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COUNTRY DEVELOPMENT STRATEGY STATEMENT

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WASHINGTON, D.C. 20523

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USAID/NIGER

COUNTRY DEVELOPMENT STRATEGY STATEMENT

FISCAL YEAR 1983

Approved: James K. Bishop
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Date: February 3, 1981

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I. An Overview of the Socio-Economic and Natural Environment

A. The Physical Environment

Niger stretches over an expanse of about 1.27 million square km - almost twice the size of Texas - encompassing a segment of the Sahara desert that constitutes roughly two-thirds of the country. This landlocked country is surrounded in the south by the long border with Nigeria and by Benin, in the west by Upper Volta and Mali, in the north by Algeria and Libya, and in the east by Chad.

The major part of Niger has a desert climate with little or no rainfall. This area is of insignificant agricultural interest except for small, remote, moderately populated oases. In the southern portion of the country, crop production and livestock raising, still the principal activities of 90% of Niger's population, occur according to terrain, soils and rainfall. Most of the farming takes place in a band across the country between 13° and 15° North Latitude which receives an annual rainfall of from 350 to 650 mm. North of the approximate 350 mm. rainfall line, the area is mostly open grasslands, gradually becoming desert as one moves north, and primarily given to itinerant livestock herding.

Soil surveys indicate that Niger's overall soil resources are poor to moderately poor and marked by generally high sand content. The land has a low water holding capacity, very limited capacity to retain soluble fertilizer nutrients, is highly susceptible to wind and water erosion, and contains low percentages of organic matter.

According to Government of Niger (GON) estimates, about 30 million ha. or about 24% of the total land area is agriculturally exploitable. The GON considers about 15 million of the 30 million ha. of land suitable for agriculture to be cultivable. The remaining 15 million ha. is thought to be useful only for seasonal pasturelands and a vegetative reserve covering soils too poor for productive activities. The GON also believes that only about 24% (3.6 million ha.) of the arable land is actually

under cultivation. An AID-financed Agriculture Sector Assessment carried out in late 1979, however, expresses the opinion that most of the arable land in Niger is already under cultivation, and points to population spread and growth patterns, particularly the expansion of cultivation into areas which normally receive less than 350 mm. of moisture per year, as indicators of growing pressures on arable land areas.*

In short, though Niger probably has adequate exploitable agricultural resources to feed its current population, those resources are fragile and subject to rapid deterioration if not carefully protected and preserved. An essential element of Niger's development program must be an effort to conserve the natural resource base. This issue is discussed in detail later in this paper.

B. The People

At the current estimated annual population growth rate of 2.7%, Niger's population will have reached about 5.6 million by the end of 1981. The population is comprised of five basic ethnic groups, as indicated in Table I below.

Though the Nigerien population is generally differentiated by its divisions between the sedentary farmers and nomadic herders, and most development projects are targeted independently on these groups, there is another distinction, the urban/rural distribution, which is becoming increasingly important to the Nigerien profile. The marked changes in living standard and conditions which occur when people move from the rural to urban areas are important factors for Niger's future development prospects.

*The inadequacy of ground-level data and varying opinions about what land might be best used for pasture or cultivation in the context of current ecological concerns contribute to the divergence of opinion about total amounts of land under cultivation. Since decisions taken with respect to appropriate land use have usually been subjective ones, AID/Niger cannot resolve the ambiguity between official GON figures and those provided in the Agriculture Sector Assessment. The mission tends to agree with the Assessment, however, that if adequate arable land were available, there would be less movement of farmers to unsuitable lands than there now is. Some kind of population pressure is undoubtedly being exerted. FAO did aerial photography of Niger's agricultural zone during 1979 and is currently working on photo interpretation to get a better idea of what actual land use and cropping pressure may be.

Table I Ethnic Groups in Niger

Ethnic Group	% of Total Population	Principal Means of Livelihood	Geographic Areas of Concentration in Niger
Hausa	56%	Sedentary farmers, merchants, traders	A broad arc north of the Nigerian border
Djerma-Songhai	22%	Sedentary farmers, government workers	Southwestern portion of Niger stretching into Mali
Fulani	8.5%	Sedentary farmers with livestock holdings; and nomadic Fulani, called Bororo, who herd cattle and exchange dairy products and manure for grains and other goods.	Small concentrations in south-central Niger
Tuareg	8%	About 50% Nomadic pastoralists who herd goats, sheep, camels and cattle; about 50% sedentary, working in industry and in the urban areas	Roam over vast areas stretching from about the 15th parallel into the northernmost regions of the country.
Beri Beri (Kanuri)	4.3%	Sedentary farmers	Southeastern portion of Niger near Lake Chad

Arab, Toubou and Gourmantche populations make up a combined total of about 1.2% of the population

Although social customs and language differ in the rural areas according to region and ethnic group, the economic activities of the sedentary farmers are much the same. They cultivate and eat sorghum or millet as their major cereal crop; grow cash crops such as cowpeas, cotton, peanuts and onions (depending on regional soil and climatic conditions); use similar primitive agricultural techniques; are concentrated in the southern quarter of the country beneath the 15th parallel; and are 95% Muslim.

The sedentary rural population lives in villages averaging 450 inhabitants, but with extremes ranging from 30 to 5,000. Farms average about six hectares and support an average of eight persons, of which about 3 are fully productive workers. A survey of farm labor requirements done under the AID-financed Niamey Department Development Project in 1978 indicated that the average farm utilizes 62 days per month (or 22

days per month per productive worker) of agricultural cropping activities during the April-November growing season. The figure indicates that farms are making maximum use of available labor force during the growing season. Underemployment prevails during the period from December through March,and is a principal factor in seasonal migrations of people from rural to urban areas.

From a national perspective, poverty is fairly evenly spread throughout the population, but while very few people in the rural areas could be classified as wealthy by any standards, there are observable income differences among farmers - both within individual villages and between geographic areas. Within villages, these differences can be accounted for by various factors ranging from social and political standing within the local group, to size of family, accumulated land tenure-ship and individual industriousness. Between geographic areas the differences can be accounted for by the natural resources base such as soil fertility and rainfall patterns, as well as proximity to higher income areas outside of Niger, i.e. Nigeria.

The rural areas suffer from a single major constraint, i.e. population dispersion and isolation, which serves to perpetuate illiteracy, poor health and destructive agricultural practices. It will be many years before the rural population will benefit even from the levels of government services which are now available in the cities. Though services may be better in the cities, however, people who move there become very dependent upon the monetized economy, and suffer from cash income constraints. Thus there are trade-offs between the two lifestyles. Current economic growth and development in the urban sector could stimulate rural development through demands for rural outputs, but the boost from the urban sector will depend on proper planning and management of anticipated urban growth.

II. The Economic Environment

A. Overview

In the past few years, Niger has experienced rapid growth and structural change. The rural sector which previously played a crucial role in the economy, now figures

less prominently in the overall macro-economic picture. The drought which extended from 1965 to 1974, curtailing agricultural output and destroying livestock herds, was the first variable to alter the sector's role. The production and export of uranium was a second more dynamic variable which reduced the rural sector's relative importance to economic growth but also added a new dimension to Niger's development prospects by generating new resources to revitalize that sector.

While recent growth trends in the agriculture have contributed to overall economic growth, the percentage share of the rural sector in the Gross Domestic Product (GDP), the share of agricultural exports in total exports and the portion of agricultural sector-derived revenues, have continued to decline.

In contrast, uranium has become a crucial, albeit volatile, element in Niger's economic development and a key factor in the structural evolution of the economy. The impact of activities in the mining sector has been most marked in recent years. In 1979, uranium accounted for 16.5% of GDP, represented over 75% of export earnings, and provided the government with revenue equal to one third of the national budget. Official statements which single out uranium as the engine of economic growth also, however, underscore the necessity for channeling the revenues derived from uranium into productive, renewable sectors of the economy. Notwithstanding the impetus given to the economy by uranium, the vision of the future must be tempered by several very important factors. First, as aptly illustrated by recent events, uranium is a highly unpredictable and volatile international commodity. The boom period of the late seventies, when uranium production capacity responded vigorously to rising demand expectations and rapidly increasing prices, is over. Slower than anticipated economic activity and hesitancy about nuclear power development have contributed to decreases in actual and forecasted demand. This situation has resulted in a strong downward pressure on the price of uranium - a trend which could continue well into the 1980's. For Niger, highly dependent on this one commodity, the effects of

such a decline in price are likely to be serious and far reaching. (See Annex C). Second, uranium resources are exhaustible; thus, careful consideration must be given now to the judicious investment of uranium-derived revenues. In addition, target sectors and institutions' ability to effectively absorb available revenues must be considered.

Slower economic growth and investment shortfalls are expected over the next few years as the contribution of uranium-mining activities to GDP, to foreign exchange earnings and to government revenue declines. In addition, the country's external debt situation is likely to deteriorate as a result of larger commercial borrowings and lower export earnings. While there may be a decrease in capital goods imports due to the postponement of further mine openings, this is not expected to have a major influence on the negative trade balance. Continued inflows of foreign assistance will be crucial as Niger seeks to achieve targeted objectives while adjusting to a changing economic environment.

However, the changes to the economy thus far and those expected in the coming years, particularly as a result of the volatility of the uranium market, can serve to re-emphasize the importance of the rural sector to Niger's economic future, and of agriculture as a productive, renewable resource. Efforts to increase production, to augment incomes, and to better the lives of those in rural areas will be crucial to the long-term self-sustaining development of the nation.

B. The Structure of the Economy and Major Macro-Economic Trends

1. Production and Income

- Overall trends and sectoral distribution of GDP. In the past five years the Nigerien economy has registered impressive rates of growth in real terms, averaging over 12% annually. The most rapid changes occurred in 1976, due primarily to recovery from the drought, and in 1979 as a result of a substantial increase in uranium-mining

activity. In that year, output of uranium reached 3740 MT at a sales price of CFAF 24,500/kg ($45 lb U308).* GDP in constant 1975 prices was estimated at CFAF 257.5 billion ($1,211 billion) or $228 per capita. Expressed in current prices, GDP amounted to CFAF 443.0 billion ($2,082 billion) for a per capita figure of $392.

While uranium has been the major force in Niger's recent economic growth, agriculture remains nonetheless an integral part of the economy. Crop production and animal husbandry are the primary economic activities in Niger and despite the structural changes that have taken place in the economy, the rural sector still accounts for 44% of GDP. In recent years there have been moderate increases in output, particularly for cereals. Production of millet and sorghum is expected to be 11% higher in 1979/80 than in 1977/78 and well above pre-drought levels. Although the Five Year Plan projects a more marked decline of the rural sector's share in GDP (to 33% in 1983), it is possible that increased agricultural output coupled with the declining value of uranium production will mitigate this trend.

Since at least 1976, the most dynamic sector in the economy has been uranium mining. Spurred on by the supply shortages and a producers cartel, the world price of uranium rose more than sixfold between 1973 and 1980.Output in Niger expanded rapidly from 849 MT of uranium metal to 4000 MT during the same period. These events resulted in an eight fold increase in the contribution of the mining sector** to GDP between 1975 and 1979 at current market prices. Expressed in constant 1975 prices, this contribution was valued at CFAF 42.3 billion (approximately $200.0 million) in 1979, accounting for 16.5% of GDP. The transport, construction and services sector also received an impetus from activities in the mining sector.

*Although Niger's uranium is exported in the form of yellow cake averaging 70% purity, official prices are expressed in terms of CFAF per kilogram pure uranium metal (CFAF/kg U). For comparison with U.S. prices these are translated into dollars per pound U308 ($/lb U308) within parenthesis.

**This refers to the gross contribution to the economy, <u>not</u> the net contribution to GON revenue. See section on Public Finance and Investment.

The near term future outlook for growth in these sectors is clouded however by the declining worldwide demand for uranium coupled with a surge in supply. As a result there has been a severe downward pressure on the price and concurrent investment disincentives. Until this situation changes, it is likely that Niger will experience much slower growth rates than during the 1975-80 period.

- Estimate of the Contribution by the Modern and Traditional Sectors to GDP

In Niger, as in most developing countries, the activities in the traditional sector constitute an important, although difficultly quantifiable component of GDP. A detailed analysis of the breakdown between traditional and modern, rural and urban sectors has been attempted by the Ministry of Plan. Based on provisional results for 1977 it was estimated that the traditional, rural sector accounted for 60% of GDP (total GDP estimated at CFAF 309.6 billion or $1.263 billion)*. It is estimated that two-thirds of the rural sector's output does not pass through commercial, monetized channels (i.e., is consumed on the farm). The modern, urban sector (primarily mining and administration) accounted for approximately 28% of GDP, while traditional urban activities (such as commerce) accounted for the remaining 12%.

2. Public Finance and Investment

- Overall budgetary situation and outlook for 1981. Since 1975, overall budgetary developments have been largely influenced by the inflow and availability of uranium-derived revenues. Escalating sale prices of uranium and expanding production have contributed to sizeable yearly increases in central government revenues and expenditures. At the same time, these increases have permitted the abolition of the head tax and other tax policy changes which have shifted the tax burden off the poor, and increasingly to the commercial and industrial sectors. Tax revenue has contributed about 80% of the overall revenue increase, with fiscal revenues from uranium accounting for an estimated CFAF 46 billion (approximately $235 million) between 1975 and 1979. In 1980, uranium-derived revenues were estimated to be in excess of CFAF

*These figures are different than those estimated by the IMF due to differences in accounting procedures. The Ministry of Plan allocates a much larger share to the rural sector than does the IMF (45%) due to the estimation of production consumed on the farm and of traditional commercial activities.

26 billion ($120 million). Turnover taxes have also made a significant contribution to tax revenue by more than doubling between 1976/77 and 1979/80. Taxes on imports constituted the bulk of taxes in this category, reflecting increases in the volume and prices of imports. These taxes will continue to make an important contribution to GON revenue, although certain categories of imports are expected to grow more slowly reflecting trends in the mining sector.

The GON has pursued generally conservative policies in current expenditure in an effort to minimize nonproductive expenditures (such as salaries and other administrative costs) and increase the amount available for investment through the National Investment Fund (FNI). Government policy to transfer to the FNI an amount equivalent to the fiscal revenue derived from uranium has resulted in large annual increases in allocations - 130% between 1975 and 1977, and 40% between 1978 and 1980. Actual expenditures, however, have been substantially below these levels. Functional allocations of the FNI have reflected the GON's commitment to social services and human resources. Between 1977 and 1980, the education, health and other social services sectors received an average of 30% of the investment budget (see tables II and III.)

Much slower growth of the public sector is forecast for 1981 as a result of the anticipated decline in uranium-derived revenues. The FY 1981 budget of $374 million is only 12% above the previous year's budget (in contrast to increases of 25% in the two previous years) and, for the first time, normally non-revenue items such as transfers from reserves and some foreign assistance are included. In addition, the resources earmarked for the FNI did not increase and remain at the same nominal level as for 1980 (CFAF 26 billion or $120 million).*

The country's absorptive capacity - its ability to effectively use available revenues - has been hampered in part by lengthy bureaucratic procedures and a lack of adequate, trained manpower to carry out projects. In a sense, a slow-down of uranium-derived revenues, which have been the primary contributor to Niger's increasing

*Lower than anticipated resources available to the FNI over the next few years also have implications for GON contributions to the Five Year Plan.See Annex A and C.

