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Country Development Strategy Statement

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CHAD

COUNTRY DEVELOPMENT STRATEGY STATEMENT

Part A. Profile of the Poor Majority

Although the statistical base in Chad is weak, available information leads to the unescapable conclusion that Chad is a desperately poor country, poverty is generalized, Chadians have experienced negative growth in per capita income in the last ten years, and the near-term prospects for a reveral of this tend are far from encouraging.

According to available statistics, Chad's 1977 population is about 4.2 million (about the same population as the state of Tennessee), living in a land area almost twice the size of Texas. The Northern half of the country is mostly desert and contains only 2 percent of the population. Four-fifths of the Southern half of the country is Sahelian zone; the remainder, Savannah zone. 51% of Chad's total population resides in Sahelian zone; and 47%, in the Savannah, which accounts for only 10% of Chad's total land area. Population density varies widely. The average ranges from about one person per square kilometer in the desert to 14 persons in rural southern cotton-growing regions. In general, Chad is sparsely populated, and land pressure is not a problem. In years of normal rainfall Chad has the potential to be self-sufficient in the productionof basic food crops.

Chad's annual production (Gross Domestic Product) is currently about CFA 125 billion ($521 million). While there are dangers in comparing this to other countries, Chad's total income is equivalent to that of a typical U.S. city of 75,000 people, say Salem, Oregon. In terms of per capita income, the average Chadian receives about $125 per year. By international comparison, Chad's Gross Domestic Product is one the world's smallest. In terms of GDP per capita, Chad ranks 139th out of the 145 countries for which data are available. More seriously, per capita income is estimated to have declined about one percent per year since 1967. The prospects for 1968 are for a further decline due to lower world prices for cotton--Chad's only export of any importance.

While little is known of Chad's income distribution, observation and available information indicates that poverty is generalized, and that the "upper Crust" consists of foreign elements in Chad who own and operate commercial and manufacturing establishments. The average Chadian in the

rural area lives from hand-to-mouth (see below). The city dwellers who comprise 13 percent of the population are not much better off save the 13,500 who have government jobs or those lucky enough to work in one of the few manufacturing or commercial establishments. Unemployment in the urban area is rampant. In Chad the indigenous entrepreneural class is very limited in numbers. The few highly educated people that exist work for the government, or quasi-government institutions, e.g. Cotontchad, SODELAC, etc.

In the rural areas, where 87 percent of Chadians live, the situation is best described as basic subsistence. Virtually the entire rural population is composed of small farmers--there is no modern rural sector such as is found in many Latin American countries (e.g., banana, coffee, and cocoa plantations). In the southern third of the country where rainfall is abundant, cotton is the cash crop and the mainstay of the economy--it provides work for about 600,000 farmers (half of the active labor force) and 40 percent of the turnover in the industrial sector. It contributes about 10 percent of budgetary revenues, 13 percent of GDP, and 85 percent of Chad's export earnings. In Chad, as cotton goes, so goes the economy. Cotton is grown on small family plots where production is limited to the availability of family labor. While Chad's cotton farmers are probably better off than their Sahelian counterparts engaged in dryland agriculture, their meager cash income is quickly spent repaying loans and providing sugar, tea and basic inputs. In order to insure survival, small farmers in the south also grow most of their own food (millet/sorghum and tubers) and will tend to a few animals.

In the drought-prone Sahel, life is a hit or miss operation. Like all other Sahelian countries, Chad suffers under the variability of rainfall. Since most agricultural production is marginal to begin with, even small changes in rainfall can cause large variations in yield and production. Localized drought and food shortages are constantly occurring and when a generalized drought occurs (1968-73) the results can be disastrous. Small farmers in the Sahel tend to diversify their activities to include dry-land farming and livestock production. In some areas peanuts are a cash crop. Millet/sorghum is their basic crop and used mostly for household consumption. Of Chad's entire millet/sorghum production, only about 10-15 percent enters marketing channels. In much of the Sahel, cattle raising is important, although there are relatively few full-time cattle herders. Since cattle are used as a store of wealth, herdsmen in the Sahel are potentially better off than any other group in the rural sector. Their problem is they tend to have too many cattle for the land to support and the result tends to be environmental degradation. Modernization

in the livestock sector involves increasing offtake thus allowing a net reduction in the number of cattle in the Sahel.

