotiation in the near future, if it is to become a strong foundation for regional development

Other Issues

Two further critical areas of policy concern are the **rapid urbanization rate and population-driven land pressures.** The latter has long been recognized as a major cause for concern by African policy-makers, but reform has been hampered in the past by the complications of traditional land ownership arrangements, inherited colonial structures and the demands of a modernizing economy. It will become increasingly urgent to overcome these difficulties, as vying pressures for land use contribute to land degradation and settlement tensions. Likewise, the rapid growth of cities will require coherent urban planning, which today is minimal. At the same time, efforts can be made to improve economic conditions in rural zones to lessen rural-urban migration.

Chap. 3 - Identification of major Sustainable Development indicators

The preceding chapter illustrated the principal global indicators used in conventional models designed to monitor significant trends in west Africa (Table 1). These indicators are important, as they provide a particular region with a system of integrating current significant trends (all things being equal, that is). Consequently, they enable a global assessment to be made of opposing trends or of reinforcement of trends, in accordance with policies implemented within the sub-region and in a more general way, in accordance with the phenomenon of globalization of economies.

Indicator	1995	20...	Unit or Quantity	Trend
Population CDP per capita Hunger Deforestation Cropland degradation Biomass Reliance Biomass Energy Use Oil Dependency CO2 Emissions Water Stress				

On the other hand, considering Senegal as a specific case, and in order to produce the appropriate indicators (both on the national and regional levels), the indicators selected are those designed under the framework for Common Development and climate scenario indicators). These indicators are appropriate for Senegal and they facilitate a general overall coherence with the other country studies.

The first quantification of these indicators has been completed for the year 2000. This includes macro-economic indicators (table a), and indicators for the two sectors studied : the Energy sector (table b), and the Food security sector (table c).

Table a - National / Macro- economic Indicators (Current Development Trend (CDT) and Sustainable Development Vision (SD) cases).

	2000	2020…	2100
GDP ($2000)	5.2 billion US$		
Energy Sector product ($2000)	10.3 % of GDP = 0.5 billion US$		
Food sector product ($2000)	= 0.95 billion US$		
Primary Energy Supply (GJ)	1476 GWh		
Power Supply GJ)	241 MW		
Domestic food consumption • Grains • Meat • Others • (weight units)	 1256.0 (Thousand tonnes) 115028 (Tonnes)		
Water consumption • Drinking water • Irrigation • Other uses	 25 litres / day / habitant 71 Kha de superficie irriguée (0.37% of total surface area)		

% of people below poverty limit (1)	% of population below international poverty line ($2 per day) = 50% Human development index (rank out of 174 countries) = 158 Human poverty Index (HPI) = 49.6%		
GHG emissions • CO2 • CH4 • N2O • Industrial gases T CO2 eq	Total GHG emissions (CO2 + CH4 + N2O) = 17.6 Tg ECO2 10.73 Tg E CO2 (61%) 6.16 Tg E CO2 (35%) 0.71 Tg E CO2 (4%) -		
Other local pollutants	-		

(1) UNDP definition, 1$ per day

Table b - Energy Sector Indicators (CDT and SD vision cases)

	2000	2020…	2100
Economic Costs ($ 2000)			
Primary Energy Consumption in %) +Coal (charcoal) *Oil (crude oil) ° Petroleum products *Gas Nuclear ° Hydropower +Traditional biomass (wood) Modern biomass ° Solar (+ some wind energy)	Final Energy consumption = 2,279,000 million tonnes of oil equivalent (toe). +220 Ktoe *867 thousand tonnes of oil eq ° 570 thousand tonnes of oil eq *100 thousand tonnes ° 64 ktoe +53600 T/J -° 1000 KW		
Final energy consumption Electricity (Total production) Final energy consumption: Industrial processes Cooking Space heating	Final energy consumption: = 2,279,000 million tonnes of oil equivalent (toe). 1476 Gwh 264 thousand tonnes of oil eq (574 Gwh of electricity) 931 thousand tonnes of oil eq -		

Transport Other	587 thousand tonnes of oil eq -		
Local air pollution SO2 NO2 Particulates (Weight units)			
GHG emissions TCO2 eq : CO2 CH4 N2O	Total GHG emissions (CO2 + CH4 + N2O) = 17.6 Tg ECO2 10.73 Tg E CO2 (61%) 6.16 Tg E CO2 (35%) 0.71 Tg E CO2 (4%)		
Energy access: _ Share of business sector with power access (%) - Share of households with power access (%) - Share of business with efficient energy supply (%) - Share of households with efficient energy supply	 Nationwide = 32 % Urban areas = 56.4 % Rural areas = 8.3 % Urban rural Charcoal 46 % 3.1 % Gas 34.9 % 1.5 % Wood 16.1 % 94 % Electricity 0.6 % - Oil 0.4 % 0.9 % Others 2 % 0.5 %		

Table c - Food Sector Indicators (CDT and SD Vision cases)

	2000	2020…	2100
Economic costs (1) ($2000)			
Main products (quantity) • Cereals • Rice • Meat • Milk	 853,145 tonnes (approx.1million tonnes) 190,000 tonnes 118,169 tonnes 110 million litres		
Total food production (Economic output): • Imports	Cereals = 1 million tonnes Meat = 118,169 tonnes Milk = 110 million tonnes Fish = 250, 000 tonnes **Food Imports** Rice imports = 410,00 tonnes Wheat flour = 198, 000 t Sugar = 81, 000 tonnes Milk products = 48, 000 t Potatoes = 13, 000 tonnes Onions = 15,000 tonnes Fruits = 10, 000 tonnes **Food Exports**		

• Exports	Groundnut oilcake = 48,000 t Groundnut oil = 46,000 t Fruits = 5,000 tonnes Fish (industrial) = 100,000 t		
Pollution (non GHG) • Water • Waste • soil • land degradation			
GHG emissions • CO2 • CH4 • N2O • Industrial gases T CO2 eq.	Total GHG emissions (CO2 + CH4 + N2O) = 17.6 Tg ECO2 10.73 Tg E CO2 (61%) 6.16 Tg E CO2 (35%) 0.71 Tg E CO2 (4%)		
Food and water access: • Share of undernourished people (2) • Share of people without improved water access (2)	**Access to safe water:** Access to safe water nationwide = 50% Access to safe water in rural areas = 28% Access to safe water in urban areas = 72%		

(1) Economic output. Prices are based on social cost concepts, but environmental externalities are excluded

(2) HDI definition

Chap. 4 - Review of current national plans

Depending on the method of analysis proposed, National plans should be perceived in terms of Senegal's long term objectives, which comprises three levels :

Long term development objectives

The long-term developmental objectives of Senegal today are three-dimensional.

- a regional dimension, under the framework of NEPAD which prioritises closing the gap (infrastructural and technological) with industrialised countries.

- a national dimension, with the objective of poverty reduction, primarily in rural areas and also to double per capita in 2015.

- a combination of the two latter dimensions, having the objective of prioritising sub-regional actions and using West African integration as a means of development.

Judging from current interactions, long term developmental objectives therefore appear to be an articulation of the different levels (regional, national, etc.), bearing in mind that "the room for manœuvres" of any country acting in isolation is very restricted.

The previous publication of March 2002 raised the issue of a reference framework for the participatory approach and case studies: regional/ NEPAD, sub regional /West African integration, individual countries.

- NEPAD in its real sense stresses the distinction between development and environment; since on the national level these synergies are hardly researched. The implementation of developmental and environmental policies is based on two different issues but they both involve closing the gap highlighted in the scheme above.

- In West Africa (UEMOA), les objectifs relèvent principalement de deux domaines :
- achieve convergence between policy and macro-economic policy indicators
- coordinate sectoral policies (as energy policies)

- Senegal's policy framework is inserted in between two strategies: development and environment**.**

The current plans under study include the national context, as well as the two sectors chosen for study, namely : the energy sector and the food security sector.

4.1 - National priorities

1. - Development, plans, policies and strategies

Regarding the first aspect, state voluntarism is manifest: policy papers, development strategies and macro projects can directly be implemented on the basis of the financial resources available and in compliance with macro-economic equilibrium, fixed by the International Financial Institutions.

The 8th development plan centred on an improvement of living standards, gave priority to rural development, the promotion of private initiative, the emergence of small and medium enterprises, capitalization of human resources, regional development and an extension of the role of the private sector. To this end, new strategies were adopted which placed the emphasis on food security, energy security, improvement of the quality of life and housing, sustainable economic growth and the security and stability of financial resources.

The 9th Development Plan (1996 - 2001), had as its main objective, the achievement of healthy and sustainable growth. This development plan defined nine strategic orientations :

- Render the regulatory framework more conducive to the promotion of healthy competition between the different stakeholders, that is advantageous to greater investment
- Strengthen the dynamics of sub-regional integration and International cooperation
- Develop private initiative
- Create a financial environment that is adapted to the needs of various activities, and enhance the improvement of national savings
- Improve the quality of national involvement in the provision of basic services and infrastructures
- Strengthen the development and integration of the different regions
- Strengthen and facilitate access to information and promote social communication
- Further the capitalization of human resources and attenuate unfavourable demographic trends.

Senegal: Current plans

- **Social and economic Development**

The New Partnership for African Development
Structural Adjustment Policies in Senegal
Poverty Reduction Policies
Policy paper on decentralised rural development

- **Private Sector**

Private sector development strategy
Privatisation in Senegal

- **Health Care and Nutrition**

Policy paper on nutritional development
Integrated health development programme (IHDP)

- **Rural Development - Agriculture - Livestock Farming**

Strategic orientation documentation on agricultural policy
Policy paper on the institutional development of the agricultural sector
Policy paper on livestock development

- **Education**

Ten year educational training programme

Source: Senegalese Government, 2002

The main policy orientation for the year 2003, will be the implementation of the PRSP (Poverty Reduction Strategy Program), on which expected growth are based (rate of 6%). At the same time, a new economic and financial programme is currently under negotiation, between the government and the IMF.

2. - Environmental plans, policies and strategies

As for the second aspect, the ratification of most of the Conventions relating to the environment and to human development require the implementation of a participative process, which will terminate in the finalisation of a plan or implementation strategy of the Convention in response to the conventional obligations of the countries.

Senegal : Documents List

- The National Environmental Action Plan
- The National Action Programme for Fighting Desertification
- The National Strategy and National Action Plan for Conservation of Biodiversity
- Initial Communication in Climate Change
- The National Strategy for action against Climate Change
- The National Plan for the Fight against Poverty
- The Action Programme for Eliminating Ozone Damaging Substances
- The National Plan for Sanitary and Social Development
- The Plan of Action 1997-2000 for Women

Institutions and forums for dialogue were put in place in preparation for following up these strategies and plans of action : The National Commission for Sustainable Development, The Higher Council for Natural Resources and the Environment, The National Committee on Climate Change.
The next United Nations Conference on Sustainable Development (Johannesburg, 2002) will be an evaluation stage for Senegal's progress in the search for sustainable development conforming to the principles of Agenda 21.

Source : "Senegal and the Challenge of Sustainable Development".- ENDA TM, 2002.

Plans and strategies abound ; the main constraints and obstacles encountered, arise during their implementation.
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1 – Each programme is usually treated separately and in isolation , without any attempt to coordinate transversal or inter-ministerial approaches. What finally emerges is the compartmentalization of measures, wherein individual organs of the central administrative body,

manage their own projects independently. This absence of synergy imposes a check on the effectiveness of measures put in place. The main duty of the central administrative body is to coordinate projects, especially since within the same administrative set up, there could be much duplication of effort, arising from the delegation of duties and prerogatives. This state of affairs is quite evident in departments in charge of the environment, where one finds a certain amount of compartmentalization between units in charge of the fight against poverty, climate change or bio-diversity. In short, as has often been pointed out, a collection of projects does not constitute policy.