Table II

FUNCTIONAL CLASSIFICATION OF THE FNI - 1975/76 - 1980/81

(in percent and CFAF million)

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
General Public Services	8.4	13.9	18.9	11.0	14.0	
Defense	1.0	1.6	2.5	4.2	2.3	
Education	18.3	29.3	23.5	17.9	25.1	
Health	3.4	2.4	3.5	3.7	6.0	
Other Social Services	2.1	.8	1.0	3.1	2.8	
Economic Services of which	56.7	43.2	47.2	58.9	45.5	
(Agriculture)	(19.6)	(8.7)	(9.7)	(20.1)	(14.6)	
Other	10.0	8.7	3.1	1.1	4.2	
TOTAL percent [a]	100	100	100	100	100	100
CFAF million	2,576	5,762	13,623	17,624	26,000	26,000 [b]
percentage increase	--	123.7	136.4	29.4	47.5	--

Table III

FUNCTIONAL CLASSIFICATION OF GENERAL BUDGET EXPENDITURE

1975/76 - 1980/81

(in percent and CFAF million)

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
General Public Services	45.4	44.3	40.8	37.7	46.5	
Defense	7.1	6.8	7.3	6.9	6.7	
Education	18.9	15.5	19.2	19.2	19.6	
Health	7.6	6.5	6.9	7.1	6.7	
Other Social Services	.6	.7	.8	.9	.8	
Economic Services of which	11.2	11.4	11.3	10.2	10.2	
(Agriculture)	(4.6)	(4.2)	(4.1)	(4.3)	(4.4)	
Public Debt	7.0	10.4	9.2	15.0	9.4	
Other	2.8	3.7	4.4	2.9	-	
TOTAL percent [a]	100	100	100	100	100	100
CFAF million	21,591	27,444	30,782	37,447	44,899	54,600 [b]
percentage increase		27.1	12.1	21.6	19.9	21.6

Source: IMF

a) May not add to 100 due to rounding
b) Estimate - breakdown not available

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expenditure capacity, could serve to narrow the gap between the allocation of expenditure and the implementation of projects. External assistance flows are likely to remain substantial and increased commitments to such areas as education, training, planning and administration, if carefully planned and targeted, can do much to increase the country's absorptive capacity.

- Public debt. Prior to 1974, foreign debt grew slowly and external capital inflows consisted primarily of highly concessional loans and grants. The exploitation of Niger's uranium resources brought great changes, with the GON more willing to use foreign debt to finance economic development, and commercial lenders more willing to increase their exposure in Niger. By the end of 1975 total outstanding debt surpassed $200 million and by mid-1980 reached an estimated $767 million.

In addition to the growth of public debt, there also has been a substantial change in the composition of the debt. Through 1977, the portion of private debt in the total outstanding rarely reached more than 3%. Since that time, however, there has been a shift in the country's borrowing pattern partially towards the Eurocurrency market where loans have been contracted on much less favorable terms. Of the publicized debts contracted by the GON in the first ten months of 1980, the share of private debt - 56% - exceeds that from public sources for the first time.

Debt service payments continue to be manageable, although the FY 1981 budget shows payments increasing by over 100% from last year. The debt service ratio (debt service/exports) has remained less than 5% for the last few years and thus well below the critical 15% mark.* However this burden will increase greatly in the next few years as uranium export earnings decline by perhaps as much as 15% and additional capital inflows are required to make up for revenue shortfalls. If the GON is firm in its commitment to maintain its investment plan by recourse to commercial borrowing, the situation could be exacerbated. Unfortunately, the GON debt management

*Exact figures are difficult to ascertain due to discrepancy between sources and lagged accounting procedures.

office, created less than a year ago in response to donor pressure, is only now beginning to be staffed.

- Recurrent Costs. Recurrent costs of development projects (those operating and maintenance costs stemming from investment outlays) are of increasing concern to GON development planners and financial managers, and to donors. As larger flows of external assistance (and domestically derived revenues) are channelled into ambitious investment programs, the level of recurrent cost requirements increases.

The GON has recently undertaken its Five Year Plan whose public investment allocations amount to CFAF 384 billion ($1,805 billion). Based on optimistic assumptions regarding the availability of uranium-derived revenues, it is expected that over 40% of the Plan will be financed through the FNI and the remainder would depend upon foreign aid and borrowing on international financial markets.* Although some recurrent costs are already budgeted into the planned expenses, others are probably not and these could be substantial if the gap between planned and actual investment is narrowed.

According to working documents of the CILSS Recurrent Cost Study for Niger (January 1980), recurrent costs took up 18 to 20% of the total budget (current and capital budgets) in 1979 and could amount to between CFAF 22.3 and CFAF 43.1 billion ($104 million and $203 million) by 1984 compared to projected available resources ranging from CFAF 27.6 to CFAF 29.7 billion ($130 million and $140 million).* The study assumed that all uranium revenues were transferred to the FNI, and thus only non-uranium derived revenues, less expenditures on other items, would be available to finance recurrent costs. In conclusion, the study pointed to three possible alternatives which would reduce

*The study used high and low estimates for possible recurrent costs, foreign financing and Plan realization.

*See Annex A for an assessment of the Five Year Plan

the amount of resources available for investment and thus ease a potentially large recurrent cost burden. First, a portion of uranium-derived revenues could be used to encourage private consumption and the satisfaction of basic needs. Second, these revenues could be invested in financial assets abroad. Finally, a portion of uranium-derived revenues could be used directly for recurrent cost financing.

However, the context in which to judge both the availability and the use of financial resources has changed significantly. For the next few years at least, Niger will not be able to depend on rapidly increasing uranium-derived revenues therefore there will be less available resources for the country's current and capital expenditure requirements (including recurrent costs). At present, about 10% of the FNI is allocated to donor project counterpart financing. While the bulk of these funds are assumed to support initial investment costs, some portion is probably also directed towards recurrent costs. This trend may continue in the short term as the GON is faced with budgetary constraints, and the choice between allocating funds to new investments or channelling more funds in support of recurrent costs. Although a general shift in favor of recurrent cost financing through the FNI is not altogether desirable, since this implies less resources for new, potentially revenue-generating activities, it is clear that recurrent costs must be dealt with. Activities supported by recurrent costs can strengthen, and ensure the continuation of, existing projects.

Given a decline in available revenues, it is possible that planned outlays under the Five Year Plan will be curtailed and thus recurrent costs lower than originally projected will result. Another factor which might reduce the level of recurrent costs is that disbursements of funds and actual implementation of projects have generally been significantly below original allocation levels, though this may be expected to change.

The outcome will depend on a number of interrelated factors including the magnitude of the revenue shortfall, the ability of the GON to attract external resources and

the mix of projects chosen. If inflows of external capital (both loans and grants) increase and if priority continues to be placed on high recurrent cost sectors such as education and health, the level of recurrent costs would remain substantial. Many projects however, do not have a built-in recurrent cost component and thus do not adequately address a potentially large financial and human resource constraint. Both the GON and donors need to consider the recurrent cost implications of investment and development activities.

3. Foreign Trade and Payments

- Overall balance of payments developments. Niger's balance of payments for the six year period through 1980 is characterized by increasing current account deficits, which until 1979 were generally more than offset by capital inflows, originally in the form of foreign grants but increasingly in the form of foreign investments and loans. The deficit on goods and services increased threefold between 1975 and 1980 due primarily to a rising trade deficit which reached $131 million. A sharp increase in uranium exports in 1979 narrowed the gap temporarily but was not able to keep up with imports which rose by 38% between 1979 and 1980.

Official transfers have slowed somewhat since 1975, reflecting a discontinuation of emergency food shipments and the fact that Niger has been increasingly able to borrow resources rather than to rely on grant assistance. Increased investment in the mining sector and borrowing have accounted for the sixfold jump in capital inflows between 1975 and 1980. Between 1975 and 1978 these inflows resulted in overall balance of payments surpluses. However, in the following two years, small deficits were registered and this trend could be exacerbated in future years.

- Foreign Trade. Available data on foreign trade does not give a complete picture of Niger's trade relations with other countries due to a large unrecorded trade sector, (particularly with Nigeria) and delayed accounting procedures. It is

clear however, that uranium exports dominate, accounting for approximately $426 million or 80% of total foreign exchange earnings in 1979. The 20% drop in the sales price of uranium in 1981, and the postponement of further mine openings will certainly change this picture for at least the next few years.

Livestock exports are also important, accounting for an estimated 14% of the total in 1979. Unrecorded exports across the border to Nigeria are assumed to be substantial.

Imports have increased rapidly in recent years, particularly machinery and transport equipment related to mining activities and petroleum products. In 1976, the latest year for which a breakdown is available, imports in these categories were valued at over $70 million. Capital goods and energy imports were probably the main contributors to the estimated four-fold increase of total imports between 1975 and 1980. Although energy imports will continue to take up a significant portion of Niger's foreign exchange, the impact of rising energy costs seems manageable. Niger is currently embarked on an ambitious program to develop indigineous energy resources which should reduce the import burden in the longer term.

III. Constraints to Development

A. Intersectoral Constraints

1. Natural Resources. The rising or dwindling fortunes of Niger's renewable natural resources are variously ascribed to either a long-term, gradual climatic change or to the negative effects of inappropriate land-use practices on a fragile ecological base. Strong evidence argues that there is a cyclical pattern of climate change and that, up until a century ago, there existed a traditional harmony between the environment and cultivation/herding practices.

Development planners in Niger are focusing today on the mounting population pressure and the consequent increased demand on the normally naturally regenerative

capabilities of farmlands and grasslands. This pressure has become the culprit in the progressive deterioration of Niger's renewable natural resource base, and the permanent weakening of the countryside's ability to sustain a human population. The phenomenon of desertification does not occur in Niger as the relentless advance of an existing desert. Rather, as the following example shows, it occurs as a usually slow and intermittent in-place degradation of vegetative, land and water resources coincident with population pressure. In Niger, it is occurring today at several scattered locations.

Tchin Tabaraden is an administrative post, created since independent, situated in the pastoral zone. It was formerly the prime domain of fiercely independent Touareg herdsmen. Under a policy of sedenterization, the colonial administration imposed a structure of groupings in the region, and encouraged population concentrations with markets, government supplied services and the establishment of permanent water sites. Over the past forty years, a process has evolved, and in the last fifteen years accelerated, which has led to an animal and human over-charge of the capacity of the region to sustain a vigorous natural environment. This process can seriously jeopardize the environment's ability to regenerate preferred annual and perennial grasses. Plans formulated for increased livestock productivity in the early 1960's wrongly, or incompletely, identified the region's problem as a lack of access to subterranean water during the dry season. Calculations of the area's stocking rates led planners to think that the grassland had not reached capacity. However, while the regional pasture was not overloaded, there were already high concentrations of livestock around traditional, dependable water sources. By not taking an ecosystems approach, planners missed the point that grasslands ought to be provided in balance with water resources, and that though increased numbers of water sources might be a good idea, access to these water sources had to be limited if the ecology were not to suffer. Access has not been adequately limited, over-grazing has occurred, and the result has been desertification. Today, the area around Tchin Tabaraden is showing preliminary signs of a step by step deterioration which, if allowed to continue, will result in the permanent loss of life-supporting vegetation.

The symptoms and causes of the degradation of the natural resource base are identifiable. However, detailed planning and implementation of programs to reduce and eventually to check the process of desertification in Niger have hardly begun. In many areas retrograde practices are still the rule. Corrective technologies exist, however, which can halt deterioration and even enhance Niger's natural resource base. Programs in forestry can reduce destruction based on the needs for energy and secondary forest products; improved range management can help guarantee land cover while increasing available forage and livestock off-take rates; and tree propagation

and distribution programs can provide sources of food and medicines, as well as material for growing windbreaks and live fences to stabilize soils. Traditional conservation practices such as terracing, contouring, strip-cropping and concentrated water control structures can serve not only to save soil, but also to save valuable water.

There are two basic problems. First, most farmers and herders do not know what they might do to stop erosion, even if they recognize it as a problem. Second, they cannot be expected to implement conservation efforts on an individual basis. The problem is a regional one which requires regional, or community-wide, planning and cooperation. The solution requires, therefore, that the GON (1) help communities to determine what conservation techniques might be appropriate for their areas; and (2) that it help impart to individuals within organized community associations the necessity of implementing community-wide conservation programs. These planning and coordination efforts, combined with work in alternative energy development, improved agricultural and livestock production technologies, and education, information and communications activities, should permit real change in the outlook for Niger's renewable natural resource base.

2. Human Resource Limitations A weak human resource base is the single most important constraint to the implementation of development programs in Niger. This is due in large part to the fact that there was minimal investment in education during the colonial period. Niger is still trying to catch up in this area. Other factors, including poor health, limited participation (women) and ill-defined government service roles and delivery methods, also contribute to the human resource problem which pervades almost every sector of the Nigerien economy. The GON is undertaking efforts in each of these areas to improve manpower performance.

a. Training and Delivery. Although the GON and the donor community recognize the shortage of trained people as a primary constraint to development, available studies and GON projections of future training needs carried out to date have been largely based on undefined or arbitrarily established manpower requirements, and have been

unconvincing and often contradictory in their results. The manpower shortage in Niger is often still recognized by its symptoms - that few services are adequately staffed to carry out their functions completely and that training programs rarely graduate enough people to fill all the shortages. The problem is that personnel requirements are not yet well defined. The GON is currently in the process of developing, testing and choosing the methods which it can use to permit limited numbers of cadre to reach large numbers of rural Nigeriens. The agricultural extension programs provide a good example of this:

> In the agriculture sector, the GON is using farmers themselves as agents for extension, through an extensive cooperative network, and through farmer and farm couple training centers. The cooperative system, which already includes about 50% of agricultural producers, allows the farmers to build their own system of infrastructure in a situation where the government cannot extend its own system down to the farmer. The system serves not only as a mechanism for exchange of ideas between farmers, but also for dissemination of ideas from government technicians, and distribution of necessary inputs for implementation of improved agricultural technologies.
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> The farmer training system is another GON initiative in which farmers and their wives are trained intensively during one crop season, and then sent back to their own farms to use and demonstrate the practices they have been taught. If follow-up contact is maintained between the farmers and the center, if new technical packages are successful, and if necessary agricultural inputs are made available in the communities, the GON believes that a spread effect occurs resulting in faster dissemination of rural technologies than can be effected through conventional extension programs. This system also permits smaller agent to farmer ratios. Finally, a primary benefit is that the farmer does not become an employee and thus a recurrent cost to the government.