In the agriculture sector, one also finds pockets of productivity in the form of irrigation projects. These include the Sategui-Deressia rice project, the Bol Polders wheat/cotton, project, and the small irrigated perimeters projects along the Chari River. While the rice project presently involves only a small area, (300 hectares) yields are very good and average almost twice the traditional yield. By 1979 the Bol Polders project will bring 1,200 hectares into wheat and cotton, the longer-run goal being 3,000 hectares. The irrigated perimeters will produce a variety of food crops, but at the present time cover only about 175 hectares.

The long-run solution to Chad's food problem will be the critical margin of production provided by irrigated agriculture. While the bulk of nation's food will be provided by dryland farmers, in periods of drought, it will be the irrigated perimeters that will prevent generalized famine.

Life in the rural sector is best described in a recent survey of a cotton growing area of Chad containing 521 villages. None of the villages had electricity, half had wells, 11 percent had primary schools, and 4 percent had health posts. For those villages lacking these facilities, one had to walk an average of 2.7 kilometers to get water, 7.8 kilometers to go to school, and 24.7 kilometers to reach the health post. No similar study exists for the Sahel, but because of lower population densities, the situation would be much worse.

Under such circumstances, the following statistics which apply to all of Chad are magnified in the rural sector. For comparison, comparable data for the U.S. are also given:

	Chad	U.S.
Life expectancy	39 years	70
Infant mortality rate	160 per 1,000 live births	20
Death rate	25 per 1,000	9
Population per physician	62,880	630
Population per hospital bed	800	130
Caloric inputs as percentage of requirements	86 percent	124

In conclusion, the characteristics that best describe and define the poor in Chad are that they live in the rural sector and derive their subsistence from agricultural pursuits. The quality of life as we understand it is low. The pattern of equity in Chad is not too bad--poverty is generally pretty well distributed. While there are a few wealthy urban based individuals, for the most part, they are not ethnic Chadians and they are not in control of resources that could be used in development, e.g. land. The underlying problem in Chad is poverty, not income distribution. The challenge, therefore, is to raise incomes generally. In what follows, the constraints which restrict income growth will be discussed.

Part B. Key Factors Contributing to Poverty

Chad is caught up in a vicious circle of poverty from which there is no easy escape: incomes are low because productivity is low; productivity is low because investment is low; investment is low because savings are low; savings are low because incomes are low and so the circle is complete. More disturbing, there are interlocking vicious circles in health, education, transportation, or just about any sector one cares to examine. Where to break the circle and get Chad moving on a course of self-sustained growth is the most gnawing problem facing foreign donors, and there are about as many approaches as donors. However, there appear to be certain constraints which are generalized--which cut across all sectors and limit the success (or condemn to failure) efforts to break the vicious circle of poverty. These constraints are:

- The embryonic state of the domestic transportation system.

- The use of primitive agricultural technologies.

A further discussion of each of these constraints follows:

1. Transportation and Communications

a. Domestic

Road transport is the predominant mode in Chad's transport system accounting for about 75 million t/km, or over 90 percent of total freight traffic.

The navigable waterways, Lake Chad and the Chari and Logone Rivers have only minor local significance. Air transport is limited by the small

fleet of aircraft and the deteriorating condition of landing strips. The road network comprises about 7,300 km of classified roads and about 24,000 km of tracks providing connections with agricultural areas. Only about 1,300 km are engineered, all-weather roads; of these only 253 km are paved. Road distribution is uneven; the major portion is located in the cotton-producing areas in the south and south-west of the country. The densely populated area of highest potential for agriculture production to the south of N'Djamena is physically separated from the capital for at least one third of the year due to the nonexistence of an all-weather road through the flood plains between Bongor and Lai. The sparsely-inhabited northern part of the country is served mainly by desert tracks. The condition of the road network is poor; inadequate maintenance, due to shortage of funds, has impaired road serviceability.