2 - Development priorities are generally determined by national authorities, who can (to varying degrees and depending on the country in question) encourage the participation of the various stakeholders. The Rio Summit and the related instruments served to reinforce this situation. Indeed, each of the environmental conventions calls for the generation of national reports, without taking into consideration pre-existing plans: National Action Plans for Desertification, National Communications for Climate Change, Biodiversity National Strategies, and so on. By the same token, Agenda 21 has led to the development of National Strategies for Sustainable Development. Based on varying and unmonitored degrees of consultation at the national level, these policy orientated documents often have very little impact on ongoing or future national activities. There are no mechanisms or motivations to peg them to the national development plans and hence they remain isolated and unused.

In reality, effective implementation through the translation of these policy orientations into concrete economic and social policy (manifested in allocations in the national budget), is controlled by the International Financing Institutions (IMF and The World Bank). This quickly brings to fore elements of the various structural adjustment plans and related conditionalities to which these governments have been subjected. Hence political decisions on the implementation of relevant development plans are externalised: the completion of financing and funding arrangements are decided 'elsewhere'. This disconnect is often the root cause of indebtedness. The problem is however more complex and larger: where important projects are concerned, one finds that not only are they decided elsewhere, but in addition both the identification and preparation of the project are carried out by foreign experts appointed by the International Financing Institutions.

Any sound sustainable development effort, at the global level, cannot afford to allow billions of the world's poor to lose control over policy orientations involving their own development. This is contrary to the very objectives of Agenda 21.

4.2 – Energy Policy as a response to development and environment plans : "Energy sector action plan for sustainable development "[4]

To close the "gap", Senegal's energy policy framework has to embark on : Energy system modernisation and forest management, inserted in between two strategies: **development and environment.**

1. Brief presentation of the sector

The energy sector plays a very important role in Senegal's economy. It contributes towards the different areas of economic activity, taking a very important share of the GDP.

Senegal has a modest but relatively diversified energy-resource base. However, its use is associated with either major environmental risks in the case of forest-based wood and charcoal, or substantial investment in the case of fossil fuels and renewable, including hydroelectricity, solar and wind power. Senegal is largely dependent on imported oil products for its energy requirements. Modest amounts of

[4] Rapport national du Sénégal, SMDD, Johannesburg 2002.

oil (69,982 barrel) and gas (234,791,079 Nm^3) have been produced from Diam-Niadio Kabor near Dakar between 1986 and 2000. All the gas produced at Diam-Niadio has been used by the utility for power generation. There is no residential gas-distribution network in Senegal. The country's hydroelectricity potential, based on the Senegal and Gambia rivers, is estimated at about 1,000 MW capable of producing 280 GWh in an average year. A dam on the Senegal river in Mali is being built by the *Organisation pour la Mise en Valeur du Fleuve Senegal* (OMVS).

The potential supply of wood energy is not well known. In 1980, woodland was estimated at 12 million hectares, covering 60% of the country. Closed and open forests represent 20% of the woodlands and Savannah, while steppes represent 80%. Depending on the source and assumptions used, total productivity was estimated for that same year to be between 8.6 and 13.4 million cubic meter per year. Availability was estimated in 1980 at 7.3 million m^3/year. According to the "Plan RENES 2000", it is acknowledged that some 80,000 hectares of forest disappear each year due to land clearing for agriculture, bush fires, production of charcoal and wood fuel, overgrazing, and lack of rainfall. Annual deforestation for charcoal production alone is estimated at more than 30,000 hectares/year.

Total final energy consumption in Senegal in 1998 was 2,279,000[5] million tons of oil equivalent (toe), giving a per capita energy consumption of 253 kg of oil equivalent, which is relatively high compared to most West African countries. Forest-based traditional fuels (wood fuel and charcoal) and agricultural residues used mainly by households for cooking represented 60% of total energy consumption. Oil products account for 38. Total consumption of wood fuel in 1998 was around 1,244,000 million tonnes, the bulk of which was consumed in rural areas. Up-to-date information and estimate on charcoal use are not reliable. In 1992, charcoal consumption was estimated at 330,000 tonnes, equivalent to 1.8 million tonnes of wood fuel. Around three-quarters of this was consumed in the principal urban areas. The conurbation of Dakar alone consumed an estimated 150,000 tonnes.
The Energy Balance Sheet for 1998 shows Gross energy consumption of 2.28 million TEP, which can be broken down as follows :

- biomass 57%
- petrol 38%
- steam 4%
- natural gas less than 1%
- transformed energy 1.07 million TEP (crude petroleum, petroleum products, biomass for production of electricity, wood for preparation of charcoal),
- Net consumption of 1.5 millions TEP comprising 46% wood energy, 40.6% petroleum products and 6.6% electricity;
- Photovoltaic solar energy (and some eolian energy), 1000 KW

2. The Main Constraints Facing the Sector

Senegal's energy sector is mined by the following constraints :

- The not so glimmering technical and financial situation of the national electric power authority, SENELEC;
- The need for enormous financial investment to modernise the energy sector both at the demand and supply ends ;
- The relatively insignificant role given to renewable energy, despite the important potential of the latter;
- Very inadequate knowledge of the nation's energy potential, especially in the area of petroleum exploration;
- A not so viable energy information system, which does not permit any coherent or credible planning of the sector.
- Weak capacities, both on the national and local levels, which constitute an obstacle to the implementation of strategies;

- Lack of coordination between the various stake holders operating in the different branches of the sector;
- A low level of implementation of recommendations and promotion of ecologically viable technologies and strategies.

3. Recapitulation of the Recommendations

- Assist government in setting up the instruments of a very aggressive and coherent policy for energy control;
- Improve the productivity of the national electric power company;
- Strengthen the capacity of the oil refining company, so that it conforms to international norms relating to petroleum production;
- Promote petroleum research,
- Promote renewable energy;
- Seize the opportunities offered by International conventions in the area of technology transfer;
- Undertake policy commitments, with a view to promoting the development of ecologically viable technologies and strategies;
- Support policies on the diversification of energy sources, especially in the area of domestic fuels;
- Support sub-regional initiatives, such as interconnecting electric networks and gas pipe lines;
- Take account of the economic situation of developing, non oil producing countries, when fixing world prices of petroleum products;
- Encourage the establishment of accessible, centralized, systematic and complete energy data banks;
- Promote the dissemination of information on energy;
- Enhance the development of local expertise, with proven ability in the field of energy;
- Promote development- research in the field of energy.

Table 2. Action Plan

Sub-sector	Objectives	Strategies	Activities	Expected Results	Indicators
Petroleum Products	Reduction of the cost of electricity in Senegal; --- Elimination of lead in petrol and sulphur in gas oil --- Develop more reasonable prices	Promotion of the Senegalo-mauritanian sedimentary basin --- Enhance the development of lead - free petrol and sulphur - free gas oil --- Enhance cooperation between oil producing and non producing developing countries	Execution of petroleum prospecting surveys --- Modernisation of the means of producing the SAR --- Organise meetings on the exchange of petroleum products between developing countries	More detailed knowledge of the basin for exploitation of petroleum --- lead -free petrol and sulphur -free gas oil --- World prices of petroleum products that are more equitable and just	The quantity of petroleum reserves and the cost of petroleum imports --- Level of lead in petrol and level of sulphur in gas oil --- Cost of petroleum products
Electricity	Satisfaction of demand in quality and quantity --- Increase in supply with reduction of tariffs	Increase production, through increase in the level of investments --- Encourage and support regional and sub-regional	Construct more efficient electric power stations and enhance the connection of electric grid systems between neighbouring countries; Raise the level of investment and efficiency of SENELEC by encouraging investment from the private sector . --- Participate actively in meetings relating to integration	Availability of electricity --- Improved access to electricity	Continuous supply of electricity --- Existence of functional energy exchange networks

		connections of electric network grids	between regional energy systems (OMVS, OMVG, WAMEU, ECOWAS, NEPAD, etc); Develop regional and sub-regional energy exchange programmes.		and effective connections of electricity network grids between countries.

Renewable energy	to increase the rate of electrification, especially rural electrification Development of productive activities in rural areas. --- Recourse to environmentally friendly and clean technologies	Sensitisation of stake- holders and integration of renewable energy in national electrification policies --- Get policy makers to become aware of the danger of using polluting technologies, by producing documentary on the adverse effects of such technologies	Formulation and execution of energy programmes in rural areas, emphasizing the use of renewable energy. --- Organise public information and sensitisation campaigns for decision makers on clean technologies, especially renewable energies (solar, eolian)	Increase in income and in the standard of living, in rural areas --- Change in mentality and behaviour, with respect to clean technologies	The level of rural electrification and income obtained in rural areas --- The number of power stations installed, which use clean technology.
Domestic fuels	Reduction of pressure on forests	diversification of domestic fuel	Develop and execute projects using alternative fuels such as kerosene, briquettes made from agricultural or agro-industrial wastes. Reduction of duty on butane gas ; reforestation.	Establishment of energy shops; Decrease in wood and charcoal consumption	level of consumption of firewood and charcoal

Others: energy control, professional training	To contribute towards satisfying energy demands and to achieve less pollution of the environment --- Acquisition of technological knowledge --- To make information on energy more available --- To facilitate energy exchange --- Development of local expertise on energy --- Recourse to energy resources of high quality, available in adequate amounts and to cleaner and	Emphasize energy control --- Encourage and develop International cooperation on energy --- Support energy Institutions to set up data bases in their respective fields. --- Publication of information bulletins on energy. --- Encourage and reinforce professional training in all the energy sectors; --- encourage end reinforce Research/development training in energy sector	Establishment of an energy control agency, with an appropriate regulatory framework --- Implement south-south and north-south technology transfer programmes --- Creation of sectorial data bases within the energy sector; --- Establish information networks on energy on the national regional and international levels --- Undertake capacity building within the energy sector in analysis, evaluation and planning --- Set up a team of experts in research-development, to operate technologies efficiently	Increase in supply and reduction of negative impacts on the environment --- Increase in local expertise on energy --- Availability of statistics on energy; --- Existence of media support and network of experts in the field --- Existence of qualified human resource persons --- Existence of accessible and clean energy technologies and resources.	The quality of energy services --- Scientific, technical and technological potential --- Existence of energy data banks --- The number of operational media support networks --- The quality of available technical and scientific personnel --- The quality of clean technologies and resources available

	more accessible technologies				

For a more detailed analysis we can focus on two elements :

- Reforming Senegal's electrical power sector **(Privatisation of the electric power company and Special agency for electrification in rural area)**
- **Participatory approach for forest management** and Support substitution strategies : in particular substitution wood fuel /LPG (see Chap. 5 : identify examples…)

Undoubtedly[6], the most common reasons why governments in these countries embark on reforms, appear to be due to **constraints related to investments and mis-functionning** of the management systems of African electrical power companies.

4. Reforming Senegal's electrical power sector : a new approach

Reforming Senegal's electrical power sector falls within the framework of a general reformation of the energy sector, which is itself part of a global economic adjustment strategy, aimed at creating the right conditions for rapid and sustainable economic growth and reduction of poverty. Under the country's economic policy, the energy sector is **assigned the objective of reducing the technical costs of production**, in order to strengthen the competitive edge of companies. This involves :

- The **eradication of inefficiency** ;
- the **reduction of supply costs** (usually borne by the consumer) and,
- **enhancing the funding** of the sector's development.

To achieve this, it would be necessary to :

- **Redefine the role of the state ;**
- **encourage a wider participation of the private sector ;**
- **Liberalise this sector ;**
- **Create the right conditions for healthy competition**.

This **strategy** involves the adoption of measures which include, amongst others :

- A **modification of the legal and regulatory framework**, so as to encourage a high level of competition and participation of the private sector in investment ventures and in the management of the electrical power sector.
- The **privatisation and restructuring of SENELEC**.

[6] "Power Sector Reform and Sustainable Development : Brainstorming Meeting".- Alioune Fall, Président de la Commission de régulation du Sénégal - communication IEA, may 2002, Paris.