A FED-financed productivity project which uses these two extension systems, and which began in the late 1960's, reached farmers cultivating over 18,500 ha. during the 1978 growing season. An evaluation report published in March 1979 by a European consulting firm indicates that farmers reached by the project achieved significantly higher yields on principal crops in 1978 than did their neighbors (e.g. 23%

higher yields for millet, 35.5% for sorghum, 22.9% for groundnuts and 43.3% for cowpeas). Though there are more factors contributing to these improved yields than just the extension systems, these are fundamental, and it is apparent from these results that the systems can work. Unfortunately, these extension programs have not been adequately tested to serve as the only extension systems, and other programs, utilizing conventional extension methodologies, are also being tested.

Whichever systems are eventually chosen, the effectiveness of the delivery programs will depend on the quality of personnel available. There are only limited numbers of public school graduates available to work in field level jobs, and they are generally undertrained. The expansion of technical schools is a logical medium term strategy for upgrading technical skills of undertrained public school graduates, and is one which the GON has adopted. This expansion alone, however, will not solve the problem. AID experts working at the Practical School of Rural Development at Kolo report that even when relevant subjects are included in a curriculum, teachers often fail to emphasize the most important concepts in the material to their students or to demonstrate practical relationships between classroom lessons and field problems. Efforts to implement a system of "instruction by objectives" have been actively resisted by many teachers at the school. Niger's educational institutions are hampered by irrelevant curricula and an inappropriate pedagogical system inherited from the past. Although the GON is making efforts to incorporate more practical training programs, this represents a major shift in educational philosophy, and it will take time to implement the change and make it felt in the field.

b. The Role of Women. Although women probably donate more than their fair share to daily chores which result in Niger's GDP, their potential contribution could be even greater. If women were trained, if their intimate knowledge of the everyday activities which represent goods and services in the Nigerien economy were

exploited, and if they were routinely included in participatory development projects, the efficiency of Niger's available human resources could increase dramatically.

Most Nigerien women are totally absorbed, and gradually worn out by the multitude of domestic tasks which their culture dictates that they perform as wives and mothers. The majority marry at a young age and produce children as often as nature allows. The physical toll of early marriage and multiple pregnancies, combined with the effects of arduous physical labor, contributes to rapid aging and statistically demonstrable early mortality, e.g. census figures show that while 52% of the country's 0-34 age cohort is female, less than 45% of the 35-65 age group is made up of women.

Women are responsible for food preparation and child-care activities. In addition, most rural Nigerien women farm small fields independently and assist with cultivation of their husband's larger fields. Though the women's fields and production are relatively small, because their fields provide the vegetables to go with major farm staples, their contribution to family nutritional levels and balance are significant. Many women also earn cash income from sales of handicraft work such as woven grass mats and clay pottery.

A number of factors in the current demographic profile of Niger point to ways in which women can be drawn into the development effort in Niger. For example, 42% of the female population is below 14 years of age. This group represents a very large future turnover in the female population and offers opportunity for very rapid demonstration of change in the traditional position of women in Nigerien society. In addition, a small, yet growing percentage of the current female population has access to some degree of formal education. Female students currently comprise 35% of primary, 28% of secondary and 20% of the university population, and female teachers account for 31% of total public school instructors. Current efforts to expand

access to public media programming could potentially have a marked effect on the modern Nigerien woman's perception of women's roles in the world and, ultimately, in Nigerien society. Although the GON actively supports and promotes access of women to non-traditional jobs, institutional changes are necessarily of a long-term nature. The GON has provided support through official recognition and operational assistance to the Association des Femmes Nigeriennes (AFN), through increasing enrollments of women in the educational system, and through legal limitations on dowry payments and liberal maternity policies for employed women. Urbanization and new media technologies may speed the incorporation of women into more dynamic positions in Niger's development process.

c. Health and Nutrition Health will play an important role in determining whether Niger can meet its goal of national food self-sufficiency. Unless improvements in the population's health occur, this factor, in combination with other related constraints (e.g. population growth and poor nutrition) will make achievement of the goal a questionable prospect.

Poor health is a fact of Nigerien life resulting in the imposition of severe constraints on its human and productive resources. It has one of the worst Physical Quality of Life Indexes (14) of any Sahelian country. The life expectancy of a baby born in 1980 is 42. Of the approximately 250,000 children that will be born this year, more than 40,000 will not reach one year of age. Of those that do, more than 50,000 will not reach age five, having suffered from unspecified diarrheal diseases and debilitating chronic malnutrition, recognized contributors to the high mortality rate of this age group.

In the adult population, fever, wounds and minor trauma, upper respiratory infections, eye infections, skin sepsis and diarrhea comprise 50% of the complaints diagnosed at hospitals and medical centers throughout the country. Recent epiodemio-

logical studies by the Organisation de Coordination et de Cooperation pour la Lutte Contre les Grandes Endemies (OCCGE) indicate a surprising 25-66% increase in the incidence of Schistosoma haematobium in sampled villages along the Niger river. The capital city of Niamey witnessed a 21% increase in active cases of tuberculosis from 1978 to 1980.

The implications of health for Niger's economic and social development are clear. If improved health status permits more active participation of the country's population in its own development process, then development prospects are dramatically improved; if health status detracts from already tentative development prospects, then the probability of ultimate goal achievement is seriously compromised. Thus, efforts to reduce malnutrition and disease and the rate of population increase are essential elements of a Nigerien development strategy, and can prove to be cost effective.

Costs of improving nutrition, for example, would be small in relation to costs of reduced learning ability and productivity which are associated with malnutrition. The FAO reports that the majority of Nigeriens receive at least 20% less than recommended levels of calories per day. This fact alone translates into reduced physical abilities, but is exacerbated by the fact that 25-37% of the energy expended goes for such chores as carrying firewood or water. (These chores are traditionally relegated to women, and are added to their myriad other responsibilities despite present inadequate caloric intake). Programs geared to change and improve present nutritional habits, coupled with effective control of communicable diseases and improved hygienic practices, would positively affect health status, productivity and life expectancy.

Costs of reducing preventable diseases are small, yet these diseases continue to rob Niger of valuable manpower. In 1978, for example, there were 20,000 cases of

schistosomiasis in the Niamey area. This represents about 140,000 man-days of work lost to the economy. Using the W.H.O. figure of approximately $3.00 (U.S.) as the average cost to fully immunize a child, for less than $800,000 GON public health experts estimate that 40,000 cases of measles and an accompanying 6,000 deaths, 30,000 cases of whooping cough, and about 3,000 cases of paralytic polio could be avoided annually in Niger.

Recognizing the costs of poor health to its developing economy, in the period 1965-74, the GON sought to develop a managerially decentralized and adaptable health system suitable to Niger's needs. Emphasis was given to primary health care provided by auxiliary health personnel through a system which was targeted at the rural areas and was essentially preventive in orientation.

Few of the objectives formulated for these ten years were achieved, principally due to a lack of qualified personnel and higher relative budget allocations for curative services. In 1970, only 12% of the budget was earmarked for preventive services and MCH activities. In contrast the present Five Year Plan affirms the priority of preventive services, and re-emphasizes the GON's commitment to a Primary Health Care Strategy, setting quantitative targets both with respect to financial resources (approximately 49%) and personnel.

There are several constraints, however, to effective program implementation. The most glaring is the lack of adequately trained manpower. There are not enough village health workers to provide the total population coverage demanded by the system. There are not enough nurses to maintain the already existing dispensaries, let alone those proposed, nor enough nurses to train and supervise both certified nurses and village health workers. The emphasis the program places on the importance of regular supervision implies mobility, yet there are no mechanics to assure

regular vehicle maintenance. There is a problem of logistics. Equipment and drugs must be obtained and evenly distributed, but there are few trained managers, and those that are available find employment more lucrative in the private sector. There is no organized health planning unit in the Ministry or elsewhere and only one of the 7 Nigerien physicians assigned by the Ministry as Department chiefs has any training in public health.

Niger's primary health care program is still in its formative years and, therefore, is experiencing problems of the type mentioned above. It nevertheless has already served as a model for one other Sahelien country health delivery program, and is generally regarded as having the potential for being an excellent health delivery system.

d. Population Growth and Rural Displacement There are two aspects to Niger's demographic problem. One relates to overall population growth, the other to rural-urban shifts in the current demographic profile.

Population Growth As noted earlier, the increasing population has probably already moved into most of Niger's arable land areas. Although there may be more marginal land available for cultivation, and areas which might be cultivated more intensively, ecologists believe that continued spread of the population into marginal lands must be arrested if Niger's natural agricultural resource base is to be maintained. A halt to this spread is unlikely, however, unless more intensive agricultural practices result in increased food yields per hectare, or the rate of population growth is reduced.

Though the ideal solution to the problem lies in pursuit of both options, there is reason to doubt that adoption of new agricultural technologies will result in a long-term solution, or that religious and cultural biases will soon permit active,

meaningful efforts in the area of family planning. GON health officials concluded at a recent meeting that there should be "an integration of (family) planning services into all mother and child health clinics... sensitization of national and religious authorities to encourage them to define a national population policy... dissemination of information about well-being and reduced mortality to substitute for the natalist myth... and introduction of human reproduction courses into the educational program". It is important to note, however, that the medical community is generally far ahead of the political community on this issue, and the political community in Niger is not now generally speaking in these terms. Though perhaps changing, the official stance of the GON is that there is an abundance of arable land available for cultivation in Niger

The people may hold the same attitudes the politicians espouse. Though not statistically representative of the country, a 1979 survey of 1,383 mothers in Niamey shows that 11.8% became pregnant within one year after a previous delivery, 60.9% became pregnant within 2 years and 17.4% within 3 years after a delivery. Only 6.8% waited more than three years after delivery of a previous child to become pregnant.

Other development concerns are also affected by population. Neither increased agricultural production nor a reduced population rate, alone, will make other aspects of the development process easier. Reduced population growth, however, would allow the GON greater opportunity to improve future ratios of public service personnel and infrastructure to population, whereas increased agricultural yields, alone, will simply ensure a continued race between rates of food production and population growth.

Rural Displacement. The second facet of the population problem in Niger is the rapid shift of population from the rural to urban areas. Whether because of an inevitable socio-economic shift which comes with development and modernization and/or

a phenomenon related to reduced land availability, large numbers of people are moving into Niger's cities every year.

The GON is concerned about the migration of the population to Niamey and other towns. The Five Year Plan sets as one of its objectives the control of the capital's unchecked growth. Investments in social infrastructure (schools, dispensaries, water systems), are being made outside of Niamey and much of the investment being made in Niamey, e.g. INRAN and the Practical Institute for Rural Development, is meant to serve the rural areas. Development of secondary poles of attraction in the central and the eastern part of the country has been proposed, and the creation of market towns in high density agricultural zones has also been suggested. However, the majority of investments have historically been and continue to be concentrated around the capital or the mining centers. Forty-four of the 46 doctors in the Department of Niamey practice in the city, and as many new classrooms are proposed for the city of Niamey as for one entire Department with a population two and a half times that of the capital. Unfortunately, as necessary as this priority treatment may seem, it encourages a trend towards urban growth around a single major center. This demographic trend has very important implications for Niger's development efforts in areas from employment to social services to agriculture (markets) and energy, and increased attention to the problem is required.

B. Sectoral Constraints

1. Agriculture.* Agricultural production provides about 44% of Niger's Gross Domestic Product and about 16% of its foreign exchange earnings, as well as the basic food needs for its growing population. During the next decade, it is assumed that

*Much of the information contained in this section of the CDSS is based upon material found in the AID-financed 1979 Niger Agriculture Assessment. Additional detail and analysis on a number of the subjects covered here, as well as corroboration of AID/Niger's assessments, can be found in that document.

agriculture will continue to have a significant role in income generation and a more critical role in meeting the basic food requirements of the growing population. The rate of increase in agriculture production is barely keeping up with population growth, estimated at 2.7% annually. Given the likelihood of a drought situation eventually recurring, great strides will have to be made in food production and a number of significant constraints in the Niger agricultural system will also need to be addressed if Niger is to reach its goal of achieving food self-sufficiency with security reserves within the next five years.

Since 1975, there has been a fluctuating upward trend in cereals (millet and sorghum) production. Annual grain production is currently higher than the levels recorded during the decade preceding the recent severe drought, and during the past two years has been above subsistence requirements. Farm-level and national grain stocks have therefore been building at an encouraging pace. Traditional cash crop production, on the other hand, has been on the decline since 1966, particularly the production of groundnuts and cotton. This circumstance is probably due to the increased emphasis being placed upon cereals, and to a blight (aphids) which struck groundnuts during the period 1973-75 and caused farmers to turn to "safer" crops. It is also due, however, to shifts in the market characteristics of two traditional food crops, millet and cowpeas, which have become increasingly important as cash crops supplying parallel markets leading into Nigeria. Although this subsistence-to-cash shift has been positive in terms of farmers' incomes, most of the trade takes place in unofficial channels, and the GON, therefore, loses potential export earnings. As cowpeas are an important soil builder, and since at least some portion of the cowpea crop is traded officially, there is a positive element in its increased cultivation, but there is, nevertheless, a degree of trade-off with the parallel market which is not entirely in the government's interest. Since both millet and

cowpeas are expected to show regular increases in output, the government will have to measure its price moves very carefully over the next few years if it expects to increase cash crop production (including the traditional ones of groundnuts and cotton) and agricultural export earnings while balancing land pressures and food needs.

Government policies can influence agricultural production and marketing although the implementation of such policies often depends on a delicate balance between possibly conflicting interests. Pricing and marketing policies in Niger attempt to guarantee cereal producers a minimum price which is compatible with the cost of production and with the desire to keep food prices down, especially in urban areas. Although Niger has raised official prices significantly over the past few years with the aim of strengthening the rural economy and increasing official food reserves, much of the marketing of foodcrops is assumed to take place through unofficial channels where farmers' remuneration is even higher. As the Niger Agriculture Assessment points out, policy making in this area is often hindered by a lack of basic data about price behavior, security needs, market flows, etc., and by the shortage of reliable information about farmer behavior with respect to production decisions and crop sales. Very important decisions, therefore, must often be based on rather arbitrary assumptions.

Cropland under cultivation at the present time is estimated at 3.6 million ha. In order for agriculture production to keep up with expected population growth, over eight million ha. would need to be put into production by the end of the century, and, as noted earlier, the extra land may simply not be available. In any case, additional cropland on this scale will mean that more marginal areas will be brought under cultivation. A few of the implications of moving into marginal agricultural areas are: farms will be located in lower rainfall zones with much greater risk

of drought-induced crop failure; fallow periods will be shortened considerably risking depletion and desertification; grazing lands may be eliminated; and increasing conflict between farmers and livestock herders becomes more likely.

The GON has begun to recognize the implications of continued expansion into marginal land areas, and over the past few years has made a quiet but major shift from extensive to intensive agricultural policies. It has placed increased emphasis on raising output per unit on presently cultivated lands, particularly through the mechanism of the productivity projects, which introduce and disseminate improved technical packages for rainfed agriculture, but also through adaptation of bottomland areas, especially along the Niger River, to irrigated agriculture. Irrigation potential is now limited to approximately 60,000 ha., but the construction of the Kandadji Dam on the Niger River could raise that by some 129,000 ha. Niger is converting land to irrigated agriculture at a rate of about 1,000 ha. per year but this pace expected to accelerate in the coming decade. The bulk of food output will, however, continue to be produced from rainfed areas for the foreseeable future.