The reduced road maintenance during past years has had serious impact on the condition of the road network. Running surfaces of gravel roads, which received only spot regravelling at critical locations, are worn out, and most earth roads and tracks are virtually impassable. Without outside aid, road maintenance is expected to be further reduced and practically cease with time, as the existing equipment is in run-down condition and the Government does not have funds for equipment renewal.

b. International

The remoteness of Chad's urban centers from ocean ports (1,700-3,000 km) and difficult internal communications give rise to high transport costs, which in turn inflates the price of imports and most consumer goods, and has a debilitating effect on the competitiveness of Chadian exports. For example, there is no good direct road link between Chad's productivity area in the Southwest and the transportation network in neighboring Cameroon, i.e., the Moundou-Guidjiba link. Transport costs for cotton exports account for a significant 15-20 percent of f.o.b. price, and the competitiveness of Chadian cotton exports is becoming marginal. Imported cement costs about CFAF 55,000 in Chad compared to CFAF 10,000 at the port of Douala, while diesel oil costs CFAF 82/liter compared with a wholesale cost of CFAF 25/liter in Nigeria. Transport costs are high due to distance to the sea, poor roads in both Chad and transit countires, inefficient road transport, and international transit agreements which do not always favor Chad.

The effects of Chad's poor transportation network (coupled with the problems with international linkages) on the rural sector is that it tends to perpetuate poverty. Because of isolation, large parts of the country

are not under government control and cannot receive basic health, education and government services. Thus, high mortality, low education and no extension services. High transport costs reduce the marketing frontier thus reducing the possibilities for specialization while inflating the costs of agricultural inputs. The effect is to place a premium on local self-sufficiency, which because of low productivity and low incomes tends to drive standards of living down to bare subsistence levels. Efforts by donors to impact on the rural sector are likewise hampered. With the majority of the population virtually unreachable during 5-6 months of the year, projects become impossible to supervise. Hospitals can't be stocked, and even if they could be, patients who live more than a day's walk away would be unreachable. Schooling is ineffective because teachers often cannot be recruited. Those that can be found soon lose their spirit due to low attendance rates, lack of teaching aids, and the realization that lack of opportunities renders an education useless. Forced isolation has other insidious effects--it enforces cultural isolation and renders national unity (a prerequisite to a national development plan) impossible. Many Chadians are born, live and die in an area circumscribed by a day's walk.

The foregoing should not be interpreted to mean that roads will solve all of Chad's problems and propel it along the road of sustained growth. What it does mean, however, is that Chad will never make significant progress in improving the condition of 87 percent of its population until a reliable road transportation system is developed. A reliable road network is a sine qua non to Chad's development both because of its direct impact on the population and because it reduces the seriousness of other constraints.

2. Primitive Agricultural Technology

To understand better the complex problems of agricultural technology, one should think of the typical Chadian farmer as being more or less in a state of equilibrium. A relatively fixed amount of labor and capital is applied to a piece of land. Land is typically not a constraint, and the extent of his cultivation is determined by his labor/capital/technology mix. Because labor resources are fixed (fully employed at planting and harvest time), because his capital is limited, and because his technology is primitive the family typically produces (in years of normal rainfall) enough to sustain themselves and a small surplus which is sold or bartered for basic household items (sugar, tea, etc.). If the harvest has been good (or bad) a certain amount will be added to (or withdrawn from) his on-the-farm storage bin. This stock of grain is

held to level out annual variations in production. The farmer will sell virtually no grain until his reserve stock is built up to a level which he considers safe. Generally, only about 10-15 percent of the grain produced is marketed. This is because (1) farm family production is typically not that great in the first place, and (2) grain is not that good a cash crop. If a farmer goes into the planting season with adequate or surplus grain in his storage bin and if the initial rains are favorable, he will tend to grow less grain and more of a cash crop: cotton (in the south) or peanuts (in the Sahel). Alternatively, he may invest in an animal or two or, if reliable transport is available to a near-by urban center, he will produce vegetables or dairy products to be sold in the urban center.

The implications of the above scenario on rural poverty (and attempts to reduce it) must be given careful consideration.

First: Attempts to break the vicious circle of rural poverty by changing one input in the farmers production equation will not succeed unless the farmer is in a position to adjust other inputs in order to reach a new equilibrium. For example, just providing credit to a farm family will not lead to increased production if the farmer does not have access to the land/labor/technology inputs or reach a higher income equilibrium. Such a combination of inputs (hereafter called a techpack) is not cheap and generally involve land stretching inputs (fertilizer, improved seed, chemicals), working capital to finance the above inputs plus capital to purchase labor saving devices (planters and farm level thrashes), new technology in the form of planting and weeding practices (usually involving farmer education and/or extension services), and finally, expanded markets (which is where roads become essential).