Properties of Senegal's Electric Power System

- An exclusively thermal production system, which uses imported petroleum products (heavy fuel and diesel oil) ; without taking account of the low consumption of local natural gas.
- Some statistical figures :
  - Power installed (2000) : 422 MW
  - Production (2000) : 1476 GWh
  - Computed energy : 1150 GWh
  - Selective power (2000) : 241 MW
  - Number of subscribers (2000) : 398,000
  - Total turn over (2000) : 84 billion CFA francs
  - Personnel : 1706 (237 professional staff)
  - Rate of electrification (in 2001) :
    - Nation wide : 32 %
    - Urban areas : 56,4 %
    - Rural areas : 8,3 %

5. - Rural areas electrification

Unlike other experiences with electric power sector reforms undertaken in other African countries, the reform undertaken in Senegal had as its main objective, the expansion of electricity supply to rural populations.

To this end, one of the major innovations introduced into the institutional framework of the sector, was the creation of the Senegalese Agency for Rural Electrification (ASER). The principal mission of the latter is to enhance the access of rural populations to electric power supply. To this effect, ASER provides technical and financial assistance in support of initiatives relating to rural electrification.

It should be stressed that since 1995, the state has made considerable financial effort to cover rural electrification programmes executed by Senelec, under agreements signed with the Ministry in charge of Energy, concerning delegated public works. Nearly 20 billion CFA francs (30.5 million euros), provided by the national budget, have gone towards extending the rate of electrical coverage in the rural areas. However, those programmes have mainly been beneficial to the more densely populated boroughs, which (with only rare exceptions), were electrified by extending the existing SENELEC network.

Apparently, this arrangement, based on a single operator (SENELEC) ; a single investor (the state), a single technology and a single approach ("top-down" approach) ; without any participation of consumers or consumer-groups was untenable.

There have been cases where, after having established electric power substations and power lines in certain areas, SENELEC could not operate the services (even after ten years), due to lack of subscribers. In other villages, the sparse distribution imposed by lack of resources, only aggravates the frustration of the local populations living in areas not covered by the network.

Unquestionably, one of the greatest ambitions of ASER is to be able to replace the present single pole system, with a multi-pole system, consisting of several stakeholders using a variety of technologies and supported by different categories of investors. An arrangement that will give beneficiaries and local communities a central role.

To this end, the following principles have been adopted, based on past-experience with rural electrification :

- Rejection of uniformity in the technology employed, by instituting measures, which consist of, on the one hand, a revision of technical minimas (relaxation of norms, return to single mono-phase systems, etc.) and on the other hand, investment in solar energy, particularly in photo-voltaic solar energy, whose users by the year 2005 will be 20,000 out of a total of 104,000 households with access to electricity. The figure for 2015 will be 70,000 out of a total of 270,000 ;

- Emergence of new stakeholders along side SENELEC. These operators should be able to contribute about 70 % of the total electrification by the year 2015. The achieve this objective, the national territory has been split up into concessions. The award of legal concessions will be by tender ;

- Introduction of innovative financial mechanisms which combine (amongst others), subsidies, loans at low interest rates, contributions from users and local communities etc. ; the objective being to ensure the viability of electrification programmes undertaken by private promoters ;

- Greater participation of the local population in identifying the needs that have to be satisfied and the services which will be offered, in accordance with the provisions for rural electrification.

With the implementation of the new organisational scheme and innovative financial mechanisms, one can safely say that it is not only on paper that things one moving, but also on the ground.

The wealth of experience already available, the ingenuity of the new concepts based on sustainability and the ruffling of activity that is already perceptible in the execution of pilot programmes, indicate interesting perspectives for decentralised energy.

Initiatives already taken by some international stakeholders, the local private sector and the interest shown by financing organisations, notably the world bank and the African Development Bank in the new strategy is in harmony with the government's political will to make electricity accessible to rural populations, by accelerating the rate of rural electrification in Senegal, over the period 2000 – 2015.

The issue of access to electricity does not only concern the rural areas, but also includes the cities, where 40 % of the inhabitants are without electricity. Being located within the concessions of SENELEC, extending electric power supply to such urban populations, depends entirely on SENELEC's capacity to respect the obligations of its conditions of service, contained in its concession.

The privatisation of SENELEC, by creating the right conditions for private investments and improving the quality of management, should facilitate the extension of electricity services to sub-urban areas, especially since it is the responsibility of another institution (ASER) to provide electricity for rural populations.

6. - Energy and NEPAD for West Africa

The NEPAD approach consists of implementing a volontarist policy- creating the right infrastructures that will bring about an increase in the size of the energy market, so as to obtain a commensurate increase of supply and demand. It depends on:

1. economic integration so as to loosen the constraints of the restrictions of national markets (which are obstacles to the development of energy potentials)
2. the interrelations between electricity and gas in order to obtain a balance between countries with deficits and countries with surpluses.

All of this requires the implementation of projects which promote integration.

- **Petroleum products:** Gazoduc Afrique de l'Ouest, Nigéria-Méditérannée and the establishment of a common system of supplying liquid and gaseous petroleum products.

- **Electricity:** creation of a regional market through the WAPP (West African Power Pool), introduced under the framework of ECOWAS with interrelations between Zone A (BF, Ngr, Ben, Ngi, Gha, CdI, Tgo) and Zone B (Mli, Sen, Gbi, GB, Gun, SL, Lbi) and hydroelectric projects. 17 projects are envisaged.

- **Renewable Energy Resources:** macro- and micro-projects including units for manufacturing photovoltaic modules in BF.

Although NEPAD recommends an extension of SADEC's "biomass energy" experience, there are no projects of this nature in the project references.

4.3 – Food Security

1. - Agriculture and food security : the state of play

Agriculture, in the broad sense, is the largest economic sector in Senegal, and is practised by some 60% of the active population. Crops are grown on almost 60% of the country's 3.8 million hectares of arable land, while another 22% is deliberately left fallow. Furthermore, the country has valuable underground water resources covering most of its territory and surface water that can be used for irrigation purposes.

At administrative region level, arable land resources are relatively weak and are very unevenly distributed. Two-thirds of the country's arable land are concentrated in just three zones: Louga (13%), Casamance (20%) and Sine Saloum (30%).

Any strategy aimed at reversing the negative trends of the past by developing agriculture and managing sustainable natural resources, must increase the amount of land cultivated. This is especially clear when one considers that valorising the entire surface area of the country would only give an average of 0.79 hectares per capita. With population density in arable land areas scheduled to soar from 215 inhabitants per km² to 360 by 2015 if current demographic trends continue, pressure on land is only set to intensify and, if the population is to be fed, productivity must rise accordingly.

Both productivity and the amount of arable land need to be double that of their existing production capacities. This severely jeopardises forests and natural reserves, and tree-felling and land clearances have already begun in many regions.

In economic terms, the primary sector (crop and pastoral farming, forests and fishing) contributed an average of 20.5% of GDP between 1995 and 1998, and only 18.5% in 2000. Growth in the sector has been uneven since 1990, and featured several sharp drops, while that in other sectors has seen steady increases[7].

Crop-growing (which accounts for about 45% of the GDP of the agricultural sector) fell by 2.6% between 1995 and 1998. Pastoral farming (about 35% of the primary sector's GDP) grew by 4.2% over the same period. Maritime and continental fishing, which represent 13% of the primary sector's GDP, grew by 13%, mainly because of the influence of the devaluation on export income. The forestry sub-sector (4% of the primary sector's GDP) grew less spectacularly, by 2.4%.

Seafood resources, caught mainly through artisanal fishing, provide 75% of required animal proteins but are being depleted by over-exploitation and the changes in the flow of the River Senegal since it was dammed. Moreover, now that more and more catches (especially of noble species) are sold to industrial processors, supply on internal markets is dwindling and prices for householders are rising.

Fruit and market gardening have performed well, particularly since the devaluation and thanks to concerted efforts by several actors to diversify. Market gardening production jumped from 152,000 tons in 1990 to 180,000 tons in 1997. Meanwhile, fruit production went from 100,000 tons to 120,000 tons. Nonetheless, there are still production deficits in several important zones, particularly in urban areas.

[7] The secondary sector grew by 7.8% between 1995 and 1998, while the tertiary sector increased by 6%. Unlike these two sectors, the primary sector was unable to take advantage of the economic conditions engendered by the devaluation of the CFA franc.

Gathered food, which has for a long time helped meet the consumption needs of some rural populations, is becoming harder to find because of droughts, inappropriate harvesting methods, and tree-felling.

The overall result then, is that in spite of the adjustment policies in the agricultural sector, performances are still hampered. The fact is agriculture seems to be locked into a spiral of downward productivity leading to drops in income, and, consequently, drops in savings and investment that, of course, accentuate the decline in productivity still further.

The estimated average per capita production for the decade just ended is only 78% that of the 1987 level. Having to resort to importing cereal (especially rice, of which an average of 800,000 was imported for each of the last five years) represents a heavy burden for the national economy. Similarly, pastoral farming, in which some 350,000 families work, is providing much less meat for consumption than in the recent past (11 kg per year per capita in 1997 compared to 20 kg in 1960).

So we see that agricultural policies and strategies have still not managed to alter the fact that Senegal is a net importer of food. They have also failed to tackle the process of impoverishment. All throughout the period from 1960 to 1980, prices paid to producers for cash crops (mainly for peanuts) were very low, as they were for subsistence crops too. Rural income has been heading steadily downwards, dropping from 22,100 CFA francs in 1960 to 15,400 CFA francs in 1965 and on to 12,000 in 1972 and 10,900 in 1977.

These figures reveal how poverty is spreading in rural areas, which is where 78% of the country's poor live (mostly women)[8]. Poverty is more pronounced in regions where there is little agricultural diversification_and that are relatively fre of emigration. (Kolda, Fatick and Kaolack). There are deep disparities in terms of poverty between rural and urban areas and also between regions. Again, it is worth reminding ourselves that the agricultural policies that have been implemented to-date have been of no help to the poor and, indeed, have been marked by sharp inequalities in the way income has been distributed, meaning money is being concentrated in the hands of a small number of households.

Chronic malnutrition is par for the course in rural areas – this is due to the lack of access to factors of production, unstable climatic conditions, low levels of education and literacy, and the difficulty of promoting the diversification of income generating activities. Where there is malnutrition in urban areas it is because of exclusion from the (formal or informal) productive economic system. For more remote regions, access to decent food is often further hindered by distribution problems or difficulties with commercialising, preserving or processing.
In 1994, 34% of the population did not reach the required daily energy intake of 2,400 calories. And over the years, the population's food consumption has plunged, especially when it comes to animal protein (meat, fish, and milk). Poor households, who were already spending 70% of their income on food, were seriously hit by the devaluation of the CFA franc in 1994, which sent the prices of their basic foodstuffs soaring.

[8] Research carried out as part of the DIAPER project shows that almost 44% of Senegalese households have an annual income of less than 600,000 CFA francs. The figure rises to 61% in rural areas where a family's income comes mainly from non-agricultural activities (39%). Income from crop-growing and pastoral farming accounts for a paltry 23%. Almost all farmers (91%) have not completed primary school. Rural women are an especially vulnerable group because of their illiteracy and their poor health and nutritional condition. Moreover, when it comes to production women find it very difficult to get access to land and agricultural services (including credit).

Households had to invent all manner of self-adjustment strategies to cope with their decreased food intake, eating less meals less often and removing some foods almost completely from their diet. While rural-dwellers on average suffer from a much lower energy intake than their urban counterparts, they seem to eat more protein than city-dwellers, even if this is mostly from vegetable rather than animal sources. On the other hand, lipid intake is higher in urban areas than in rural areas with the exception of pastoral farming zones such as the Ferlo.

In spite of the high agricultural potential, per capita cereal production is in constant decline because of the general degradation of the environment, adverse climatic conditions, low investment in the sector and the malfunctioning of some of the government's development efforts. According to some estimates, at present only about 52% of the nation's food needs are met by internal agricultural production.

Of all the cereals grown in the country, only rice is produced using irrigation, which means it mostly escapes the harmful effects of low rainfall. All the same, the promising performances recorded between 1991 and 1993 were followed by consistent declines in production, which, for example, plummeted from 193,000 toms in 1995 to 155,000 tons in 1996. This decline can be blamed on a variety of obstacles relating to land law, farm and water management, and institutional issues[9].