Improved research in all agricultural disciplines will have to be accelerated in order to assist the sector in keeping up with growing food requirements. During the past ten years, much progress, particularly in development of drought-resistant strains of seeds, has been realized through Niger's research agencies. However, Niger's agricultural research institute, INRAN, will have to be strengthened significantly in orientation and management capability in order to meet the burdens of a growing research program. In particular, farm level applied research must be undertaken to support the GON's efforts to identify improved production techniques and to communicate these techniques effectively to the farm population. Since there is not yet a capacity for adaptive research in the country, current research programs tend to emphasize improved varieties in the laboratory and on the experimental farm.

In some of the more intensive agricultural projects, the ratio of extension agents to farmers is no more than 1 to 350. Although efforts are being made to assist agricultural schools through multidonor assistance, mid-level manpower shortages can be expected to be felt indefinitely. Moreover,the quality of the extension agents is dishearteningly low. With a primary school education which barely provides basic literacy and numeracy, plus some secondary school and short-term (usually not more than nine months) technical training, these agents on the whole have little to offer an experienced farmer. The sheer impossibility of achieving a reasonable ratio of qualified extension agents to farmers has forced the GON to try some innovative approaches to the problem of rural transformation.

One approach has been to use para-extension agents called "aide encadreurs" who have been given short-term extension training in limited areas such as the application of improved technical input packages. Although this is a slightly less expensive way to reach larger numbers of people, a lack of supervision and low motivation has meant that the aide-encadreur approach has been largely ineffective. A second, and hopefully more promising approach is that of utilizing motivated and experienced farmers as change agents through the vehicles of farmer couple training centers and self-managed cooperatives.

Cooperative development in Niger has evolved from a system based on the Western European model of individual contributing shareholders to a better adapted African model based on village organization. Since 1975, the number of cooperative organizations has nearly doubled and their legal status has recently been established on a permanent basis. Some 59% of agricultural producers in over 7,000 village-level organizations are now represented by cooperatives. At the lowest level are found the Groupement Mutualiste Villageois (GMV), a village-based assembly organization open to all with elected leadership. Above this level, five to ten villages are grouped

into a cooperative with a cooperative assembly composed of GMV representatives, and, in turn, there may be regional cooperative groupings associated with particular cash crops such as groundnuts or cotton. A parastatal organization, the UNCC (Union Nigerienne de Credit et Cooperation), is responsible for cooperative development as well as training, and the supply of agricultural credit and inputs to the fledgling cooperative organizations.

Niger follows a policy of heavy subsidization of agricultural production inputs, particularly for fertilizers, but also for animal traction equipment and other farm machinery, for improved seeds and for pesticides. These subsidies have been financed through revenues from uranium mining and, to some extent, through foreign donor contributions. Although Niger's policy of transferring resources into the rural sector via this mechanism is well intentioned, it is not sustainable on a sufficiently large scale to have a significant impact, even if uranium revenues could be maintained at past high levels. As demand for agricultural inputs increases, the direct costs of subsidies will rise to such high levels that the GON will be forced to reexamine its subsidy policies. Another factor, however, which might affect the GON's ability in this area is the existence of phosphate deposits in the southwestern section of the country. Nigeria is interested in cooperating with Niger to exploit this resource, and a fertilizer plant in the country would mean not only increased foreign exchange revenues, but increased availability of fertilizer and reduced transport costs which could translate into reduced prices to farmers and to lower subsidy costs to the GON.

2. Livestock. Livestock is of major importance in Niger as a means of livelihood for 15% of the population, as a source of food, as a source of foreign exchange (14% of total earnings in 1979), and as a major contributor to the GDP (9.9% of total in 1979). The livestock industry in Niger is based primarily on the extensive

resources of grazing lands in the northern pastoral zone, an area of approximately 15-25 million ha., where varying distributions and amounts of rain require that development be carefully coordinated with fickle nature.

The combined effects of large livestock numbers, uneven animal distribution, undependable water, recurrent drought and a general lack of sound grazing management have resulted in a decline in forage production and a downward trend in range productivity over the years.

The major constraints to development of the livestock sector, as outlined by the GON Five Year Plan, include a poor statistical data base, a lack of research in certain critical areas, and vulnerability to renewed drought. To these, one could add poor animal nutrition, lack of social/technical solutions to herder problems, and an ill-equipped livestock service. On the positive side, the GON believes that the drought has increased the receptivity of herders to modern production systems and to use of conservation measures for pasture and water resources. The size of the livestock herd has been growing rapidly since the drought, and the herd has been free of major health problems. Present meat price levels and a highly competitive free market system provide adequate producer incentives.

The GON's long-term objective for the livestock sector is the production of meat to meet the demand for domestic consumption, and for export. This objective was achieved prior to the drought, but pre-drought production levels have not yet been fully regained. Owing to population growth and increasing per capita meat consumption, this goal is actually quite ambitious, and requires the restructuring of livestock production systems.

There is a very important relationship between the livestock sector and the deterioration (or conservation) of Niger's natural resource base. The GON is very sensitive to this issue, and is ensuring that decisions concerning the location of new water-

ing points for herders are made jointly by technical services concerned and by herders themselves. The GON is attempting to manage and monitor utilization of these water supply points, but this critical problem is not yet resolved and much remains to be done before a herd/pasture/water balance is achieved.

3. Energy. Wood supplies almost 90% of the total energy consumed in Niger. A limited amount of petroleum is burned in the urban zones for manufacturing, transportation and the generation of electrical power. Rural inhabitants, however, depend almost entirely on wood (supplemented by millet stalks, kerosene, and manure) for cooking, heating and charcoal production for village manufacturing. Wood is also in demand for home and farm construction and in the fabrication of crude furniture and hand implements.

The demands of a growing population which relies so heavily on this one fuel source have put a strain on the supply of wood. A study done by a University of Arizona natural resources planning team in 1977 placed current per capita wood consumption at an estimated 1.9 kg. per day. Given these consumption rates, no increase in wood regrowth rates, annual urban and rural population growth of 8 and 1.8% respectively, and estimates for the maximum present useable standing biomass of 22 million MT, the time required to deplete Niger's present wood resources is calculated at a maximum of 23 years.

The University of Arizona planning team further estimated that a manual laborer's family in Niamey already spends up to 25% of its income on firewood and charcoal. In 1978 the price of wood in Niamey had risen by 300% in two years due to urban migration in the years following the drought. Though the trend in wood prices has not continued at the same rate since then, the general upward trend does continue, and threatens to put the price of wood beyond the economic reach of many urban dwellers. Considering the extent of dependence on wood, failure to prepare for

shortages (or higher prices) could lead to significant detrimental impacts on the social and economic conditions of urban as well as rural inhabitants.

Positive steps are being taken, however, to improve the wood supply outlook. Work in this area includes projects to establish dryland and irrigated plantations (IBRD), village woodlots (IBRD, AID, CIDA), greenbelts, (FAC, CWS) and wooded wind-breaks (CARE). In addition, CWS is working to extend the use of wood-efficient stoves.

One possible alternative to the use of wood is solar energy. Niger's solar energy company, ONERSOL, continually tests solar energy technologies to replace wood for domestic cooking. However, all the prototypes tested so far, are costly, unwieldly and poorly adaptable to the culinary arts of Nigerien homemakers.

The second most important form of energy after wood is electricity produced from the burning of imported fossil fuels. The Five Year Plan reveals statistics which show that demand for electricity in Niger has grown at an annual rate of more than 10% over the past decade. Although the rate of increase of demand is expected to level off after this surge, Niger is pushing ambitious plans to expand its supply of electrical energy to a nascent manufacturing and service industry, production/processing businesses, and a mineral extraction sector. The Plan expressly intends to bring electrical energy to a greater percentage of Niger's general population.

Until recent years, diesel fuel was virtually the sole source of energy for Niger's industries. The industries were confined as a result of fuel transport problems to Niamey and the southern border town of Maradi and Zinder. Today, imported hydro-electrical power from the Kaindji Dam in Nigeria has helped Niger to diversity its industrial and agro production facilities to include Tillaberi, Malbaza and Birni N'Konni where electrical power supplies (or will supply) rice milling,

a cement factory and a 3,000 ha. inland crop irrigation project. In another instance of diversification, Niger's northern uranium industry and adjacent urban domestic electricity needs are to be met soon with locally mined coal burned at a generating plant near Agadez. Finally, the Kandadji Dam on the River Niger promises to provide electricity for the expanding economy in the west of Niger.

4. Physical Infrastructure. As a landlocked country with a vast physical area, the development of infrastructure - roads, railways and hydro-electric power sources - continues to be important to Niger. The GON's previous Three Year Development Plan (1976-1978) allocated highest priority to the execution of infrastructure projects. The development of a primary road network has received the most emphasis, and several major links, including the highway between Maradi and the frontier of Nigeria and the highway which links the uranium mining sites to Niger's export routes have been completed. The planned development and improvement of 2,000 km. of secondary roads was not fully realized under the Three Year Plan primarily because financing was not obtained from donors. Railway transportation and the Kandadji dam, Niger's most important and capital intensive water resource project, were noted but not scheduled for financing under the Three Year Plan.

In Niger's current Five Year Plan,priorities in infrastructural development have been given to several major areas;

- development of the secondary road network;
- constructionof the hydro-electric dam at Kandadji; and
- provision of water resources to urban and rural populations

Roads Niger's primary road network is fairly well-established. The Government has identified financing for those major road axes that remain, and has now turned its focus to the construction and improvement of those secondary and feeder roads serving agricultural development areas. The secondary roads program has as its objec-

tives the improvement of food supply, increasing marketing and trade and lower transport costs and prices. Other important objectives relate to the delivery of goods and services to isolated segments of the rural population and to the GON's overall strategy for lessening the impact of future drought.

Donors have assisted in financing the primary road network, but few have indicated an interest in financing secondary and feeder roads. The IBRD has proposed a program for financing approximately 1,000 km. of feeder roads over a four-year period, but the program has not proceeded in the timeframe which was originally envisaged. A major constraint Niger will face in the implementation of the secondary and feeder roads program relates to the human resource problem. The option of utilizing labor intensive techniques for road construction and maintenance is made difficult due to sparse population in many areas. The shortage of available labor is exacerbated by the competing demands for labor in Nigeria and in the expanding uranium mining industry. If, however, wages in a road construction/maintenance program were made competitive with those in other industries, in neighboring countries and in the cities, and if laborers were contacted before their dry season migrations, it might be possible to undertake labor-intensive roadbuilding programs.

The Kandadji Dam. The largest infrastructure project to be undertaken by the GON in the next five years is the construction of the Kandadji Dam. The dam is to be located on the Niger River approximately 190 km. upstream from Niamey and will increase irrigated agriculture and provide much of western Niger's electric power requirement. The cost of the dam is estimated to be 1 billion in 1980 dollars. The estimated cost for relocating infrastructure and the approximately 21,000 persons who will be displaced by the dam is $44 million. The GON estimates that 129,000 ha. of land are available for irrigated farming development in the valley which will be served by the Kandadji. The GON plans to develop the irrigated farming which the

dam will make possible at a rate of 3,900 ha. per year and to complete the area by 2020. Electricity provided by the dam will meet a large part of the demand in western Niger, reduce dependency upon electricity from Nigeria and substantially reduce the energy costs for the country as a whole.

Critical feasibility studies show that construction of the dam is an operation which has an attractive internal rate of return. However, the rate of return on agricultural development related to the dam is distinctly lower than that for electricity generation. The reports supports the GON's contention that construction of the Kandadji dam is necessary to increase the river flow available in low flow periods and to enable the development of irrigated areas which are a vital necessity if Niger is to improve its food sufficiency capability and lessen its vulnerability to drought.

Hydrological Infrastructure The GON is determined to deliver on the premise that Niger's entire population has the right to reasonable access to water. Given Niger's predominantly desertic land mass and the country's harnessable water resource limitations, the provision to accessible water resources to the majority of the populace will not be easy.

A program for the construction of village and pastoral water supplies receives high priority in the Five Year Plan. However, the prerequisite planning and water resource policies which will be required for rational water resource allocations become very complex, and execution will be difficult. Several GON ministries, many technical services and many donors are involved with the various types of water resource development projects currently underway in Niger. There is a need for improved planning and coordination of water resource development activities at the national, regional and local levels. The GON recognizes the necessity to develop institutions and structures for a competent and rational approach to water resources in conjunction with its agricultural development programming, and has indicated that this is an area in which donor support would be welcome.

IV. Strategy for Development

A. Host Country Commitment to Development/U.S. Interests

In recent years, Niger has made exceptional strides in development when compared to the Sahel and other African countries. Most notably, she has produced enough food to feed her growing population during the last two years and registered a surplus of 120,000 MT of food grains in 1980.

1. Commitment. Rapid growth in the mining sector, primarily uranium, has provided the resources, and a concerned, honest GON leadership the stability and guidance which has brought about the equitable use and application of these non-renewable resource revenues.

GON commitment is best demonstrated by its recognition of the need to develop its traditional sectors, continually identifying its constraints - trained human resources, low literacy rates, poor health and other developmental infrastructure and the allocation of its resources to the sectors it determines as key. The priority which the Government has accorded economic development, particularly in food self-sufficiency, has brought continued improvement in living standards. Revenues from mineral exploitation and foreign assistance have been almost completely devoted to the most pressing needs of the Nigerien people, with a heavy emphasis on those of the overwhelming rural population.

-- Equity. Evidence of the government's priority on development with equity is found in the allocation of its resources. Per capita government expenditures have risen from $13 to $70 annually over the period 1974-1980. Defense spending declined from 6.3% to 5.0% of government expenditures from 1978-1981 even though Niger is faced with a security threat. Between 1977 and 1980, education, health and other social service sectors received 30% of the uranium financed investment budget. The current year budget contains increases over 1980 of 29%, 13% and 13% respectively for education, health and rural development, these increases contained in a total budget which was only increased 12% over the last year. Prices paid farmers for millet and sorghum production (Niger's staple

foods) have almost tripled since 1975 from less than 15 CFAF /kg to the current CFAF 40. At the same time the government has instituted and maintained a uranium financed subsidy on all farm inputs, fertilizer currently being at the rate of about 65%-70%. These measures, along with the expansion of agriculture development projects and an increasingly effective grain price stabilization program, have contributed to increased production, higher incomes to small farmers, more stable basic food prices, and an increased standard of living for the vast rural population.