As for rain crops, they have been influenced both by external factors and by state policies. For example, when the state stopped providing education and inputs for peasants, a long time passed before it started taking measures to support and encourage the private sector to take up the baton. In addition, the allocation of investments in ecologically sound agriculture was disproportionate; thus, public investment in the peanut basin, home to 68.5% of the country's cultivated land, has dropped steadily over the last ten years to the point where it now only accounts for 4.8% of the total.

2. - Policies for adjusting the agricultural sector

In the late 1970s, the crises in agricultural production caused by structural constraints and other factors (climatic conditions, balance of payments woes, inefficient public investments, etc.) led to the adoption of structural adjustment programmes[10].

The main adjustment measures for the agricultural sector were:

- The liquidation of the ONCAD in 1980 and the transfer of the country's peanut reserves;
- The adoption of the New Agricultural Policy, which expedited state withdrawal and the abolition of the system for co-ordinating and educating management;
-
- The implementation of the Agricultural Sector Adjustment Programme (PASA) whose ultimate aim was to regulate the market. The PISA quickly followed the PASA and together they formed a twin effort to re-launch agricultural production; this effort was pursued in 1999 with the creation of the PSAOP (Programme of Agricultural Services and Support for Producers' Organisations).

The government's basic policy, ever since submitting the agricultural sector to adjustment in 1979, was to pass on all expenses to the peasants: it abolished subsidies on inputs, increased interest rates on credit, and, with the devaluation of the CFA franc in 1994, told them to cope with the enormous price hike in inputs. One of the most immediate consequences of the devaluation was the drastic reduction in fertiliser use: (123 kg per hectare in 1979/80 to 66 kg in 1991/92). This, of course, seriously hampered productivity.

[9] Home-produced rice is of better quality than the imported, broken rice, but the average consumer's purchasing power is so low that they prefer to buy the latter because it is cheaper.

[10] The declared objective of these programmes was to increase job creation and incomes, liberalise market forces, stimulate free private enterprise and enhance the country's balance of payments. But the budgetary austerity required to redress macro-economic balances meant the government had to cut back drastically on expenditure; this, in turn, provoked recession, aggravated unemployment, sent a large part of the population into poverty and exacerbated social and sexual inequalities.

These problems were accentuated by the continued presence of public monopolies at most stages of production. The state services were immune to the restructuring, which meant their productivity levels remained the same as before and they were not able to offer rural producers cheaper inputs nor purchase farmers' produce at higher prices. One of the most striking things that emerges form an in-depth examination of the impact of structural adjustment policies in the agricultural sector is that there was a sizeable gulf between the policies' objectives and the way they were put into operation. The slow installation of structural reforms allowed state and semi-state bodies to continue to dominate the markets for both the factors of production and the agricultural produce itself and to maintain the high cost of transactions.

The diversity of modes of production is not really reflected in agricultural policies, which attach great importance to irrigated crops. 60% of public investment in agriculture over the last 20 years has gone to irrigated crops, mostly to the delta area of the River Senegal, even though only 10% of farmers are based here. We may question the wisdom of this policy when we consider that growing crops with irrigation demands a high level of investment and, as such, is beyond the means of most producers. Furthermore, the chosen technical procedures, which are based on water pumps and motorised farm machines, are also beyond the reach of the majority of farmers, who have neither the capital nor the technical skills needed to operate such a model[11].

The 2001 Operational Strategy Paper for the agricultural Sector asserted that policies adopted hitherto had failed to undertake the structural reforms essential for boosting sustained economic growth. Liberalising the market does not appear to have substantially improved the supply of agricultural products.
"The principal obstacles facing the sector are economic, political and institutional. The substantial public investments into the agricultural sector since 1995, made possible by the privatisation of various state enterprises, were used to directly or indirectly subsidise credit, inputs and losses for certain public enterprises – they did not change the general conditions of agriculture nor improve the economic environment or alter the way in which production was organised nor stimulate the national private sector." (MAE, 2003).

The public authorities instigated a programme to remove these obstacles and re-invigorate the nation's agriculture with a view to achieving food security and sustainable development. The recently-approved operational strategy for the agricultural sector is the framework for these efforts to repair the malfunctions of previous policies and stimulate growth.

The strategy is informed by the evaluation of the potential and limitations of the agricultural sector and analyses of various factors of growth. Its overall objectives are: i) to secure long-term improvement of the economic and social conditions of rural populations, and ii) to encourage dynamics for harnessing the participation of local populations so that they take charge of their own development.

Specifically, this translates as i) to increase in a sustainable way, diversified agricultural production by intensifying and modernising agriculture, ii) to improve food security, iii) to increase incomes in rural areas, iv) to guarantee consistent investment so as to fight poverty, and v) to build the capacities of producers and help them get more professional.

3. - "Food and agriculture"

3.1 Characteristics of traditional agricultural systems

Traditionally, Senegal's economic systems have been based on agriculture in its broadest sense (the production of vegetables, animals, seafood, and plants). The economic systems of the various provinces of pre-colonial Senegal were based on these activities, even if different areas combined them differently. Generally speaking, three life-styles have co-existed in Senegal for centuries. Firstly, there are the sedentary crop-growing communities; secondly, there are the nomadic cattle-rearing communities who

[11] The cost of farms created with public money is very high, running at between 7.5 million and 10 million CFA francs after the devaluation

practice transhumance; and thirdly, there is the fishing community, which can be both sedentary and mobile.

These divisions are somewhat tempered by the fact that being a crop-grower or a fisherman does not preclude owning cattle, especially since, in every region in the country, this is not just a preferred way of gathering wealth but also an important regulator of social relations.

Similarly, primarily cattle-rearing communities always at least dabble in crop-growing. Even in northern Senegal, where indigenous communities earn most of their income from cattle-rearing, most families are fed by the cereals grown locally.

Production in these old agricultural systems were based on a broad principle of self-consumption, whereby the little surplus that was produced is swapped for other food products, such as milk, dried fish, salt, etc. Where there is crop or pastoral farming, there are also usually artisans to produce or acquire various goods (cotton fabrics, agricultural tools, cooking utensils, etc.). In addition, the populations are also gatherers (fruit, leaves, honey, etc.). In northern Senegal, the local populations produce relatively large quantities of arabic gum (*Acacia Senegal*) for exportation.

The family is still the most common basis for organising production and consumption almost everywhere in the country. In domestic economies, families are generally the dominant units of consumption. This remains the overall case today even though it is becoming increasingly common for families to break up. The main features of production systems are that they tightly mesh production, consumption and accumulation and, secondly, that they are run in hereditary fashion in that ownership is passed down from generation to generation, ensuring it stays in the family.

3.2 Development of the peanut trade and monetarisation of the economy

Many anthropological studies have shown how the imposition of taxes transformed the economies of colonised countries. In Senegal, the levying of fiscal taxes, firstly in kind and later in cash, was the main catalyst for the expansion of peanut growing in the countryside[12].

Climatic conditions were very conducive to peanut growing and this prompted the colonial administration to invest all productive efforts in peanuts. Traditional cereal staples (especially millet), which were perfectly adapted to the local environment, were gradually forced to make way for the peanut, which had been introduced from Latin America and would be produced primarily for export[13].

In an effort to compensate for the consequent shortfall in subsistence crops, the colonial authorities started importing rice, mainly factory waste (broken rice). This was firstly used just to cater for the food needs of urban populations but, as food shortages deepened, was spread to the whole country.

Peanut growing took up more and more land, spreading at a relatively fast pace, though the speed differed from zone to zone. The populations of some provinces did try to resist the agricultural orders of the colonial administration, but this resistance proved futile in the face of the increased monetarisation of the economy (levies, taxes, dowries and various customary practices) and the disappearance of the traditional system of trade, which was based on bartering. These factors gradually led to the situation whereby domestic family structures became rooted in commercial production.

Though the introduction of peanut growing unquestionably disrupted the old system of production, the organisational framework of production was not profoundly altered. The same families that had dominated before took charge of mobilising workers for the peanut plantations. In other words, the colonial administration very quickly decided not to turn the running of peanut production over to its own expatriates or city-dwellers, and this was because they reasoned it was better to take the existing mode of production and simply gel it with more modern methods[14].

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[12] **The imposition of taxes had, in omst cases, the effect administrations expected: by creating a need for cash, they prevented peasants from taking up peanut growing.**

[13] **This does not mean that peanuts were not eaten locally ; even now, almost 30% of what is produced is consumed locally. Moreover, peanuts were incoporated into the local bartering system and gave rise ot various by-products..**

[14] On the subject of socio-economic disturbances caused by the imposition of cash crops, Meillassoux (1975) comments that «the indigenous mode of production was simultaneousl destroyed and preserved; it was preserved

In almost every part of he country, booming peanut growth was accompanied by serious lacks of subsistence food. So much land was given over to peanut growing that it sowed an imbalance in the country's whole agricultural production system. With arable land and most of the male work-force monopolised by peanuts, cereal production plummeted. Rural areas became increasingly vulnerable and food shortages, even famine, were a constant threat. Even the reports of the colonial administration testify to the fact that the slightest affliction (low rainfall, parasite attack, etc.) was enough to make nightmares come true.[15]

To stave off famine, family holdings tried to avail of every resource possible, particularly edible forest resources (wild fruit, roots, leaves, honey, etc.). Another survival strategy, one which was applied in the aftermath of the major famines (1909, 1915, 1931, etc.), was to revert to the policy of producing several different crops.

This strategy, however, was never able to able to take hold for long. Each time it arose, it lasted only for a relatively short period, since the dominance of the peanut trade in the family holding economy was such that families could not find outlets to sell their cereal produce.

4. - The limitations inherent in post-Independence agricultural policies

When Senegal gained independence its economy was totally fuelled by agriculture, especially the peanut cash crop. *"The peanut is the overwhelming ruler of the country's economy. The size of the peanut harvest dictates the state of the national budget, the government's room for manoeuvre and the level of equipment of the most remote farms and the monetary income of the most humble peasant (…) Covering at least half the arable land and with practically all of its production sold, peanuts account for at least three quarters of the monetary income of the rural world"*[16] (Pélissier, 1966).

Because of the rupture in the traditional agricultural system based on cereal production, Senegal had to meet its food requirement by importing, and these needs climbed quickly because of rapid demographic increases, declining soil fertility caused by peanut production and the decreasing productivity of subsistence crops. By 1959, the country was importing nearly 140,000 tons of rice per year

For the new government, restructuring agriculture was a crucial priority, made even more pressing by the heavily lop-sided look the imports were giving to the national balance of payments. The government's first economic development plan, in 1961, stressed the need to promote cereal production while also developing commercial production that would generate the tax revenue required to fund the new apparatus of state.

This plan represented a certain retreat from the trade-based economy. Though it targeted peanut production for earning revenue both for peasants and for the state, it also attached great importance to millet and rice production in a bid to achieve food self-sufficiency.

In keeping with this policy then, the government set about providing the tools needed to develop community-based agriculture – it established co-operatives supported by the state rural services, installed credit bodies and agricultural commercialisation centres, and launched a programme for providing farmers with modern equipment and inputs. A land reform in 1964 sought to build on these efforts by awarding land to those intending to sow crops on it.

The plan to rebuild community-based agriculture, however, suffered a serious blow in 1962, when France abolished the preferential tariffs Senegal's peanuts had hitherto enjoyed. The public authorities

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as a mode of social organisation that produced value for imperialist gain, and destroyed because the way it was exploited prevented it from reproducing itself. »

[15] These famines shattered traditional systems of solidarity. Chastenet (1983) shows in his study of food shortages in the Upper-River Senegal region that there is little solidarity between relations in times of famine. Rather than tightening ranks and providing mutual help, families tend to disintegrate in the face of such trials.