-- Responsible Collaboration. Niger's contribution to AID-assisted development projects has been outstanding. Of the nearly $6.0 million generated since 1973 through sales of P.L. 480 imports, more than one-half has been contributed directly to AID-supported Nigerien projects. In addition, Niger contributed 32% ($2.2 million) towards the life of project cost of the first phase of the Niamey Department Productivity Project and has agreed to contribute over 36% of the phase II cost, of which $5.6 million is in cash. Although the near term future outlook for the Niger economy, essentially uranium revenue, is not as bright, past performance indicates Niger's awareness and commitment to assuring a growing share of recurrent costs. Other donors have voiced similar experience in this critical area.

-- Other Aspects of GON Policy. The GON is attempting to spread the benefits of development as broadly as possible. Special programs in livestock and range management, well-drilling, veterinary posts, special schools and mobile health teams have been designed to reach the nomadic groups. Human and animal health programs for the nomads are considered among the best in the Sahel.

Access to higher educational opportunities is by strictly enforced competitive examination. Salaries of government officials are modest in spite of which the GON recently withdrew educational subsidies previously provided their children.

Instances of corruption are believed to be rare and when discovered are severely and quickly dealt with.

Niger's political structure remains authoritarian and the government rules by decree. President Kountche has stated that return to civilian rule is not desirable at this time and notes the disastrous nature of the experience with mismanagement and corruption under the previous regime. He points out that Niger's most important concern at this time must be development, and says that establishment of democratic systems requires time and experience which Niger cannot now afford. He expresses the view that western and eastern forms of civilian government have not worked in African settings where tribalism remains strong, educational standards low and escape from grinding poverty is the focus of national energy.

Kountche's approach is the creation of a development society which is broadly based and representative, and which allows participation at all levels in the decision-making process. While currently in the formulation stage, the scheme is based on the cooperative at the village level and provides access and participation by farmers, religious and traditional leaders, youth, student and women's groups, trade and labor unions as well as merchants and other businessmen. A national commission working through department level sub-commission has been appointed to draft a constitution for this institution and has until January 1981 to complete its work. In August the President announced that the sub-commission will serve immediately as local assemblies to advise local governors (prefets).

2. U.S. Interests. Niger is currently a member of the U.N. Security Council (through 1981), vice chairman of the non-aligned movement and recently re-elected as a vice chairman in the Islamic Conference. Niger has been supportive of U.S. concerns, most notably on the questions of the hostages in Iran, and the Soviet invasion of Afghanistan. Niger, the country, is regarded by constantly enlarging circle of its neighbors as progressive, stable, honest and industrious. Kountche, the man, enjoys the respect and admiration of his African peers and countrymen, cutting across regional and tribal lines. His constant travel to the interior of Niger and his frank public assessment of weaknesses in the government whenever and wherever he finds them have gained him (and his goverment leaders) a respect and support hard to match in other parts of Africa today.

U.S. economic interests, while modest, can become significant in the near future. U.S. investment will be at least $350 million by the mid to late eighties when a uranium mine which includes an American partner opens. American interests could be even larger following the opening of two additional mines and the acceleration of public investments offering opportunities to American exporters. The construction of the Kandadji Dam and the attendant irrigated agriculture activities could also attract U.S. loans and private sector investment.

Thus, U.S. interest in Niger can be summarized as:

- continuing Niger's cooperation in international forums;
- mineral resources and their peaceful use;
- preservation of a moderate, programatic, generally western oriented government;
- an expanding market for U.S. exports;
- support to a government making economic progress and exhibiting sound management of its own and external assistance resources, including those of the U.S.

B. AID Assistance Strategy

1. Objectives. Niger has defined its three long-term development objectives as (1) food self-sufficiency; (2) installation of a "development society"; and (3) economic independence. Food self-sufficiency is defined, in the medium term, as a level of food production which will satisfy the needs of the population and, in the long-term, as the establishment of an equilibrium between food supply and demand that includes provison for years of poor climatic conditions and food production. The goal of creating a "Development Society" calls for the establishment of a society founded on active participation by the entire population in the development process. Economic independence is defined as Niger's ability to control and direct her own development, lessen her financial and technological dependence on external assistance, and achieve long-term self-reliance while recognizing the need for interdependence within the international economy. These broad goals of the GON are compatible with AID development policy and they constitute the general framework for AID assistance goals in Niger.

Both the GON and AID are participating within the CILSS/Club du Sahel framework which seeks to address development concerns in the Sahel countries in a regional context. Sahelian member states and donors have agreed to a collaborative strategy and planning process which focuses on agricultural productivity and self-sustaining development. U.S. economic assistance to the Sahel countries and the funding mechanism for AID's participation in the CILSS/Club framework is legislatively provided through that part of the U.S. Foreign Assistance Act known as the Sahel Development Program. AID assistance to Niger also encompasses those broad objectives of the CILSS/Club framework and the Sahel Development Program.

Another goal of AID assistance in Niger is to build upon the bilateral political and economic interests which Niger and the United States share, and to explore those opportunities which may be created for increased American participation and investment in Niger's economic growth.

Other factors which influence the AID assistance program in Niger are: policies which focus assistance efforts on the basic human needs of rural populations; the necessity to allocate scarce resources to those sectors and programs which will sustain and generate development growth; and the desire to utilize AID assistance where it will have maximum impact and not duplicate other donor efforts.

The aforementioned factors which provide direction to the AID long-term objectives in Niger must be considered in conjunction with those constraints which inhibit full-scale movement towards goal achievement. A limited training manpower base, inefficient administration, and inappropriate technological delivery systems are obstacles to development in Niger which require priority attention.

2. Strategy

The USAID strategy over the next five years continues its focus on the national level institutions which will become the nuclei required to support the delivery of services required at the local levels. Coupled with this thrust are several direct impact projects which both apply and test the product of "CORE" projects. Emphasis is on five basic areas: Rainfed Agriculture, Livestock and Range Management, Human Resources Development, Rural Health and the Ecology. The target group remains the rural population engaged in basic food production activities. Long-term goals include the development improvement of human resources through training, better health, support services and greater availability of agricultural inputs, all within an improved and balanced physical environment.

The AID program strategy consists of six "CORE" projects in the five areas of emphasis mentioned above: Agriculture Production Support (APS) and Cereals Research (NCR); Niamey Department Development (NDD); Niger Range and Livestock (NRL); Rural Sector Human Resources Development (RSHRD) and Sahel Manpower Development; Rural Health Improvement (RHIP); Forestry and Land Use Planning (FLUP). These projects are supported by several "SUPPORT" projects which complement and/or strengthen one or more of the CORE group. Literacy Training and the Maternal Language Text AIP while supportive of each other, feed into and reinforce cooperative strengthening components of the APS, NDD, NRL projects, and play an important role in the curriculum of RSHRD and RHIP village health team training. The Tapis Vert OPG carries out applied research in agriculture production avoiding the use of imported inputs which will assist both NDD and NCR. The CDARMA (farm tool implement production) supports the NDD directly as well as APS and NCR. Thus, the USAID strategy is targeted at the constraints identified in the key development sectors; avoids areas where other donor activity is judged sufficient (e.g., grain storage); concentrates on projects which are related and mutually reinforcing as well as supportive of AID and other donor projects and activities in a sector, e.g., the seed component of APS supports all productivity projects regardless of donor.

The USAID program is based on a strategy whose development began in 1975 and is subsequently reinforced by the execution of first phase projects. These projects, which were designed as long-term (10-15 years) efforts are moving into their second phases or have been implemented as planning/testing projects preliminary to full scale implementation. Experience in the NDD project, for example, has shown that the Couples Training Center (CPT) concept is a viable complement to agriculture extension services where trained extension agents

are not available in the numbers required. Trainees have registered impressive crop yield increases by following the technical training received at the Centers -- especially when some material and technical support is available to them following their training. Thus, Phase II of the project is placing more emphasis on the CPT component; and, Phase II of the Cereals project is being designed to improve the institutional capability to deliver that support.

Thus, the AID long term strategy of combined institutional building at the national level coupled with and based on experience gained through implementation of operational interventions is proving to be a sound and productive model which the Mission intends to continue.

- Agricultural Production. AID's strategy over the next five years will focus on three previously defined major constraints in the agricultural sector: decreasing soil fertility, the lack of training manpower, and weak infrastructural systems for the delivery of agricultural inputs and technologies. Almost all of the projects in the present and planned AID project portfolio address one or more of these constraints.

The problem of declining fertility will be addressed by continuing efforts to increase yields by the development, distribution and usage of improved seed varieties. Increased use of chemical and organic fertilizers will be encouraged along with widespread application of soil conservation techniques. Agricultural inputs will be distributed through an AID-supported cooperative system which will be concerned with each of these production and conservation factors. The

Niger Cereals Research project will support the efforts of INRAN to conduct agronomic research based on the soil and climatic pecularities of Niger's cropping areas, and will develop sound technical packages for application within every region of Niger's agricultural zone. Through this and related projects, the GON goal is to insure that improved seeds are available to every farmer in Niger. The Forestry and Land-Use Planning Project will assist in providing long-term solutions to the problem of soil deterioration in Niger, and will take the first steps toward developing a plan of action which can be used by Niger's communities to help protect soils, water and natural vegetation on a comprehensive, regional basis.

The lack of training manpower to plan, manage and implement agricultural production programs prevails at all levels of Niger's development services, from the national service direction to the village level agent. USAID/Niger has initiated, or is planning, a broad range of training programs in the context of the Agriculture Production Support, Cereals Research, Rural Sector Human Resources, Niamey Department Development and Support to the Literacy Service projects. The training components of these projects are based on those manpower deficiencies that exist in specific government services or development activities. At the same time, it has become obvious that the GON does not know how many and what kinds of agricultural personnel will be required to undertake current and future development activities in the sector. USAID/Niger proposes to assist the GON in undertaking an agricultural manpower survey which will serve as the basis for establishing quantitative and qualitative manpower targets for agricultural development programs in Niger.

Regional productivity projects were conceived by the GON to mobilize adequate resources to improve the efficiency of the traditional production systems and to create the local level organizational infrastructure necessary to support these systems. This approach requires an initial period of intensive investment within a limited grographic setting. After the initial changes are introduced and accepted within one area, with the necessary local support systems (cooperative and extension services) developed, the productivity project can begin moving out of that particular area and into new zones. Productivity projects have had significant positive impact in Niger's rural sector. The strategy assumes, however, that national support systems exist which can continue the essential support activities in former project zones that heretofore were provided by the productivity project. USAID/Niger believes, though, that for the medium-term future, developing a national support system for the existing productivity projects is of higher priority than expanding the area presently covered by productivity projects. Failure to develop such national level support systems will prolong the necessity of having a high level of donor involvement associated with regional development programs and may create burdensome government structures at the department levels which could be more efficiently developed at the national level (i.e. certain training institutions, input procurement and distribution facilities). The Agricultural Production Support project, the backbone of AID's medium-term sector strategy, will support systems (credit, ag inputs, training) at the national level which will reinforce and backstop technical service activities at regional and local levels. The AID goal in this area is to ensure that systems which exist to provide credit, material inputs and training to farmers do, in fact, function. The Niamey Department Development project will provide regional and village level

experience which will serve to provide feedback and direction in the AID effort to assist national level support systems.

- Irrigation The GON effort to achieve food self-sufficiency is futile without intensive development of irrigated agriculture. Rainfall levels in Niger are too low and too erratic for total dependence on rain-fed agricultural production. The GON recognizes and affirms this fact in its near-term goals for irrigated agriculture which are: (1) to develop a hedge against drought; (2) to cover the deficits between cereals needs and dryland cereals production; and (3) to improve cultivation practices on existing irrigation schemes and draw on the lessons learned when preparing future schemes.

Over the CDSS period, the approach to water resource development programs will primarily consist of two levels of effort:
1) USAID/Niger will serve as a focal point and coordinator for AID assistance to the Niger Basin Authority (NBA) multidonor program for development of the Niger River Basin. AID support to the NBA will include provision of technical services from the U.S. Corps of Engineers to design a program in river systems analysis. Particular attention in the analysis will be given to food production needs and implications for the development of irrigated agricultural schemes. AID will also pursue, in conjunction with the NBA and other donors, areas of assistance to the Kandadji dam project. 2) USAID/Niger will also undertake bilateral efforts in the water resources field which will include a village hydrology activity and the financing of small to medium scale, high impact irrigation activities.

AID's coordination role with the NBA will ensure that regional concerns are addressed by member states, donors and planners while assuring, at the same time, that Niger's water resource development efforts are not independent

from those of the other countries through which the river travels. Particular emphasis will be given to assuring coordination between the NBA and the GON's High Commission for the Construction of the Kandadji Dam.

Bilateral water resources assistance will emphasize institutional support at the national level and farmer participation and management of project infrastructure at the village level. A logical first step in this strategy is planned support to the GON's recently established National Office for Hydro-Agricultural Development (ONAHA). ONAHA is a parastatal agency under the Ministry of Rural Development which is responsible for planning, construction and major maintenance of irrigated perimeters. It works closely with the national cooperative service responsible for the complementary organization of farmer cooperatives.

Water resource projects will be most attractive to AID when they are implemented in conjunction with relatively high levels of GON investment capital. The GON has accepted this approach and has given a high priority to investment allocations for irrigated agricultural projects. AID will seek opportunities to develop participation of U.S. engineering, management and construction firms in water resource activities.

- Livestock Development AID's experience has already shown that training and human resource development are an essential component of any livestock development program in Niger. Progress in the sector depends on active communication with herders, and on their acceptance of the methods and organizational structures necessary to conserve the pastoral soils and vegetation. Traditional relationships and interactions between herders and sedentary farmers must be understood and systematically exploited to maximize benefits for

for both groups. Information dissemination programs must be devised to reach herders throughout the vast pastoral zone with information on weather, forage conditions, markets and availability of animal health services.

AID strategy in the livestock sector during the 1983-87 period will be to assist the GON to develop initiatives which will help organize and educate herders to implement recommended range management techniques, stress protection and enhancement of the rangeland and improve livestock reproduction and marketing mechanisms. The on-going Niger Range and Livestock (NRL) project is expected to generate much data which is essential to determining the most appropriate and effective methods for accomplishing these objectives. A joint GON/AID technical evaluation of NRL-generated data, studies and recommendations is planned in 1981. The evaluation and synthesis of the NRL research activities will determine the specifics of a planned Phase II livestock program to be financed by AID.

Future AID activities will place primary emphasis on expanded organizational and educational activities among herders. The objective will be to create greater opportunities for herders to participate in the decision-making processes which affect them. This will be accomplished by organization of herder cooperatives which will serve as local support organizations involved in marketing animal health services, distribution of veterinary inputs and credit. AID's goal will be the establishment of the cooperatives and their efficient, effective supply of cooperative services. Other elements of the AID program will include the construction of catchment basins and vaccination chutes along with training and technical assistance support to the GON livestock service.

- Health The GON policy of emphasizing more equitable access to health services, particularly in rural areas, is generally sound in orientation. It reflects a commitment to the broad distribution of services at available revenue and human resource levels. The basic long-term goal is to provide preventative health care services to the entire population by the year 2000. The primary health care strategy is based upon the use of village health workers as primary agents for health care delivery. The AID and other donor supported national-level Rural Health Improvement Project (RHIP), under the Ministry of Health and Social Affairs, is the GON vehicle for implementation of the health care delivery system. Today, approximately 2225 of Niger's approximately 8,750 villages have health teams. The RHIP has a project goal of 3,500 villages with health teams by the end of the project. The GON has established targets of 4000 villages by the end of the current Fiver Year Plan and all villages by the year 2000.