[16] After unsuccesful trials in Richard-Toll, cotton production was introduced to eastern Senegal in 1963 and really took off in 1968/9 (6,447 hectares sown by 10,300 cotton-growers, boosting production to 9,739 tons).

tried to compensate for the resultant loss by initiating a huge campaign to increase millet and peanut production by expanding the amount of cultivated land and boosting peanut yields.

Faye (1999) describes the government's thinking at the time: *"The issues of food self-sufficiency and national control of development became less important; instead, the state concentrated on using modern fertilisers to boost production and yield. Similarly, the state was more concerned with administering the population and getting it to produce than with raising awareness or helping local communities take control of their own development.."*

In its zeal to concentrate all efforts on production, the state's policy for agricultural development encouraged the use of technical innovations, the supervision of populations and the promotion of commercial growing; thus, an "*administered economic system"* was born. The state, of course, levies a significant amount of the surplus-value generated in such systems, and this forced the many peasants who didn't have access to techniques and means for modernising their families' holdings to cultivate, rather than conserve, more and more land.

In other words, by systematically levying surpluses the state prevented farmers from accumulating any capital. As they slid further into debt, farmers' income and purchasing power dwindled and wrought a deep malfunction in the agricultural system.

From a careful reading of the evolution of agricultural policies, it is clear that one of the major challenges today is to devise a vision of the economic future of the Senegalese rural world. The debate on agricultural policies basically revolves around two divergent visions: one focuses on promoting family-based agriculture, and the other advocates developing industrial, capital-based agriculture. What we need to do therefore, is identify the consequences of opting for one or other of these approaches in the current context of globalisation, and clearly define the responsibilities of each category of actor in the process of formulating and implementing agricultural policies.

The CNCR member organisations have on several occasions signalled their preference for developing a modern family-based model for agriculture. This, of course, does not mean they oppose all use of large-scale farms based on capital and paid labour, as is advocated by the *"Sénégal agricole (agricultural Senegal)"* report; however, they believe such farms should only be deployed *in addition* to family-based agriculture and that priority should be assigned to the latter. In all cases, the peasant movement believes whatever course of action is taken should protect the interests of the majority of agricultural workers instead of just those of a few big capital-owners.

5. - The thinking behind food security and self-sufficiency policies

It is abundantly clear that governmental strategies only go a small way to meeting the expectations of rural and agricultural producers. The state's primary concern is to increase revenue from exports, but most peasants are more interested in securing their subsistence. This difference of interest explains why peasants are reluctant to associate themselves with activities implemented by the public authorities.

The various government projects have exacerbated social divisions and the process of rural impoverishment. The elite have hijacked the financial resource raised to help improve living conditions in rural areas, and have instead used this money to fund the political clientelism required to perpetuate the social basis of their power (currying favour with employees of state bodies, religious and traditional authorities, rich farmers, etc.).

In the 1970s, successive droughts again exposed the inadequacy of the state's agricultural development policies and finally compelled the public authorities to take stock of the complexity of the agricultural question. It was glaringly obvious that in spite of their hard work peasants were unable to sufficiently meet their basic food needs – a radical transformation of agricultural structures and policies was called for. The challenge ahead, therefore, was to come up with ways of rectifying the distortion of the production/consumption ratio and attain either food self-sufficiency or food security.

Whether they aimed for food self-sufficiency or food security, the target could only be reached if food production was increased; and this, of course, meant boosting the productivity of all food production

systems. But this was not the only pre-condition, as was proven by the experience of European countries where food security was only achieved by simultaneous increases in primary agricultural production by small farmers and by industrial food production.

Resolving the food problem means enabling farmers to produce enough to feed themselves and sell the surplus to cities, including products that will subsequently be industrially processed to meet the demand of urban consumers. Two imperatives must be borne in mind when making such changes in the agricultural systems: one relates to land ownership and management of natural resources and the other relates to the organisation of the local cereal market and the development of food industries.

To find a sustainable solution to the crises afflicting agricultural systems, it is important to clarify the terms and ideological premises of the current debate on the relative merits of food self-sufficiency or food security.

Here it should be stated that Senegal, along with other Sahelian countries, would be deluding itself if it thought total food self-sufficiency was an achievable objective. Much more realistic is to strive to promote production likely to secure, in the strategic sense of the word, decent living conditions for its population. In short, there is no need to refrain from trade with other economies but simply to ensure that basic needs are met by local production.

This line of thinking goes against that of the countries of the North and the international financial institutions, who believe the countries of the South should meet their food needs through international trade.

It is worth noting that the Western countries who, after World War II, re-structured their agriculture and applied subsidy programmes wound up in the 1980s with massive food surpluses they didn't know what to do with. Faced with this, they invented the system of sending food aid to countries in the South, and this, in turn, led them to develop the concept of food security.

The Northern argument is that agricultural production costs are so high in most African countries that it makes more sense for these to import the products they need rather than making a loss by trying to produce them locally. This argument is relies on the comparative advantage model, according to which others have better production conditions and higher productivity. But what this argument neglects is the fact that Northern countries plough heavy subsidies into their agriculture.

If African countries were to follow the idea of food security as it was originally meant and applied, they would sink even further into dependence. It should always be borne in mind when talking about food security issues that food is a strategic resource in every human society and that is why no country can afford to take the risk of depending entirely on another to satisfy its food needs. Once this is understood, we can easily see why the current debate within the WTO about food sovereignty is so fierce.

Table 3. Food Security Action Plan (From 2003 to 2007)

Constraints	Objectives/ Strategies	Activities	Anticipated Results	Verifiable Indicators
Physical constraints related to biophysical conditions	Development of irrigation	Implementation of the action plan on landed property, including the allocation of legal statutes to land issues.	The definition of a clear and precise legal statute for land issues and the implementation of an administrative plan	A comprehensive list of all agricultural lands is compiled in a systemic way.
		Undertake infrastructural and water supply developments.	All irrigable lands are progressively developed	The construction of salt impediment dams and water retention dykes; Development of small irrigation systems in the vicinity of water boreholes and water retention basins.
	To promote drought resistant crop species	Support in-situ agricultural research	Improved agricultural development in regions	Increased capacity of farmers to absorb

			with low rainfall	information developed through research.
		Use modern technology to identify new species	The integration of new technologies in research	The implementation of a number of technical innovations.
	Take account of climate change impact	Develop a framework for analysing climate change impact	The impacts of climate change are better known.	Availability of programmes designed to alleviate the adverse effects of climate change
	To undertake the rehabilitation of soils and the improvement of soil fertility.	Put into practice the various techniques of soil protection, conservation and improvement	Soils are completely rehabilitated and better managed.	Extension of arable land and increase in soil productivity.

	To enhance the development and management of fishing and fish farming	Control all fishing activities (machinery, fishing zones, importation of equipments) _____ Set up a fish farming project	Profound improvement of the fisheries industry _____ Improvement in fish production, both in quantity and quality	Demarcation of fishing zones; utilisation of non destructive machinery _____ Increase in fish farming production
	To establish a prevention and early warning system, based on the exploitation of meteorological data;	Build capacities for the collection, processing and analysis of satellite data. _____ Reinforce expertise in the field of weather forecasting	Reinforcement of the technical capacities of individuals and institutions; Better forecasting and management of climatic disasters. _____ Better circulation of viable climate change forecasts.	A lot of equipment has been set up _____ A number of professionals have been formed in specific fields
Socio economic and cultural constraints	undertake the modernisation and intensification of various rural agricultural products (including livestock, forestry, fisheries)	Set up concessional credit lines, which are fully operational, for the acquisition of agricultural equipment and for land development. _____ Strengthen natural disaster funds	The productive capacities of agricultural enterprises are strengthened _____ Agricultural producers have easy access to bank loans _____ Limitation on nomadic movements of livestock	Improvement in the frequency of replacing worn out materials; Improvement in the level of agricultural mechanisation; Improvement in the rate of agricultural land development _____ Establishment of state funds obtainable from banks; increase in the number of bank loans solicited and approved _____ Decrease in nomadic movements of livestock.

		Modernise and develop the milk and meat producing industry	Milk and meat are within the reach of the various classes of the population.	Increase in per capita consumption of milk and meat.
		Modernise and develop enterprises involved in processing agricultural products (including, livestock fish, forestry products, etc)	There is an increase in income from rural production	Increase in the number of SME/ SMI being created; Increase in services and financial turnover of SMEs and SMIS.
		Combat agricultural parasites	An improvement in out put	Decrease in losses due to agricultural parasites
		Strengthen agricultural and rural advisory councils	Establishment of modern and efficient agricultural enterprises	A good number of food producers have been trained; improvement in the level of supervision; Improvement of the techno-economic itinerary
	To control fish products meant for	Control export of fish products	Reduction in the export of fish products, deemed	Establishment of an appropriate control system

	export		not to be in conformity with current regulations to the barest minimum.	
	To support information systems on food security	Strengthen Institutions involved in analysing food security issues.	Better monitoring of food related issues.	Publication of reports and periodical information bulletins.
	To develop private investment in the agro-food industry	Set up a financial guarantee and collateral fund	Agricultural developers have access to bank loans	Financial assistance provided for a number of agricultural developers or promoters.

	The Agro-food sector or industry	Sensitise and encourage immigrants to invest in agro-food production	Savings deposited by immigrants are channelled towards the productive sector	The number of immigrants who decide to invest in the agro-food sector
	To increase the purchasing power of family units	Develop decentralised funding systems (DFS), for productive sectors; _____ Promote income generating activities; _____ Construct infrastructures for storage and distribution; _____ Promote the creation of non- agricultural jobs	Promoters operating in the informal sector have easy access to credit _____ Rise in income of the vulnerable classes _____ Improved conservation and marketing of agricultural products _____ Sources of income in the rural areas are diversified	The volume of financial aid approved by the DFS _____ The number of projects financed _____ The number of infrastructures constructed for storage and distribution _____ The number of non agricultural jobs created in rural areas
	To improve the quality of life in rural areas	Promote housing schemes in rural areas	The quality of life in the rural areas is greatly improved	The number of housings and sports facilities constructed.
Constraints relating to macro-economic policies	To review the conditions for assistance in the agricultural sector	Re-negotiate agreements with international financing Institutions	Agricultural producers receive better assistance from the state	The level of subsidies authorised.
	To develop bilateral, sub-regional and international cooperation in fisheries and fish farming	Set up a fish research project on the dynamics of shared stocks	Shared stocks between the different countries in the sub-region are better known.	The number of research projects developed; The number of stocks monitored

Rapport national du Sénégal, SMDD, Johannesburg 2002.

Sub-regional level : A Special Regional Programme on Food Security (SRPFS), was formulated by the West African Monetary and Economic Union (UEMOA), in collaboration with the Food and agricultural Organisation (FAO), and approved by statutory organs of the union in 1999. The programme's ambition is to contribute towards the improvement of both food security and the incomes of rural communities in member countries, by reinforcing and stimulating national food security programmes. It should however be stressed that these concerns have already been addressed, both on the regional and national levels, in strategies or orientations defined by various transverse policies. However, the formulation of these policies is most often left to a very small nucleus of policy makers and experts, who manage the process within a tightly sealed core, breeding at times, discordance or even contradiction between the different planning institutions (see in annex “coherence of food security policies and strategies”.

6. Scope and limitations of food security strategies

It is plain to see that there is little or no interplay between the two food security strategies elaborated in the name of the Ministry of Agriculture. The CILSS-backed strategy makes reference to all the existing planning frameworks, but blocks interaction with the food security programme supported by the FAO. This proves that the declared intention to create the conditions required for harmonising policies and strategies is not rooted in reality. Furthermore, none of the experiences in the past, nor any on-gong projects, have been capitalised upon; and this, of course, makes developing a long-term vision quite haphazard.

It is also worth noting that in both programmes only a very limited effort has been made to embrace civil society – there are very few non-governmental representatives on the steering committees. The importance of using the correct process to make policies and strategies is something that supporters of increased non-governmental involvement have continually stressed in recent years. It is up to the various elements of civil society to learn the lessons of their involvement in planning processes in order to identify how to build their own capacities and position themselves so as to get the most out of them.