AID's strategy in Niger is: a) to strengthen various components of the health system; and b) to expand the geographic coverage and the population served by the health system. Through continued support to the RHIP, AID will emphasize management planning and administration, training and retraining, along with technical assistance for strengthening of the institutional support system.

Experience with the RHIP has demonstrated that the Ministry of Health (MOH) has a critical shortage of administrative personnel capable of managing a nationwide health delivery system. One reason is that, heretofore, only medical doctors were considered for major responsibilities in the MOH. AID will encourage and support the use of trained administrators for management of certain aspects of public health activities.

AID will continue to support training of health professionals and para-professionals at all levels (national, department, arrondissement, village),

and will provide resources needed to link various levels of the system together for logistical, supervisory and service efficiency. Continued support to the RHIP is envisaged after the project's current completion date in 1983. The second phase of the project would expand the health program into villages not touched by the first phase.

- Population Rapid population growth and a shifting demographic situation have heightened GON concerns as to its ability to effeetively administer and provide services to Niger's populace. Government officials are awakening to the fact that there are explicit linkages between population growth and development programs. However, the GON has no stated population policy or strategy.

AID strategy is to continue and intensify efforts to sensitize GON policy-makers at all levels to the developmental implications of the population problem. AID will encourage the GON to utilize those AID resources which are available to governments for research and analysis of demographic and population factors. Efforts will be made to furnish GON policy-makers with information from policy development tools such as the RAPID analysis and to encourage their approval of studies to demonstrate the determinants and consequences of rapid population growth in Niger. An objective of continued sensitization efforts with GON policy-makers will be to convince the government of the need to develop a national population policy or a strategy for approaching population problems.

When the GON acknowledges the need for a strategy to check population growth, AID can utilize institutions which are supported by several of its ongoing agricultural and rural development activities, i.e. cooperatives, farm couple training centers and literacy service activities to disseminate

family health information and, possibly, services. AID also plans to incorporate family health activities into Phase II of the Rural Health Improvement project. There are indications that the GON Ministry of Health will support the inclusion of these activities under the project on a low profile basis. In the short-term, AID will continue to encourage GON policy-makers and technicians to attend agency-sponsored training courses and seminars designed to spark awareness of population problems.

- Natural Resource Protection The deterioration of Niger's natural resource base can be arrested and reversed by the GON only with an intensive and effective program of planning and management of current and future activities along with available internal and external resources which impact upon the physical environment. The GON's long-term strategy for basic resource planning is the integration of farmers, herders and urban dwellers into a multi-purpose, essentially agricultural, economy that conserves resources for future generations while it generates better living standards for everyone. Broad AID objectives are twofold: 1) To assist the GON to address the long-term problem of natural resource deterioration; and 2) to assist the GON in developing a comprehensive approach to rational land-use resource conservation. AID's primary, near-term objective is the development of a national land-use and resource conservation plan.

The AID strategy is to assist the GON Water and Forests Service to establish an analytical and planning capability which encompasses Niger's natural resources: soil, water, natural vegetation and wildlife. Through the AID supported Forestry and Land-Use Planning (FLUP) project,the GON Water and Forests Service is developing an institutional framework through which basic

data is developed, guidelines formulated and priorities established for the effective conservation, protection and management of Niger's natural resources. An important element of the FLUP project is the development by the GON of a 20 year national natural resource plan which will be structured to address the existing inventory of natural resources. The project has also created a central planning unit within the GON which will serve as a "Soils Conservation Service" and engage in long-term planning and technical monitoring of conservation related projects. In principle, the plan will form the basis for new or amended laws and decrees necessary to carry out governmental deteriminations as articulated through the plan. It will provide a definitive basis for utilization of domestic resources and the basis for requesting donor assistance. The plan is scheduled for completion in 1984. AID activities after that date will be determined in accordance with the plan. Additional assistance will be provided to the GON for pilot activities and model sites in testing production as well as conservation effectiveness in: firewood production, forage production, secondary forest products, nursery management vegetation and revegetation, fire management, planting of acacia albida, windbreaks, seed stabilization, strip-cropping, terracing, channel and gulley control, small dams and retention basins, rainfall harvesting, micro catchments, and watershed development.

Other existing or planned AID assisted projects will have natural resource conservation components linked to the activities of the Water and Forests Service. Natural resource protection activities will be coordinated with the Peace Corps, PVOs and other donors.

Training in resource management and protection will receive priority in AID-sponsored training programs. A special effort will be made to build up staff capability in the Water and Forests Service, and extension education will be

emphasized. Through extension services and literacy training, AID will contribute to GON efforts to increase public awareness of and sensitivity to Niger's natural resource problems.

- Human Resources Development Niger needs a nucleus of training personnel to serve as a base around which other personnel can be developed to serve in every sector and at all levels. As Niger's economic base broadens, the manpower constraint becomes more critical. This is partly due to the fact that private sector expansion in mining and services has created competition for skilled and semi-skilled personnel. AID's human resource development efforts in Niger will be directed toward achieving training self-sufficiency at both the national and local levels in AID priority sectors.

At the national level, general training priorities will be in public administration, planning and evaluation, research, systems management, finance and accounting.

At the regional and village levels priority will be given to training of low and mid-level cadre in the rural development and health delivery sectors. The human resource development strategy is directed at generating a multiplier effect in the extension of basic knowledge and technical concepts among rural populations. Trained cadre will provide extension and outreach services to others of their milieu. Local level skills training will include agricultural technology, cooperative organization, literacy, health and nutrition.

Training is an important and integral part of each AID project in Niger, and the GON has developed an increasing appreciation for the quality of AID-sponsored training and its impact upon institutional effectiveness. Training aspects of AID programs range from long-term academic and third-country

training for management and technical personnel, to local training for farm family husband/wife teams in improved agricultural techniques. Short-term organizational and technical training is also provided for cooperative managers and members.

Priority attention will continue to be given to the necessity for ensuring that women are fully integrated in all AID/GON development activities. The effort to strengthen Niger's human resource base requires that special attention be given to creating training opportunities for women, and that AID programs serve to sensitize the GON to the need for greater participation of women in the development process.

Further analysis is required over the CDSS planning period to pinpoint overall manpower requirements in the agricultural and education sectors.

Complementary Program Activities. AID will continue to support and encourage rural development initiatives of U.S. private voluntary agencies (PVOs) in Niger. There are not many US PVOs in Niger (AFRICARE, CARE, CWS, and CRS) and their programs are generally small-scale, however there is a need for the village-level community development oriented activities which these organizations are involved in. Program opportunities with PVOs will be supported to develop village level pilot and small-scale activities in natural resource conservation, alternative forms of energy and innovative appropriate technologies.

Increased joint planning and project collaboration between AID and Peace Corps (PC) will more fully integrate the activities of two U.S. agencies which share some similar development goals. A joint PC/AID planning initiative for forestry projects is a good example of integrated efforts to come.

Future undertakings with other donors include the construction of an

animal traction equipment and manufacturing center (CDARMA) in Niamey. This project will be coordinated and executed through the local UNDP program. The CDARMA project will serve to alleviate agricultural equipment and supply constraints to local farmers. The project has three attractive features for AID. It offers: (a) a first step with the GON in development of the agro-industrial sub-sector; (b) an opportunity to assist in an employment generation activity and (c) and a possible opportunity for future U.S. supply of equipment and materials. CILSS/CEAO have proposed that AID participate in a program of rural village hydrology in Niger. These activities will be considered for AID financing to the extent that they address AID/GON objectives and strategy and that funds are available.

PL 480: AID does not envisage the need for direct PL 480 food programs in Niger over the CDSS period. Food contributions to Niger's grain reserve storage program can be met through the World Food Program (WFP) and other donor assistance. The WFP has advised USAID/Niger of its intent to request up to 10,000 tons of U.S. Title II sorghum, and possibly vegetable oil, for a rural development project in Niger that includes price stabilization, food-for-work and food-for-training components. USAID/Niger will advise AID/W as the WFP project develops.

C. Proposed Assistance Planning Levels (PAPL)

Table IV below illustrates the divisions of funding allocations between sectors which the mission believes appropriate given Indicative Planning Levels provided by AID/W.

Table IV PROPOSED ASSISTANCE PLANNING LEVELS

Categories	Fiscal Years ($'000) 83	84	85	86	87	Total
Agriculture	10,000	10,000	11,000	13,000	12,000	56,000
Research	(1,000)	(1,000)	(2,000)*	(1,000)	(2,000)	(7,000)
Production Spt.	(3,000)	(3,000)	(6,000)*	(5,000)	(3,000)	(20,000)
Integrated Dev.	(3,000)	(3,000)	(2,000)*	(4,000)	(4,000)	(16,000)
Irrigation	(3,000)*	(3,000)	(1,000)	(3,000)	(3,000)	(13,000)
Livestock & Range Mgt.	2,000	2,000	2,000	2,000	2,000	10,000
Forestry/Ecology	1,275*	2,000	3,000	3,000	3,000	12,275
Human Resources	2,500*	3,000	3,000	3,000	4,000	15,500
Health/Population	3,500	4,000	4,000	4,000	4,000	19,500
Rural Health	(3,000)*	(3,000)	(3,000)	(3,000)	(2,000)	(14,000)
Population	(500)	(1,000)	(1,000)	(1,000)	(2,000)	(5,500)
Infrastructure	6,000	6,000	15,000	17,000	17,000	61,000
Rural Roads	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(25,000)
Dams	-	-	(9,000)	(11,000)	(11,000)	(31,000)
Village Water	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(5,000)
Volags.	1,000	1,000	1,000	1,000	1,000	5,000
Total SDP	26,275	28,000	39,000	43,000	43,000	179,275
PL 480 (Metric Tons)	10	-	10	-	10	30
Title II	(0)	-	-	-	-	(0)
Title II (Volag)	(10)	-	(10)	-	(10)	(30)

*Approved projects or projects at approval stage in FY 1981

Of the total assistance proposed for the FY 1983-87 period, about $33.8 million (18.9%) is committed to funding of already approved projects or phase II projects which are expected to be approved during FY 1981. Another $15 million (8.4%) is for projects which are expected to be approved for initial funding in FY 1982. Reference to all of the projects covered by the above portions of the PAPL (total 27.3%) can be found in the FY 1982 Congressional Presentation. Another $59 million (32.9%) of the proposed five year funding allocation is set aside for yet unidentified follow-on projects in high priority areas in which the current AID program is focused. This funding will go into projects in the areas of human resource development, agriculture production support, rural health and forestry/soil conservation. Of the remaining amount, about $20.5 million (11.4%) is for proposed new activities in irrigated agriculture, population and sanitary village water supply. Another $51 million (28.4) is planned for major physical infrastructure programs in support of programs like the proposed Kandadji Dam Project and efforts to extend the rural feeder roads network. Should there be reduction in the amounts of funding available for Niger programs, priority funding would go to projects falling within the current mission program areas, or, as GON policy permits, to population activities. Subsequent priorities would be for work in irrigated agriculture, sanitary village water supply, or large infrastructure projects. Choices would be determined by factors wuch as effect upon goal achievement, spread effect, absorptive capacity and program efficiency (i.e. AID manpower requirements, degree of U.S. technical advantage, U.S. institutional interests, etc.)

AID/Niger believes that the program proposed here can be carried out with prudent use of personnel and minimal increases in mission staffing levels. An additional project manager and a program economist will be required along with some realignment of positions within the mission. This may require increased involvement in multidonor activities in which other donors play a primary role in project administration, and it will require liberal access to contract technicians. There is no substitute for professional, experienced, daily technical backstopping of projects. Though some PVOs and some Title XII institutions might qualify to fulfill the technical execution and administrative backstopping/directional functions of AID technicians, few do. Peace Corps volunteers alone also cannot fulfill these functions though they can give technicians added reach and influence. Though certain management efficiencies can be achieved, as in AID/Niger's Project Management Support Unit which combines procurement, administrative and technical backstopping for all projects under one roof, there are limits to management by extension. The solution is host country self-development, and we look forward to the day when Niger attains that level. However, until the host country is able to administer AID grants without AID help, there will be no substitute for professional technical backstopping and supervision.

ANNEX A

DESCRIPTION AND BRIEF ANALYSIS OF THE GON FIVE YEAR PLAN (1979-83)

Annex A

Description and Brief Analysis of the GON Five Year Plan (1979-83)

I. The GON Plan for Development

The 1979-83 GON Five Year Development Plan, issued in April 1980, identifies three major constraints to Nigerien development, i.e.,

- declining soil fertility and inadequate agricultural technologies
- an inadequate supply of trained manpower, and
- traditional attitudes which are unreceptive to new forms of socio-economic organization.

The long-term goals of the Five Year Plan are:

1. Attainment of Food Self Sufficiency

This goal is defined as adequate production of cereals to meet consumption demands and to permit establishment of adequate reserve stocks during years of good harvest to meet deficits in years of poor harvest.

1. Establishment of a "Development Society".

The GON defines the Development Society as a participatory economic and social development program based on Nigerien social, political and cultural values and designed exclusively for Niger and its people. The supporting structure for this concept is now being defined through consultation with the major groupings of Nigerien society, particularly the rural population.

3. Achievement of economic independence

Economic independence is defined as control over the country's development and decreased economic, financial and technological dependence on other countries.

The broad strategies identified in the plan are, in order of priority:

1. Modernization of agricultural and livestock production systems;

2. Intensive investment in selected sectors such as mines and industry, which have the potential for rapid growth and which can generate capital for longer term development objectives;

3. Investment in economic and social infrastructure necessary to guarantee that future long term development occurs unimpeded; and

4. Investment in improved access to social services, health, housing and potable water supply.

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Specific strategy objectives under the Plan are divided by sectors, as follows:

The Rural Sectors

Agriculture

The Plan emphasizes rainfed agriculture and provides for a minimum annual cereal production increase equal to the population growth rate. Irrigated riziculture is expected to expand by 1,000 hectares annually to meet any cereals deficits. Cooperatives are to be given exclusive rights to primary level agricultural commodity purchases.

Agriculture receives 16.9% of the planned public investment under the plan and this amount is divided about equally between the rainfed and irrigated subsectors, Research receives about 6% of the total and will focus on adaptation of improved cereals varieties to regional soil and climatic conditions.

Livestock

The goal is to meet domestic demand for meat and to export livestock products. The strategy involves reconstitution of drought-reduced herds and zonal specialization for different stages in the livestock production, fattening and marketing process. The livestock sector receives 4.9% of planned public investment, but this amount is augmented by additional investments under the water supply infrastructure program.