Civil society has to find a way of taking a bigger role in planning procedures in the agricultural sector. A crucial step to this is improving communication mechanisms between state agricultural services and the organisations concerned. If the public authorities and their development partners are serious about wanting to harness the participation of civil society in the design and implementation of food security strategies, then they have to treat the quality of this participation as a decisive factor when evaluating the effectiveness of their policies.

We should also highlight the fact that food security strategies are only very slightly integrated with national economic policy. In other words, the way the steering committees are composed means food security programmes do not get much consideration when macro-economic policy is being set.

When it comes to evaluating the impact of agricultural policies, there is a stark difference between the favourable reports emanating from public institutions and the much more critical viewpoints of civil society organisations. The public authorities point out that reform in the agricultural sector was geared mainly towards price setting, institutional changes, and management of certain product lines (rice, cotton, peanuts, pastoral farming). In this regard, they say significant progress has been made in several areas:

i) Interest rates on agricultural credit have dropped from 12.5% to 7.5% since 1997/98;

ii) The supply of imported rice has improved significantly;

iii) The organisation and support of the peanut production system is much better;

iv) The liberalisation of meat prices, the ending of the monopoly on leather and skins exportation, and the privatisation of veterinary medicine have all led to the private sector taking a real foothold in pastoral farming.

On the other hand, peasant organisations stress the chasm between public agricultural policies and their own expectations. They point to the fact that the shrinking of the rural economy has coincided with the implementation of these policies that have deprived rural producers of the technical, economic and financial services necessary to sustain their production. As far as they are concerned, liberalisation policies have intensified competition in an unregulated market in which the cost of the factors of production is continually rising while earnings from agricultural production are continually dropping.

Given this context, the major challenge of today is to develop a vision of the economic future of the rural world and then build a policy to achieve it. Peasant organisations believe re-invigorating family-run farms should be part of the re-building of the rural economy and that mechanisms should be put in places at all stages to ensure the efficient valorisation of agricultural production.

In conclusion, we can say that improving food security strategies entails re-adjusting along at least two basis:

i) defining the strategic framework for harmonising and co-ordinating food security policies;

ii clarifying the institutional arrangements in a way that prevents conflicts of responsibilities and instead stimulates synergy.

To be precise, food security is fraught with constraints (see table 3), whose removal or alleviation should be the objective of development strategies. This is particularly the case of bio-physical constraints, (under which climate change impact falls). However, one cannot deny the fact that vulnerability to climate change is first and foremost economic-related, hence in any analysis, one cannot possibly ignore economic and social constraints, as well as constraints related to the globalization of economies.

Chap. 5 - Example of development actions and policy framework : The LPG programme[17]

1. Objectives of the LPG Programme

As in other Sahelian countries, discussions about the environment in Senegal since the 1970s have been dominated by concern about declining forest cover, soil erosion and local climate changes. Human activity, including the overuse of grazing and pasture land, the expansion of farming into marginal and ecologically fragile land, bush fires associated with various rural activities and charcoal production, is thought to have contributed to the process of land degradation and changes in the climate in the region.

Against a background of a constantly increasing population, wood-fuel consumption towards the end of the 1970s amounted to more than 60% of the country's total energy consumption. This type of consumption, which at that time accounted for about 90% of households' energy needs, was extremely detrimental to the country's natural forest cover. The use of wood fuel and charcoal for domestic purposes was increasing most rapidly in urban areas, where population growth was fastest. Deforestation is thought to have accentuated the problem of desertification and drought that ravaged Senegal and other Sahelian countries in the early 1970s.

Charcoal production has other harmful environmental and social effects. A survey of village women found that about half of them blamed charcoal producers for wood scarcity. The disappearance of game species, destruction of fodder, conflicts over water rights and social problems were other reasons why more than over half of the village women would prefer local charcoal production to cease.[18] While stopping charcoal production in Senegal would certainly not halt land clearing, and the precise nature of damage to rural environments by this industry is not fully understood, a pervasive impression is that charcoal production is one of the key causes of environmental degradation in Senegal.[19]

In response to these problems, the Government devised strategies aimed at reducing the impact of biomass-energy use through inter-fuel substitution improved efficiency of wood stoves and charcoal kilns and improved woodland management. The authorities devoted particular attention and priority to measures favouring the intensification of domestic consumption of modern energy sources, particularly of liquefied petroleum gas, in urban areas. The promotion of modern fuels to substitute for traditional fuels in household end uses such as cooking has been a common strategy among many developing countries. Such a strategy has commonly involved fuel and/or equipment subsidies. These subsidies have been justified both by the environmental benefit, including reduced deforestation and

[17] Youba Sokona, ENDA TM, and Pape Alassane Deme, PROGEDE. 2001.
[18] Amous (1992).
[19] See World Bank (1989) and Ba, Cavard and Sokona (1991).

indoor pollution, and the support they provide for the incomes of poor households. The LPG[20] (butanisation) programme in Senegal, launched in 1974, aimed to eventually replace 50% of charcoal consumption with LPG in major urban areas through subsidies and promotional campaigns.

2. Implementation of the LPG Programme

The "*Société Africaine de Raffinage"* handles the supply of LPG. It has a legal monopoly on the production and importation of oil products in Senegal. Throughout the 1970s, the SAR refinery at Dakar produced enough to meet local demand, which remained modest. In the 1980s, especially after 1987, LPG consumption surged, outstripping production at the refinery. As a result, it became necessary to importing increasing volumes of LPG. Today, three main firms – Total-Fina-Elf, Shell and Mobil – largely control inland distribution.[21]

The growth of LPG use in Senegal has gone through several stages, characterised by shifts on government measures affecting both supply and demand:

- In July 1974, a so-called *popular adapted gas* cook-stove model, the Blip Banekh, for use with a 2.75-kg capacity gas bottle was launched on the market. All import duties were removed on the bottle and cooker. The gas, which was not subsidised, was also sold in larger 12.5-kg and 38-kg cylinders and in bulk.
- From 1976, the Government decided to subsidise the 2.75-kg gas cylinders but withdrew the tax exemption on imported equipment. There were, nonetheless, several price increases in the late 1970s and early 1980s due to the increase in world oil prices, exchange-rate fluctuations and domestic inflation.
- From 1983, in response to the needs of large families, a new cooker model, the Nopalé, adapted to fit a 6-kg capacity cylinder, was launched on the market.
- During the period 1985 to 1986, as part of the Structural Adjustment Plan, the Government decided to cushion the global drop in oil prices for consumers, resulting in the effective removal of subsidies on LPG sold in smaller bottles.
- In July 1987, the Government, while introducing a new price structure for gas, decided to revive LPG subsidies.
- In March 1998, a new law setting the framework for the reform of oil product pricing was adopted. This law provides for the complete liberalisation of the oil sector and the removal of monopolies, the stimulation of competition and the elimination of oil-price regulation. The process of elimination of LPG subsidies, due to their rising financial cost, formed part of this new policy. LPG subsidies were gradually reduced in 20% steps beginning in 1998 and were planned to be completely eliminated in mid-2002. From that time, distributors of LPG and other oil products were free to import directly. One objective of the new policy is to promote kerosene as a household fuel, particularly for cooking purposes. But in line of the search for harmonisation of economic policies within the Economic Union in West Africa, the decision of completely phasing out the subsidy in 2002 has been suspended.

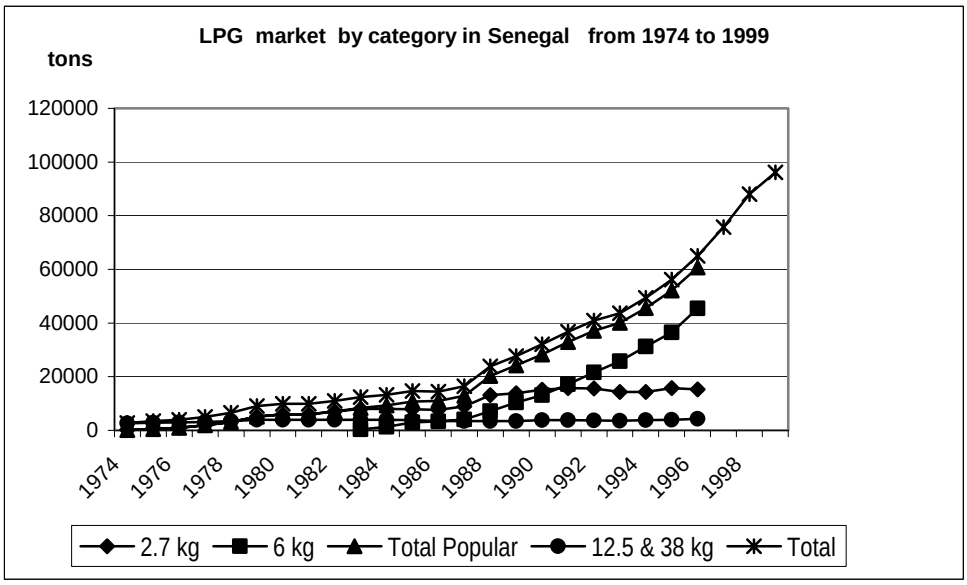
Stages	Effective Period for Elimination of Subsidy	Level of Residual Subsidy « 6 kg » (fcfa/ton)	Level of Residual Subsidy « 2,75 kg » (fcfa/ton)
1	From July 1, 1998	168,652	159,603
2	From July 1, 1999	126,489	119,702
3	From July 1, 2000	84,326	79,802
4	From July 1, 2001	42,163	39,901
5	From July 1, 2002	0	0

[20] LPG used in Senegal is primarily made up of butane.
[21] World Bank/WLPGA (2001).

3. Impact of the Programme

National consumption of LPG has risen steadily since the LPG programme was launched in 1974. Sales reached around 100,000 tonnes in 2000 compared to less than 3,000 tons at the start of the programme. By 1979, the amount of gas sold in 2.75-kg cylinders was almost twice as much as that sold in all other cylinder sizes. Consumption has shifted to the 6-kg cylinder since its introduction in 1983: this size today represents the overwhelming bulk of total sales and the other smaller "popular" cylinders most of the rest (Figure 10.1). Annual consumption of gas in larger, "traditional" cylinders (12.5 kg and above) is flat at around 4,000 tonnes.

Figure 10.1: LPG Consumption in Senegal by Bottle Size, 1974 to 2000 (tonnes)



Demand has nonetheless slowed recently in response to price increases since 1999 caused by the devaluation of the CFA franc (fcfa) in 1998 and the phase-out of subsidies. The annual growth rate of sales in the "popular" 2.7-kg cylinder exceeded 12% in the period 1974 to 1998, peaking at 57% in 1988. The price of that cylinder size rose from 121 fcfa/kg to 158 fcfa/kg in 1998, an increase of 31%. However, this was not accompanied by any significant reduction in the rhythm, since growth remained at 13%. A 20% cut in subsidies in 1999 had the effect of increasing the price again, to 173 fcfa/kg in July, 202 fcfa in September and 209 fcfa/kg in November. Two further subsidy reductions in 2000 resulted in price increases to 249 fcfa/kg. Demand growth slowed to 10.5% in 1999, 4.5% in 2000 and 6.2% in 2001, compared to annual increase of 13 to 17% between 1994 and 1997.

It is very difficult to estimate how much the growth in LPG use has affected the consumption of traditional fuels, particularly charcoal. Statistics on charcoal production, supply and consumption are not reliable. However, deliveries of wood fuel in Dakar have visibly declined as LPG deliveries have risen. Over the years, the LPG programme has clearly modified household energy-use patterns in urban areas.

As in most African countries, a comprehensive model of energy consumption does not exist in Senegal. Extreme disparities in income and lifestyles, particularly between cities and rural areas, mean that energy consumption patterns, particularly the role of modern fuels, vary enormously. Wood fuel use in Dakar, for example, is now very small. However, the city, with 25% of the country's population, accounts for over 80% of all charcoal use. This is because most of the Senegal's industrial and commercial activities are concentrated there and because charcoal has a higher energy content than wood-fuel by weight making it more efficient to transport into the city.