Forestry

Under the Plan, 1.1% of the total public investment goes to forestry/conservation programs. Goals are to increase firewood production, restore and protect soils, and protect fauna in limited reserves. Since conservation targets exceed the capability of technical services and since conservation needs are perceived as urgent, the strategy is to mobilize the population, particularly youth, for mass, village-level action programs. Priority will go to areas where ecological deterioration is most advanced.

The "Rapid Growth" Sectors

The long-term goal for the mining sector is to support development in other sectors. A key element in the GON development strategy is the transfer of revenues from the mining to the rural sectors. This is accomplished primarily through use of uranium-generated funds for rural development projects and farm input subsidies.

The Plan earmarks the bulk of public investment in the mining sector and almost all private investment for new uranium production and processing plants. The sector receives about 10.3% of total public investment, but receipts from the mining sector chanelled back into the development program through the Fonds National d'Investissement (FNI), are projected to be about 40% of total public investment funds.

Industry

The long-term goal for the industrial sector is to create an industrial base to assure long-term economic independence, and to diversify the economy and reduce dependence on agriculture and mining. Broad policies for the Plan period seek to decentralize industry, to give priority to agricultural transformation, import substitution and export industries, and to favor labor-intensive technologies in order to generate employment. Private capital is expected to finance 60% of the industrial investment under the Plan. About 3.6% of total public investment is slated for this sector.

Energy

The long-term goal for the energy sector is to develop local energy resources and to improve the living standards of the population. Priorities call for development of local coal-based, solar, wind and hydro-electric energy; intensification of petroleum prospection to establish reserve stocks; and promotion of urban and rural electrification schemes. The energy sector will receive 4.3% of public and 10% of total investment. About 87% of the total energy investment is earmarked for initial construction of the Kandadji Dam and for construction of a coal-based power complex which will supply the uranium mines and the Agadez region with electricity beginning in 1981.

The "Accompanying" Sectors

Commerce

Investments in the commercial sector focus principally on reinforcement of the major parastatal marketing organizations and on ensuring a secure and reasonably priced supply of essential products throughout the country. Commerce, including tourism, is allocated 3.6% of public investment.

Transport and Communications

Road construction absorbs two thirds of investment in transport and communications infrastructure. The Plan asserts that the primary road network is fairly well developed, and that emphasis during the Plan period should be on developing secondary and rural roads and on road maintenance works.

The Plan proposes closer regulation of road transportation, start of construction for the Parakou-Niamey rail link, and actions to develop river and maritime transportation over the long-term. The roads, transport and communications sector receives a 17.6% allocation of public investment.

Administration

The Plan urges administrative reforms to improve the efficiency and responsiveness of public services, and allocates 6.8% of public investment for construction of administrative infrastructure.

Human Resource Development

Education

The long-term goals for education are to provide universal, relevant, basic education; to train adequate cadres at higher levels to meet national development needs; and to promote research. The Plan's targets for primary education are to increase the enrollment rate from 18 to 25%, which requires construction of 2,600 new classrooms. The goal for secondary level education is to improve the pass rate from primary to secondary school - increasing first-cycle secondary enrollments by 259% between 1979 and 1983. The quality of education will be up-graded through improved teacher-training, supervision and physical facilities. Finally, the Plan proposes to introduce instruction in maternal languages during the first two years of primary schooling, and to introduce practical and technical subjects into both primary and secondary curricula. Education receives 11.5% of public investment, of which secondary education receives 44%, higher education 28% and primary education 19%. Literacy programs will receive about 1.6% of total investment in the sector.

Health

The health strategy in the Plan is to promote universal, mobile, preventive health services. The emphasis is on expanding village-level health coverage through village health teams, rural dispensaries and medical centers, mobile medical teams and improved regional distribution of health personnel. The health sector will receive 4.9% of planned public investment, of which 50% is targeted for health facilities in rural areas.

Housing and Urban Development

The Plan calls for a far-sighted approach to urban planning, safe housing and a healthy environment for all Nigeriens. The strategy is to strengthen and reorganize administrative structures, to prepare urban development plans, and to study the use of local construction materials and low-cost housing options. The Plan allocates 2.4% of public investment to urban

development and housing, chiefly for sanitation works in the major cities.

Village and Pastoral Water Supply

A major water supply system construction program will seek to improve access to water for human, pastoral, agricultural and industrial use and to develop hydro-electric, irrigation and navigation potential. The Plan allocates 5.4% of public investment to village and pastoral water-supply programs.

Regional Development

A specific section of the Plan examines development policies and programs from a regional perspective. The broad objectives of the Plan in this respect are to develop complementarities for the productive sectors, to reduce inter and intra-regional disparities in the distribution of social infrastructure, and to promote integrated, equitable regional development through investments in economic infrastructure.

II. Assessment/Analysis of the GON Five Year Plan

The agricultural sector development strategy addresses the constraints of low per capita productivity and declining soil fertility through introduction of new production techniques, soil restoration and conservation activities, increased emphasis on mixed farming, and intensive development of irrigated agriculture. The Plan identifies disintegrating traditional social structures and consequent sociological/attitudinal problems as the major constraints to rural development. The Plan stresses decentralized and regionalized planning and development programs (regional productivity projects), and notes that much trained manpower will be required to increase the rural population's awareness of development needs. Training of professional civil servants is to increase in order to strengthen the capacity to deal with these problems, and, over time, to reduce reliance on expatriate technical assistance. A basic goal of the Plan is to increase the percentage of school age children actually in school from 18 to 25%, and the percentage of students finishing primary school who continue to secondary school from 37 to 48%.

The Plan allocates over 22 percent of public investment to social development activities (health, education and training). Health care and education are emphasized as basic human needs and are key elements in the development of the nation. The health sector emphasizes expansion of basic and preventive health programs and national village potable water supplies.

Investments in the industrial sector go to mining and agro-industrial activities, and are meant to create profits to sustain long-term development of the rural sector.

The creation of a development-oriented society retains a high priority in the Plan. Its emphasis is expanded to include not only the satisfaction of basic human needs but also participation by all citizens in the process. A special national commission made up of representatives of most of the public interest groups has been formed and mandated to define institutional and organizational structures and processes to realize the objective of greater participation and self-management in development activities.

Though the Plan links projected increases in food grain production to population growth, the emphasis of the Plan remains on boosting food grain production rather than attempting to ease the population growth rate. Similarly, government investments in the health sector emphasize improving the health of mothers and children rather than family planning.

The development program outlined in the Five Year Plan is based on several optimistic assumptions which could affect goal achievement. These are: favorable weather conditions, adequate and appropriate training programs to keep pace with manpower needs (or alternative service/information dissemination techniques), and expected increases in public resources from the mining sector. As noted in other sections of the CDSS, the last two assumptions have already proven overly optimistic since training needs are not being met and uranium revenues have fallen and are expected to remain at reduced levels for the immediate future.

The question of how and by whom the Plan is financed is particularly crucial to goal achievement. The GON originally anticipated that FNI financing would amount to CFAF 155.6 billion ($734 million) or 40.5% of public investment during the five year period, while foreign assistance (CFAF 160.6 billion/ $752 million) and commercial borrowing (CFAF 68.3 billion/$320 million) would amount to 59.5% of the total. Lower than anticipated resources available to the FNI (the main vehicle for Niger's investment effort) will therefore have direct implications for the level of GON contributions. If the GON maintains the original Plan investment levels and targets, increased external resources will be necessary. President Kountche has already stated his commitment to reaching Plan targets even if this implies recourse to more commercial loans. This could add to a potentially serious external debt situation.

In addition to public investment, the Plan includes CFAF 342 billion ($1.607 billion) of private and semi-public investment,the bulk of which is allocated to the mining sector. Declining world demand for uranium and a downward trend of prices has already resulted in the postponement of further mine openings in Niger. It is anticipated therefore that there will be a substantial shortfall in private and semi-public investment in the mining sector as well as in other related sectors such as energy, construction and transportation.

ANNEX B

DONOR ASSISTANCE TO NIGER

Annex B

Donor Activities. The major portion of economic and technical assistance provided to Niger since 1975 has been in the areas of basic infrastructure, rural development, agriculture, human resources, natural resources and industry, including tourism. The table below shows Official Development Assistance (ODA) to Niger by major donors during the years 1975-78 and 1979, and indicates the principal areas of donor support.

Donor	Amounts Actually Committed ($000) 1975-78	1979	% of Total ODA 1975-1979*	Types of Projects Supported
Bilateral				
France	97,047	36,887	16.3	Technical assistance, scholarships; television and microwave projects; feasibility studies for Kandadji Dam and the Parakou-Niamey railroad; agricultural and industrial research; IRD, livestock,water and energy projects;and food aid. Also large commercial loans for capital infrastructure projects.
Germany	67,289	22,067	10.9	Public works, urban sanitation, designs for primary roads, road construction, grain storage facilities, pest protection and scholarships
Canada	82,308	974	10.1	Electrical distribution and irrigation projects. Major earlier year contributions were to primary road network.
U.S.A.	51,178	11,468	7.6	Peace Corps; IRD, cereals, range management, human resources and rural health projects
Belgium	10,312	6,625	2	Technical assistance, food aid, scholarships; health delivery and mining research project
Japan	25,760	2,734	3.5	Roads and uranium research
Netherlands	6,264	3,305	1.2	Road construction and small-scale irrigation

Donor	Amounts Actually Committed ($000) 1975-78	1979	% of Total ODA 1975-1979*	Types of Projects Supported
Others**	12,253	6,898	2.3	
Sub-total Bilateral	352,411	90,958	(53.9)	
Multilateral				
European Dev. Fund	114,955	10,282	15.2	Food aid; construction of schools and MCH clinics and hospitals; technical assistance in public works; road construction and IRD projects
World Bank and IDA	56,000	37,000	11.3	Irrigation, IRD, livestock and animal health projects; road construction and telecommunication projects
African Dev. Bank	11,110	5,732	2.0	Coal-run generating plant
Cultural and Tech. Dev.Agency	595	521	.1	Cultural projects
UNDP and UN Family	25,690	11,706	4.4	Technical assistance; census, soils mapping; IRD, pest control, secondary roads and agricultural projects; meteorological, industrial, health and health planning services; scholarships, and food (WFP)
Sub-total Multilateral	208,350	65,241	(33.3)	
OPEC Countries & Institutions				
Islamic Dev. Bank	14,480	25,350	4.8	Imports of cement and petroleum; feasibility studies for the Baleyera-Filingue road
Arab Fund for Tech.Assistance	3,103	-	.4	Technical assistance
Individual OPEC Countries***	36,314	10,860	5.7	Ano-Araren power complex; food aid; grain silos

Donor	Amounts Actually Committed ($000) 1975-78	1979	% of Total ODA 1975-1979*	Types of Projects Supported
Arab Bank for Econ.Africa in Africa	8,868	-	-	Construction of wells and silos; pest control
OPEC Special Fund	2,900	3,850	.8	Balance of Payments Support
Sub-total OPEC countries and institutions	65,665	40,060	(12.9)	
TOTAL	626,426	196,259		

* Percentages do not total 100% due to rounding

** Though their individual country contributions represented less than 1% of total ODA to Niger during the period 1975-79, combined contributions from the United Kingdom, Norway, Denmark, Switzerland, Austria and Italy represented about 2.3% of that total. China provided assistance in irrigated agriculture, and the U.S.S.R. provided medical technicians to Niger's development program. Monetary values of the communist countries' assistance are not known.

*** Of which: Saudi Arabia $21 million; Kuwait $10.86 million; Nigeria $7.96 million Libya $5.8 million; and Algeria $1.5 million

ANNEX C

URANIUM AND THE NIGERIEN ECONOMY

Annex C

Uranium and the Nigerien Economy

Introduction

Uranium has been an important and dynamic element of change in Niger's economy. Since 1976, the mining sector has provided the impetus for economic growth and structural transformation. Significant annual increases in production and sales prices of uranium between 1976 and 1979 were the main factors which contributed to this favorable trend and allowed the GON to embark on an ambitious investment program. Although in a strict economic sense the direct effects of uranium mining have been limited to the construction, services, and transport sectors, the indirect effects on the economy - most notably the increased availability of financial resources for investment purposes - have been significant. Given the finite nature of the mineral resource, it will be these indirect effects which will have the most long term impact on the economy.

But if uranium has been a key factor in Niger's economic development, it has also been shown to be a volatile one. Changes in world demand and supply as reflected in sales prices and new investment have already had serious repercussions on Niger's economy. It is likely that during the next few years Niger will be faced with some difficult adjustments and substantially slower economic growth.

The following sections briefly review the general characteristics of uranium in Niger and then discuss the economic implications for Niger in the next few years of recent events in the international uranium market.

I. Uranium in Niger

Uranium is found in sandstone-type deposits located primarily in the northern part of the country on the western border of the Air Massif. The ore which

contains approximately 3 kg. metal per ton is transformed into yellow cake and exported. With reasonably assured resources* amounting to 74,000 metric tons (MT)** and additional resources estimated at 86,000 MT, Niger ranks seventh in the free world after the United States, Canada, South Africa, France, Australia and Spain. In 1980, total output was estimated at 4,000 MT making Niger the fourth largest producer in the non-communist world.

Since the discovery of uranium in 1958 by the French Atomic Energy Commission (CEA), mining sector activities have expanded significantly. Production at the Societe des Mines de l'Air (SOMAIR) began in 1971 and that of the Compagnie Miniere d'Akouta (COMINAK) in 1978. Additional mines were scheduled to begin operations in the early 1980's but their opening has been delayed due to the decreases in world demand. There are however, a number of on-going research and exploration activities.

Mining concessions were originally granted to international consortiums of mining companies. SOMAIR and COMINAK involve a total of nine different partners representing six countries. However, many of the planned mining activities are being negotiated between Niger and single companies. In 1976, the Office des

*According to the International Atomic Energy Agency:

- Reasonably Assured Resources refer to uranium that occurs in known mineral depots of such size, grade, and configuration that it could be recovered within the given production cost ranges with currently proven mining and processing technology. Resources in the cost category below $30/lb U308 are considered reserves.
- Estimated Additional Resources refer to uranium in addition to Reasonably Assured Resources that is expected to occur, mostly on the basis of direct geological evidence.

**Production and export are expressed in terms of uranium metal (U) although the output of the mines actually a U compound averaging 70% purity.

Resources Minieres du Niger (ONAREM) was created to manage GON interests in all mining operations subsuming the responsibilities of URANIGER which had been created two years earlier. ONAREM's equity participation in current and planned mining ventures ranges from 31 to 50 percent. Until 1975, marketing of ONAREM's equity share was entrusted to the Compagnie Generale des Matieres Nucleaires (COGEMA), a 100 percent owned subsidiary of CEA. Recently ONAREM has been responsible for marketing a share of total production. Niger is not yet a party to the Non-Proliferation Treaty although is a member of the International Atomic Energy Agency (IAEA).