According to estimates provided by the Ministry of Energy [4,7], the growth in LPG use has resulted in annual savings of about 70,000 tonnes of wood-fuel and 90,000 tonnes of charcoal. This is equivalent to 700,000 m^3 of wood a year, or 15% of the amount now being collected.

Initially, LPG use was concentrated among rich households in Dakar and its vicinity. Over the years, use of the fuel has spread to poorer households all over Dakar and its distribution is being extending slowly into other regions. However, 80% of all LPG sold in Senegal is still consumed in Dakar. On average, more than 50% urban households now use cookers with gas bottles. In the major western towns, Dakar, Thiès and Mbour, where the price of LPG bottles is lowest because of low transport costs, LPG has become the main cooking fuel. LPG consumed in this zone is transported over short distances, while charcoal is often brought in from as far as 600 km away. In other towns, LPG remains a back-up fuel for charcoal and wood. It is estimated that there are over 1.5 million gas cookers [2,4,4,7,9].

4. Key Policy Issues

In implementing the LPG programme, the Government encountered a number of problems, notably the following:

- Gas stoves had to be found that were suited to the needs of Senegalese households. The standard gas stove model that was originally available had to attached to a 12-kg or 38-kg cylinder by a flexible tube and a metal exhaust valve. This was not only too costly for most households but also ill-suited to their cooking habits. At an early stage, a gas cooker was designed with the burner screwed directly onto a 2.75-kg gas cylinder. Later, a more robust model was added with a 6-kg cylinder that was better adapted to the cooking habits of average-sized families. For both models, the burner is the only element that has to be imported. The metal cooking pot support, which has been adapted to standard Senegalese cooking utensils and practices, is manufactured locally.
- The removal of duties on imported equipment was not a sufficiently strong incentive to generate any significant consumer interest in switching to LPG instead of charcoal and/or wood-fuel. For this reason, the Government introduced subsidies on the fuel itself to make using LPG more affordable to low to middle-income households. Later, unlike other oil products, the Government switched between subsidising and taxing LPG, depending largely on the world oil price, to keep end-user prices constant.

In order to achieve the target rate for expanding LPG use, three different price structures were set up, with price revisions every three months: one for 2.75-kg bottles, one for 6-kg bottles and one for large 12.5-kg cylinders. Only the first two sizes were subsidised. The price structure is set by presidential decree on the joint recommendation of the Ministries of Energy and Trade. The general aim was to tax more heavily other oil products, particularly fuel oil, to make LPG sold in smaller bottles cheaper. The price structure is made up of the ex-refinery price, port dues, a price stabilisation component (part of the subsidy), a distribution margin and value-added tax.

Effective management of the pricing structure, which provided incentives for distributors to expand sales, made it possible to quickly develop the market in Senegal. The SAR refinery handles all LPG production and imports. It has a crude oil throughput capacity of 1.2 million tonnes per year. LPG production capacity is limited to around 9,000 tonnes per year. Price liberalisation, which has boosted the profitability of the refinery, should pave the way for modernisation of the refinery in order to produce a larger quantity of LPG. The three main oil companies handle most LPG storage, bottling, distribution and retailing. These companies have invested heavily both in distribution infrastructure and end-use equipment. The construction of new refilling centres in some regions well away from Dakar have helped encourage the development of LPG sales in more remote areas.

The supplemented its policy of encouraging LPG consumption with measures to rationalise wood-resource management. These included regulations concerning the exploitation and use of forest products such as an increase in wood-cutting licence fees, tighter production quotas, the creation of a

land-allocation system for charcoal production and a progressive increase in the official sales price of charcoal.

It is not unclear what the long-term effect of the termination of LPG subsidies will have on consumer habits. Consumers' associations, non-governmental organisations and the media argued strongly against this move, stressing the damage that an increase in LPG prices could have on the incomes of poor families and, if they go back to using charcoal, the environment. At present, there is no information on the elasticity of demand for this type of product. Still, it is likely that most housewives will choose to continue using more expensive LPG given the fuel's greater convenience and cleanliness - especially if they have invested heavily in the gas stove and bottle. In this case, higher LPG prices might result in people reducing their consumption of other goods and services.

5. Conclusions

[ETB1]

Despite the successful introduction of LPG in urban areas in Senegal, particularly in Dakar, wood fuel consumption is still very high. This is largely because LPG consumption remains concentrated in urban areas. Still, urban LPG use certainly relieves deforestation pressures and wood-fuel scarcity in rural areas. A key feature of wood-fuel consumption in the rural area is that the villagers themselves collect the deadwood lying around their villages. As a result, commercial vendors supply only small quantities of charcoal, which is considered a luxury product in rural areas. Charcoal producers that pass through villages collecting deadwood and cutting down trees are largely responsible for deforestation. Village dwellers suffer the consequences, since they are forced to foray for wood-fuel further away. Sometimes, they have to cut down trees to meet their immediate cooking energy needs. By reducing urban charcoal demand, LPG has had the beneficial effect of enabling better access to wood-fuel in the rural areas. Improving rural access to LPG would bring further environmental and social benefits.

The LPG programme in Senegal inspired the launch in the late 1980s of a similar programme in the Sahel region, financed by the European Union and implemented by CILSS (the Interstate Committee for Drought Control in the Sahel). The objective of the programme was to contribute to the efforts being deployed to combat desertification by encouraging the substitution of LPG for woodfuel. The money provided by the Union was used to provide subsidies on the type of equipment used in Senegal to the firms distributing LPG and to fund an awareness-raising campaign. LPG consumption in the nine countries was targeted to rise from 27,000 tons in 1987 to 66,000 tons in 1992 and to 92,000 tons by 1996. It was reckoned that meeting these targets would displace 673,000 tonnes of wood, assuming 7.5 tonnes of wood per tonne of LPG consumed. This initiative, which lasted only a short time, yielded very poor results. Although consumption almost reached the target in 1992, the European Union decided to discontinue the programme after receiving the findings of an external evaluation mission. This evaluation concluded (i) that household fuel substitution in general and LPG in particular are not a priority option in a country such as Guinea Bissau, (ii) in countries such as Cap Verde, Mauritania and Senegal where a substitution dynamic already exists, as well as a significant market, the key actors in the LGP business are making necessary investment to develop the market and the program will not make any difference to modify the trend.

The remarkably rapid development of the LPG market in Senegal resulted both from structural changes in demand for energy and from government policy. Energy use would have shifted to modern fuels in response to urbanisation, rising incomes and increasing scarcity of traditional fuels. But the LPG programme, in addition to other policy initiatives, encouraged this development. In addition to subsidising LPG prices, the Government has also at times implicitly manipulated charcoal prices relative to LPG prices, often by allowing charcoal retail prices to rise well above regulated levels.

LPG has become the principal cooking fuel for most urban households, especially in the Dakar region. However, charcoal consumption will remain an important fuel. Many households still prefer to use charcoal for certain purposes, such as ironing. And poor households still struggle to afford the upfront cost of purchasing an LPG cylinder and cooker and the cylinder-refilling cost. Charcoal is cheaper and can be purchased in small quantities on a daily basis gas.

The Senegalese experience with subsidising LPG demonstrates that rapid switching away from traditional fuels to modern forms of energy does not occur automatically. It requires effective government policies applied over a reasonably long period. Subsidies must also be supported by a number of other measures, including:

- The establishment of a reliable and effective supply system.
- The adoption of technology that is appropriate to local needs.
- The introduction and enforcement of regulations to discourage deforestation.
- Appropriate pricing and taxation policies.
- Attractive incentives for distributors and consumers.
- An effective information and awareness-raising campaign.

Evolution of LPG Consumption by bottle size					
	Blip banekh (2.7 kg)	**Nopalé (6 kg)**	**Total of Popular Bottle size (2,7kg + 6 kg)**	**Total of traditional bottle (12.5 & 38 kg)**	**Total**
1974	178		178	2575	2753
1975	498		498	2914	3412
1976	981		981	2981	3962
1977	1863		1863	3152	5051
1978	3090		3090	3468	6558
1979	5162		5162	3959	9121
1980	5934		5934	3946	9880
1981	5967		5967	3907	9874
1982	7024		7024	3995	11019
1983	7990	402	8392	3982	12374
1984	7982	1314	9296	3925	13221
1985	7858	2930	10788	3847	14635
1986	7659	3283	10942	3450	14392
1987	8910	4013	12923	3510	16433
1988	13163	7145	20308	3500	23808
1989	13818	10380	24198	3470	27668
1990	15194	13107	28302	3809	32111
1991	15732	17168	32900	3832	36732
1992	15578	21570	37148	3733	40881
1993	14335	25804	40139	3560	43699
1994	14269	31307	45576	3858	49434
1995	15688	36488	52176	3994	56170
1996	15299	45424	60722	4344	65066
1997			68808		75728
1998			80873		88000
1999			89385		96190
2000			93388		98944
2001			99262		102570

Source: GPP

Chap. 6 – Assessment of analytical tools and approaches

The case of Senegal demonstrates why it is difficult to harmonise methodological tools and specific approaches for analysing the 'development and climate' relationship. The country's development plans are quite short-term when considered against the climate issue.

Senegal's plans, where they exist, tend to be for five years (see above), whereas the terms of the scenarios described by the IPCCC relate to much more distant futures (one century from now). UEMOA's use of a conventional scenario of 25 years far exceeds the country's forecasts and, moreover, is based on estimates that are fixed in time, i.e. that do not update to reflect fresh data that becomes available.

The same can be said for the Millennium Development Goals (MDG) – they also look far beyond the terms of the countries' plans (to 2015) and, therefore, are also removed from the climate scenarios.

Similarly, NEPAD references have to be set in precise time-frames because this African development plan is a process to which countries subscribe in successive steps, both globally and by sector.

These facts lie at the root of the difficulty in formulating "visions": opinions are often built on foundations that are hard to compare.

Our approach aims to go beyond the strict framework of Senegal and instead broaden our view to encompass West Africa and, more generally, the entire continent. This gives us leverage on how climate problems are perceived, since the approach becomes holistic. Furthermore, as might be expected, African decision-makers are concerned much more directly by their local environment than the global one (cf United Nations Convention Framework to Combat Desertification).

Chap. 7 – Outline of suggested analytical approach for the back-casting steps in the national case study phase II

In compliance with the "Schematic diagram of country Study methodology Template" (WP 2, May 2003, post RISOE), the results of the first three steps are contained in the case study. As such, the case study completes the first three steps of the back-casting approach. In the fourth step, the analysis will focus mainly on the options chosen from the proposals that were formulated. The choices for the energy and food sector were as follows:

Energy sector : Access to electricity
Role and prospects for renewable
Biomass energy

Food sector : Local food processing development
Prospects of ecological agriculture system in the context of Senegal

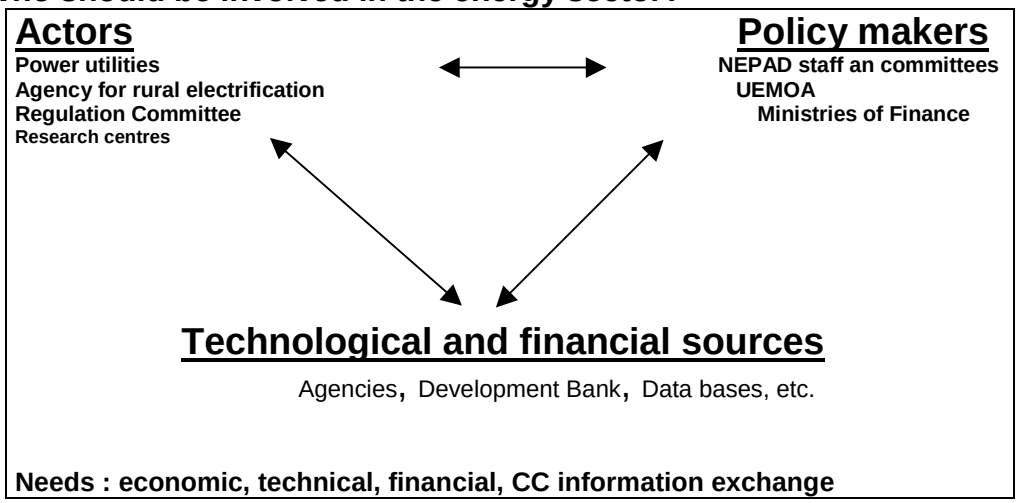
It is important to consider each option not just in terms of its economic and social impact, but also in terms of climate issues, i.e. either in terms of how adaptable it is in the face of the negative effects of climate change or in terms of preventing or reducing greenhouse gas emissions. The partners should participate in the analysis, especially when it comes to identifying the major trends and choosing the key indicators.