II. Goverment Policy.

General government policy on mineral development, particularly as it concerns uranium, is cognizant of the fact that uranium resources are finite and that uranium must be seen as a catalyst for change rather than a definitive solution to the country's problems. In the context of the Five Year Plan for Economic and Social Development (1978-1983) uranium is seen as one of the key elements contributing to economic growth. According to the Plan, government policy for uranium development includes the following:

- Strengthen the ability of Niger to prospect, exploit and market mineral resources;
- Channel revenues derived from uranium into productive sectors of the economy;
- Create an industrial base which could assure economic independence;
- Improve working and living conditions of those involved in mining operations;
- Ensure optimal rates of mineral exploitation in accordance with the country's financial needs and absorptive capacity for investment.

Revenue is derived from uranium production through various taxes, royalties and dividends. Profits before distribution are taxed at 50%; dividends and other products distributed to foreign shareholders are taxed at 16%; royalties are proportional to production at 4.5%; and uranium concentrates are taxed at a rate of 1% of their export value. In addition Niger received dividends in proportion to ONAREM's equity participation in the various mining companies.

Since 1978, additional revenue has been derived from a fee levied on each kilogram of uranium produced by the mining companies. This revenue is considered extra-budgetary and accrued to a separate fund. The fee per kg. has varied between CFAF 666 and CFAF 2000.

Through 1980, revenue derived from uranium mining activities was considerable, and permitted large transfers to the National Investment Fund. The outlook however, for at least the next few years is not quite as bright.

III. World Supply and Demand

As with other mineral commodities, the price of uranium is highly suceptible to changes in world supply and demand. The amount, location and cost* of uranium resources are important factors on the supply side. According to the IAEA, more than three fourths of the world low cost proven and estimated reserves (in non-communist countries) are located in Australia, Canada, South Africa, and the United States. Thus the rate at which these countries exploit their reserves will have a significant influence on the market. Political factors, such as government policy which sets production at levels to satisfy domestic needs, or restriction on exports to countries who do not meet specific safeguard concerns, play an important role. Physical factors such as limitations on rates of production, and

*The IAEA defines assured and additional resources by cost categories. See note page 2.

environmental concerns are also important determinants of supply. General uncertainty regarding the use of nuclear power is a crucial factor on the demand side of the equation, and has proved to be, along with slower than anticipated economic activity, one of the key reasons for the recent downturn in the international uranium market.

Throughout the late 1950's and 1960's there was a severe recession in the world uranium mining industry due primarily to reductions in requirements for military programs and slower than anticipated commercial demand. In 1973 and 1974, the situation changed rather dramatically. The major causes for this were the increase in uranium demand and a lagging supply response, rising costs of production and indirectly, the quadrupling of oil prices. In addition, government policies of the major producers contributed to the changed situation.

The upward spiral of spot market prices is indicative of the boom period in the mid and late seventies. According to data published by the Nuclear Exchange Corporation (NUEXCO)*, prices doubled between January and December 1974, reaching $15.00/lb U308 and then increased almost threefold by the end of 1977. Prices above $40.00/lb U308 were reported through 1979.

Prices in Niger followed suit. In 1974, the GON renegotiated the agreement with France concerning pricing and equity participation. Uranium prices are now subject to annual negotiations between the Nigerien government and shareholders in the mining companies. The most rapid price increase occurred between 1974 and 1975 when the per unit price doubled from CFAF 5,000/kgU to CFAF 10,000/kgU. Between 1975 and 1977 the price increased on average by a third each year. The price peaked in 1979 at CFAF 24,500/kg.U (approximately $45.00/lb U308).

* The NUEXCO price ("Exchange Value") is derived from bids to buy and does not reflect offers by sellers. Prices at which deliveries are made under old concontracts are not included.

** All prices are expressed in terms of pounds (lb) U308, uranium oxide, or kilograms uranium metal (kg./U).

TABLE 1

COMPARISON OF URANIUM PRICE IN NIGER AND WORLD PRICE

	Price in Niger		World Price[b)c)]
	CFAF/KgU	$/lb U308[a)]	$/lb U308
1971	4,918	8.52	5.95
1972	4,918	8.52	5.95
1973	4,597	7.96	7.00
1974	5,117	8.20	15.00
1975	10,000	17.96	35.00
1976	14,000	22.62	41.00
1977	20,000	31.40	43.20
1978	23,500	40.17	43.25
1979	24,500	44.44	40.75
1980	24,500	43.82	28.00
1981	20,000	33.44	--

Notes: a) Conversion used = $/KgU ÷ 2.6 = $/lb U308
b) Refers to "Exchange Value" quoted in NUEXCO report, November 1980. "Exchange Value" is derived from bids to buy and does not reflect offers by sellers.
c) Price quoted for December of each year.

Sources: IMF, GON documents, NUEXCO

The 1970's were a high watermark of nuclear power when uranium production capacity responded vigorously to rising demand expectations and exploding prices. By late 1979 however, demand began levelling off. Slower than anticipated economic activity among the major actors in the international uranium market and hesitancy about nuclear power (a trend which was exacerbated by the incident at Three Mile Island) contributed to the turnaround in the market. As a result of these factors

the current uranium market is a buyer's market with supply outstripping demand. Spot market prices fell rapidly throughout 1980, reaching a low of $26.00/lb U308 in December. Many utility companies have four to five year stockpiles and have started selling them off, generally back to the producers, rather than consolidating them.

Because prices are negotiated at the beginning of each year, Niger was able to maintain a sales price of $45.00/lb U308 throughout 1980. Pressure to lower the price was keen at the annual price negotiations concluded in January 1981. In a compromise agreement, the 1981 sales price was set at CFAF 20,000/kg.U ($33.44/lb U308) which represents an 18% drop from the 1980 price. This price is still above the spot price quoted in December 1980.

IV. Implications for Niger

Since 1976, uranium has been the most dynamic element in Niger's economy, contributing to the growth of GDP, to the increase in foreign exchange earnings and to the inflow of government revenues. The availability of financial resources allowed the GON to embark on an ambitious investment program aimed at ensuring the long-term, self-sustaining development of the economy. Recent events in the international uranium market however, underscore the problems associated with reliance on one commodity. For Niger, it is likely that the next few years will be a period of readjustment and much slower growth.

- Gross Domestic Product

The impressive real growth rates of GDP in recent years are largely the result of increased value added in the mining sector. Between 1976 and 1980, the average annual growth rate of GDP was estimated at 10.5% while that of the mining sector

was 50%. In 1980, the contribution of the mining sector to GDP was estimated at CFAF 47.4 billion ($220 million) in constant 1975 prices, or 17% of the total, as compared to 5.3% in 1976. Activities in the mining sector also had a positive influence on the transport, construction and services sectors during that period. (See Table II).

Declining worldwide demand for uranium and the concurrent downward trand in prices have already resulted in the postponement of new mine developments in Niger and will certainly imply a sharp reduction in planned private investments in the mining sector. Over the next few years, these factors will contribute to a curtailment of mining and related sectors activities in particular, and to slower economic growth in general.

- Public Finance and Investment

The amount of uranium-derived revenue that accrues to the government budget is a function of production, of the sales price of uranium and of the tax system applicable to the mining company. Due to expanding output, favorable prices and a high ratio of government revenue to gross export value, Niger was assured of significant annual inflows of uranium-derived revenue through 1979. Between 1975 and 1979, uranium revenue represented between 28 and 36% of total revenue. In the 1979/80 budgetary year, revenue from this source was in excess of CFAF 26.0 billion ($122 million). (See Table 3).

TABLE II

SECTORAL DISTRIBUTION OF GDP

AT 1975 PRICES

(in percent and CFAF billions)

	1975	1976	1977	1978	1979	1980
		(in percent of total)				
Rural Sector	46.4	47.9	46.2	45.3	44.3	45.7
Subsistence crops	(29.5)	(35.1)	(31.4)	(31.1)	(30.0)	(31.1)
Cash Crops	(5.0)	(4.5)	(4.0)	(4.0)	(3.9)	(3.7)
Livestock	(11.8)	(8.4)	(10.8)	(10.3)	(9.9)	(10.9)
Mining	5.8	5.3	6.6	11.6	16.4	17.0
Industry, transport, construction services	21.6	20.3	18.1	17.9	15.8	14.5
Commerce	14.6	15.4	17.7	14.2	13.6	12.1
Government	7.0	6.5	6.6	6.0	4.8	5.2
Net indirect taxes	4.4	4.8	4.6	5.0	4.8	5.2
TOTAL percent	100.0	100.0	100.0	100.0	100.0	100.0
GDP at market prices (CFAF billions)	156.1	188.2	204.0	223.8	257.5	277.6

Note: Totals may not add to 100 due to rounding

Source : IMF

TABLE 3

TOTAL REVENUE AND URANIUM-DERIVED REVENUE

1974/75 - 1979/80

(in CFAF million and percent)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80[b]
Total Revenue (CFAF millions)	22,385	27,460	37,627	47,378	59,242	72,859
Uranium Revenue[a] (CFAF millions)	3,478	7,579	10,565	14,579	21,650	26,000
As percent of total	15.5	27.6	28.0	30.8	36.5	35.7

Notes: a) Does not include revenue which accrues to an extra-budgetary fund.
b) Estimate

Source: IMF and GON

Government policy has been to transfer to the National Investment Fund (FNI) an amount equivalent to the revenue derived from uranium. Allocations to the FNI more than doubled between 1977 and 1978 and again in 1980, allowing the GON to appreciably increase investment activity.

TABLE 4

TOTAL, CURRENT AND CAPITAL EXPENDITURE

1974/75 - 1980/81

(in CFAF millions and percent)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80[a)]	1980/81[a)]
Total Expenditure	19,562	25,953	34,702	47,096	57,069	72,859	80,624
Current Expenditure	17,538	22,406	28,432	31,848	38,740	46,859	54,624
Capital Expenditure	1,873	2,587	5,914	13,623	17,603	26,000	26,000
As percent of total	9.5	10.0	17.0	28.9	30.8	35.6	32.2

Notes: a) Estimates

Source: IMF.

The 18% drop in the 1981 sales price for uranium has already had an impact on 1980/81 budget allocations. The total budget increases by only 12% from last year compared to increases of 25% in prior years and for the first time, resources earmarked for the FNI remain at the same nominal level as for the 1979/80 budgetary year. Even if the uranium price remains steady in subsequent years, the FNI could decline in both nominal and real terms between now and 1983. (See Table 6).

Lower than anticipated resources available to the FNI also have obvious implications for GON contributions to the financing of the Five Year Plan. The Plan envisaged a total contribution of CFAF 155.6 billion ($730 million) by the FNI as well as substantial operating expenses to be met through the general budget. Based on the present downward trend in the sales price of uranium,it is likely

that the GON will experience a significant revenue shortfall. In addition it is likely that there will be a sharp reduction in planned private investment in the mining sector during the two year period. According to President Kountche however, Plan targets and investment levels will be met through recourse to commercial borrowing. By mid-1980, total outstanding debt reached an estimated $797 million; further and extensive borrowing could lead to a serious debt problem by the middle of the decade. Although the cost of servicing debt remains manageable at this time, large new borrowings and a shift to commercial loans at high interest rates, coupled with a reduction in export earnings could lead to a significant deterioration of the debt service ratio.

- Foreign Trade and Payments

Uranium has been a key factor in changing the composition of Niger exports and in contributing to overall growth of merchandise trade. The rapid price increases after 1974 and the expansion of production were reflected in a growing share for uranium in total exports. From a level of CFAF 2.0 billion ($9 million) in 1971, uranium exports reached an estimated CFAF 98 billion (455 million) in 1980, accounting for approximately 85% of total exports. (see Table 5).

TABLE 5

TOTAL EXPORTS AND URANIUM EXPORTS

1971 - 1980

(in CFAF million and percent)

	1971	1972	1973	1974	1975	1976	1977	1978	1979[a]	1980[b][a]
Total Exports (CFAF million)	10,670	9,099	13,817	12,621	19,556	31,979	42,604	68,685	99,640	116,000
Uranium Exports (CFAF million)	2,000	1,451	5,248	6,322	11,882	20,476	28,400	52,400	83,400	98,000
As per cent of total	18.7	16.0	39.2	50.1	60.7	64.0	66.6	76.3	83.7	84.5

Notes: a) Estimates
b) Total includes only livestock and uranium -

Source: IMF

Total production during the Plan period will be less than projected due to the postponement of the opening of a third mine and to less than full capacity production from the two mines currently in operation. Output of 4000 MT in 1980 was still 500 MT under full capacity. The trend in the sales price of uranium is the principal factor which will determine output levels over the next few years. If the sales price declines, or even remains steady, the decision may be made to hold production at present levels rather than increase to full capacity.

The table below shows possible production volume and value through 1983. As noted earlier, a production level of 4500 MT in 1983 may be optimistic. Even at that level, however, the gross export value declines.

TABLE 6

PROJECTIONS OF PRODUCTION, EXPORT VALUE, REVENUES [a)]

1980 - 1983

	1980	1981	1982	1983
Production/Export (M TU)	4,000	4,200	4,300	4,500
Sales Price (CFAF)	24,500	20,000	20,000	20,000
Gross Export Value (CFAF bil.)	98.0	84.0	86.0	90.0
($ mil)	455.8	390.7	400.0	418.6
GON Revenues [b)] (CFAF bil)	24.5	21.0	21.5	22.5
($ mil)	113.9	97.7	100.0	104.6

Notes: a) Expressed in 1980 prices, $1.00 = CFAF 215
b) Estimated at 25% of gross export value

If production were to reach full capacity in 1981 and be maintained through 1983, (and the sales price remained at CFAF 20,000/kgU), gross export value could be maintained at CFAF 90.0 billion ($418.6 million) between 1981 and 1983.

ANNEX D

ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

AFN	- Association des Femmes Nigeriennes
CEAO	- Communauté Economique de l'Afrique de l'Ouest
CFA	- Communauté Financière Africaine
CIDA	- Canadian Internationale Development Agency
CILSS	- Comité Inter-Etats pour la Lutte Contre la Secheresse dans le Sahel
CRS	- Catholic Relief Services
CWS	- Church World Service
FAC	- Fonds d'Aide et de Cooperation
FAO	- Food and Agricultural Organization
FED	- Fonds Europeen de Developpement
FNI	- Fonds National d'Investissement
DGP	- Gross Domestic Product
GMV	- Groupement Mutualiste Villageous
GON	- Government of Niger
IBRD	- International Bank for Reconstruction and Development (World Bank)
IMF	- International Monetary Fund
INRAN	- Institut National de Recherches Agronomiques du Niger
MCH	- Maternal Child Health
NBA	- Niger Basin Authority
OCCGE	- Organisation de Coordination et de Cooperation pour la Lutte Contre les Grandes Endemies
ONAHA	- Office National pour les Amenagements Hydro-Agricoles
ONERSOL	- Office de l'Energie Solaire
OPVN	- Office des Produits Vivriers du Niger
PL480	- Public Law 480
UNCC	- Union Nigerienne de Credit et de Cooperation
WFP	- World Food Program
WHO	- World Health Organization

The following exchange rates have been used throughout the report:

	CFAF per US $
1973	222
1974	240
1975	214
1976	238
1977	245
1978	225
1979	212
1980	215