The next phases (5 and 6) persist with the participatory approach with the partners in order to get a better grasp of alternative "trails or trajectories" and to perform a comparative evaluation of the best possible policy directions.

Chap. 8 – Identification and analysis of actors, stakeholders, and civil society

In this context, constructing a participatory approach in the sector necessitates linking the principal stakeholders as shown in the following diagram:

Who should be involved in the energy sector?



Proposal:

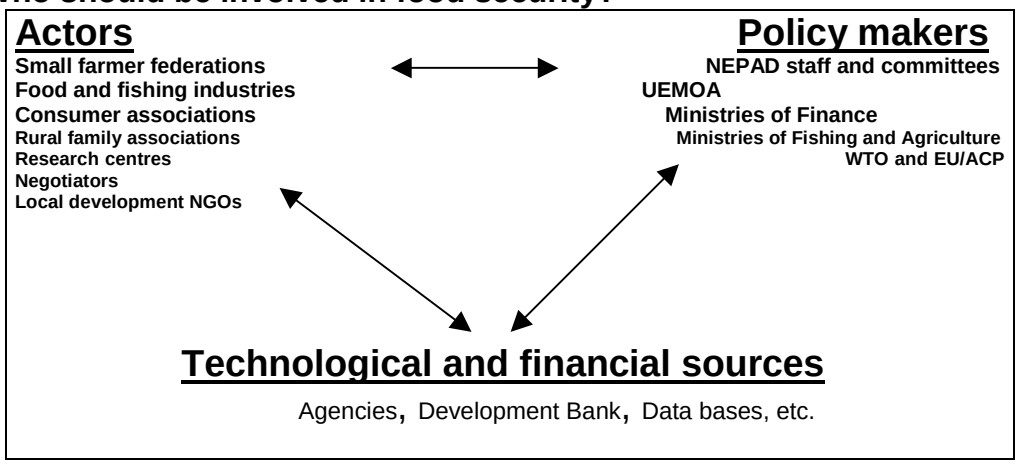
1. Policy makers
   - Energy department in collaboration with UEMOA policy makers and local authorities
   - Regulatory commission in collaboration with NEPAD Energy and UEMOA
   - Ministry of Finance in collaboration with the IMF, WB, Bilateral donors (3)

2.Actors
Private sector:
   - LPG companies (Touba, Totalgaz,..)
   - Local Oil companies

Local communities
ASER
Projects: PROGEDE, Domestic fuel, etc.

The same scheme can be proposed for food security:

Who should be involved in food security?



Needs: economic, technical, financial, CC information exchange

Proposal:

1. Policy makers

- Agriculture and fishing departments in collaboration with UEMOA policy makers
- NEPAD Agriculture committee
- Ministry of Finance in conjunction with the IMF and WB
- WTO and EU/ACP Negotiators

2. Actors

- Small farmer federations
- Food and fishing industry federations
- Rural family associations
- Local development NGOs
- Research centres (ISRA)
- Consumer associations
-

Chap. 9 – Overview of relevant decision making process that can be linked to the SD and CC study

Development priorities are generally determined by national authorities, who can (to varying degrees and depending on the country) encourage the participation of the various stakeholders. The Rio Summit and the related instruments served to reinforce this situation. Indeed, each of the environmental conventions calls for the generation of national reports, without taking into consideration pre-existing plans: National Action Plans for Desertification, National Communications for Climate Change, Biodiversity National Strategies, and so on. By the same token, Agenda 21 has led to the development of National Strategies for Sustainable Development. Based on varying and unmonitored degrees of consultation at the national level, these policy-oriented documents often have very little impact on ongoing or future national activities. There are no mechanisms or incentives to peg them to the national development plans and hence they remain isolated and unused.

In reality, effective implementation through the translation of these policy orientations into concrete economic and social policy (shown by allocations in the national budget) is controlled by the International Financing Institutions (IMF and The World Bank). This quickly brings to the fore elements of the various structural adjustment programmes and related obligations to which these governments have been subjected. Hence political decisions on the implementation of relevant development plans are externalised: the completion of financing and funding arrangements are decided ‘elsewhere’. This disconnect is often the root cause of indebtedness. The problem is, however, even more complex and wider: where important projects are concerned, one finds that not only are they decided elsewhere, but both the identification and preparation of the project are carried out by foreign experts appointed by the International Financing Institutions.

No sound sustainable development effort at global level can afford to allow billions of the world's poor to lose control over policy orientations involving their own development. This is contrary to the very objectives of Agenda 21.

Perhaps one should take a leaf out of the Meltzer Report[22], which recommends that the International Financing Institutions (IFIs) return to their original role – that of a global Development Agency for the World Bank and other Regional Banks (Meltzer, 2001). As such, they should not provide any capital,

[22] Meltzer, Alan ‘Reforming International Financing Institutions: Financial Stabilisation and Economic Development Plan.’ Economic Perspectives. State Department U.S.A. February 2001.

but technical assistance and public goods, thus creating the right conditions for attracting increased private capital flows. As for the IMF, it should concentrate on its role as purveyor of liquidity in the short term and cease its long term funding approach.

Other strategies, which are fully adapted to the needs of the developing countries, should also be explored. The Johannesburg Summit could be used to establish the basis for this debate. Two complementary strategies could also be added: one involves the creation of additional Regional Financing Institutions similar to the one proposed by Japan in 1997 with the Creation of the Asian Monetary Fund. Such regional financing institutions could be grouped into networks, each run by a global co-ordinating mechanism, in which responsibilities are shared amongst the industrialised and developing countries in a more just and equitable manner. This would confer a certain legitimacy on decisions taken: the proposed financing institutions would not be under the influence of the foreign policies of the more powerful nations, as is currently the case with the IMF and the World Bank. Regionalisation remains a dynamic factor in economic globalisation and the IFIs have to be mindful of this fact if they want to improve their efficiency and do so in a just and equitable way.

It is therefore important not to restrict ourselves to looking at national decision-making frameworks. Rather, if we want to produce decision scenarios that are in tune with the realities in developing countries, we need to analyse the entire decision-making process (sub-regional, regional, and global).

Chap. 10 – Preparing the dialogue

The preparation of the dialogue and the success of the exercise demand that we:

1. Identify the key actors in the decision-making process,
2. Identify the key stakes and various viewpoints,
3. Refer to previous experiences of political dialogue,
4. Ensure that the relevant documents are widely distributed and appropriated.
5. Ensure that the rules governing the dialogue are well defined, accepted, and respected by all.

Chap. 11 – Capacity building needs

The capacities that need to be built are at several levels and arise, in part, from the national and sectorial factors described earlier.

- At national level (especially in Finance and Planning Ministries and district authorities), the climate change issue needs to be adopted “step by step”, mainly by integrating representatives of these sectors into the various approaches and discussions relating to climate. This is not a question of developing specific modules but rather of harnessing the participation of sectorial representatives in the debate and activities arising from the implementation of the climate convention (as is already the case). It is true that there are barriers, usually institutional ones, to the implementation and monitoring of such a process, but the best way of removing these barriers is to recognise that that the above method will be the most productive for all stakeholders.

- Within the energy sector, it is clearly essential to build the capacities of energy decision-makers, particularly in the area of sectorial analysis and policies. Because of the role that has now been assigned to the regulatory bodies and the subsequent transferral of resources to them, a genuine need has emerged to boost capacities within Energy Management Boards, particularly in terms of internal analyses: for example, how can the Energy Management Board construct policies on the basis of lessons learned from the numerous projects it manages?

- In the agricultural sector, capacities need to be built at other levels. At administrative level, the main task is to capitalise on the existing studies and projects in order to discern the lessons that can be applied to future policies and strategies. Actors’ needs, however, are much wider, both in terms of representative organisations from the agricultural world and of farmers themselves.

In addition to targeting administrations, the political dialogue should help all partners to build their capacities at the various steps of the process. By providing explanations and commentaries during the dialogue sessions, capacities can be continuously built wherever they are weak.

Chap. 12 - Workplan for phase II proposal

- Presentation (through distribution) to the main partners of phase I and its results

- In-depth examination (through specific studies and compilations) of the key questions :

  Energy sector : The new institutional framework
  Energy and poverty nexus
  Access to electricity
  Role and prospects of renewable energies
  Biomass energy

  Food sector : Local food processing development
  Prospects of ecological agriculture system in the context of Senegal

- Updating of forecasts by using available models such as LEAP.

- Organisation of political dialogue

- Evaluation and lessons of the exercises conducted

References

1. Amous Samir (1992) Dégradation de l'environnement au Sénégal : Le rôle de l'énergie, PEEA/ENDA-TM.

2. Ba, Cavard and Sokona (1991), La consommation de l'énergie des ménages à Dakar : changements de structures, évolution des équipements et des comportements des consommateurs, COPED/IEPE/ENDA-TM.

3. Dème (1999), Réflexion sur les Récentes Hausses des Prix du Gaz Butane et du Kérosène, PROGEDE.

4. Direction de l'Energie (1991). Le Plan RENES 2000

5. Diouf (1998), Commercialisation et Distribution du Gaz Butane au Sénégal: Secteur Populaire, Centre de Formation Consulaire.

6. Lazarus, Diallo, and Sokona (1994), Energy-Environment Scenarios for Senegal, SEI.

7. Ministère de l'Energie et de l'Hydraulique du Sénégal (2000), Documents de Présentation des Journées de Réflexion sur le Secteur de l'Energie.

8. Ribot (1993), Forestry Policy and Charcoal in Senegal, Energy Policy, vol.21, N°5.

9. Sow and Sagna (1999), Etude Portant sur les Coûts D'approvisionnement, de Conditionnement, de Transport et de Distribution du Gaz Butane au Sénégal, Transafricaine de Technologie

10. Seed, 1993. Evaluation à mi-parcours du « Programme Regional Gaz butane dans les pays du CILSS ». Projet de rapport

11. World Bank (1989), Urban Household Energy Strategy, ESMAP.

12 - "Sustainable Development in West Africa : Beginning the process" SEI-Boston Center / ENDA, 1999.

13 -"Senegal and the Challenge of Sustainable Development".- ENDA TM, 2002.

14 – « Rapport national du Sénégal, SMDD », Johannesburg 2002.

15 - "Power Sector Reform and Sustainable Development : Brainstorming Meeting".- Alioune Fall, Président de la Commission de régulation du Sénégal - communication IEA, may 2002, Paris.

16 - « The New Partnership for Africa Development » (NEPAD), oct. 2001.

17 - Ministry of Rural Development, 1995. Agricultural Sector Adjustment Programme (PASA) / Agricultural Development Policy Paper (LPDA).

18 - Ministry of Agriculture and Pastoral Farming, 2000. National Food Security Support Programme 1999/2000 – 2003/2004 (in partnership with the FAO).

19 - Ministry of Agriculture and Pastoral Farming, 2001. Policy Letter on the Institutional Development of the Agricultural Sector (LPDI).

20 - Ministry of Agriculture and Pastoral Farming, 2002. National Food Security Strategy and Priority Programmes (in partnership with the CILSS).

22 – Thomas, Jean-Philippe. Sokona, Youba. "Development First : a prerequisite for a sustainable world" in The "Future is now"; IIED 2002.

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[ETB1] Might be better titled “Conclusion”