Second: It is unlikely that programs which encourage the rapid expansion of sorghum/millet production will succeed. There are strong indications that the income elasticity of millet/sorghum is low, i.e. as incomes rise a constant amount is spent on sorghum/millet and increased income is spent on bread, meat, eggs, dairy products, etc. Thus, markets for sorghum/millet will grow slowly, probably no faster than the rate of population growth. Under these conditions, increasing farmers' income involves diversifying his production base in order to expand his marketable surplus.

To summarize this section, and to address directly questions crucial to the development of an AID strategy, Chad's poverty is the result of inadequate access to improved inputs, to inadequate technology, and,

because of inadequate infrastructure, to inadequate markets. It does not result from a basic imbalance between natural resources and population. It has been argued above, that the two are in rough equilibrium.[a/] The problem is that the equilibrium is at an unacceptably low level.

Finally, one should ask if GOC policies are a direct contributing factor to generalized poverty. The GOC could be accused of contributing to poverty on two counts: the emphasis on cotton and sporadically forcing farmers to sell rice at below-market prices. Given the constraints discussed in this section and Chad's colonial past, there appears to be no viable short-run alternative to growing and exporting cotton. The rice buying scheme resulted from the inept actions of young government whose motives were sterling, but whose data base was weak. In the final analysis, it is what the GOC has not done, rather than done, that contributes to Chad's poverty. In the following section, the reasons for the GOC inability to do anything about poverty will be explored.

Part C. Constraints Impinging Upon Efforts to Raise Income

Having identified the factors contributing to poverty in Chad, this section will review the constraints which hamper GOC and donor efforts to raise incomes:

In Chad, there appear to be three basic constraints: financial resources, the poorly developed human resource base, and institutional capacity.

1. Financial Resources

Chad's financial situation is best described as precarious. The revenue base is weak relying mostly on import duties and export taxes on cotton. In 1977 the GOC's tax and nontax revenues amounted to only 10 percent of GDP. More seriously, revenue growth has been slow and is usually offset by increases in the price levels. Thus, the volume of real resources available to the GOC has tended to decline. On the other hand, the growth of expenditures has not been restricted. The result has been a growing pile of unpaid bills (Treasury arrears) and a reduction in investment spending. In 1977 the accumulated pile of

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a/ The exception is in the Sahel during a prolonged drought. The imbalance brought about by lack of rain tends to be offset by outmigration.

unpaid bills amounted to about FCFA 10.6 billion or an amount equivalent to 72 percent of revenues in that year! Further, government financed investment expenditures have declined. In 1967-68, about 20 percent of public investment was funded by domestic resources, in 1974-75 this percentage was practically nil, by 1977 it was zero and is budgeted to be zero in 1978. About all the GOC can do is pay salaries and provide some equipment and supplies. Funds for maintenance and investment are not available and the results are easy to see. Roads and highways are deteriorating and the government buildings are in shambles. Chad's entire development effort (together with 14 percent of its current expenditures--French budget support--) is being funded by foreign donors. In 1976 Chad received about $93 million in economic and social development assistance--an amount equivalent to 17 percent of that year's GDP!

With respect to the availability of foreign exchange to finance development efforts, the situation is also precarious. Imports far exceed exports and the gap is widening. In 1977 export earnings fell by 4 percent while imports increased by 8 percent. Serious balance of payments pressures were avoided by increases in private and offical inflows. In 1978, export earnings are projected to drop by 16 percent due to lower cotton prices. The GOC has indicated that they will restrict the growth of credit in order to hold the growth of imports to 7 percent. Because of these anticipated balance of payments difficulties, the GOC has requested from the IMF a loan for balance of payments assistance of SDR 2.6 million (about $3.0 million).

To summarize this section, the public finance deficit is the most pressing short-term constraint on the country's development, and in addition, it undermines the gains achieved so far. Chad can neither finance any domestic contribution to its investment effort nor provide fully for the operation and maintenance of past investment. Moreover, presently, the government cannot finance full operation of its services. This situation prevents the systematic allocation of resources to high priority activities and increases the country's dependence on foreign aid. The accumulation of arrears also undermines the confidence of the private sector, leads to stock disruptions, endangers the operations of public utilities companies, let alone their investment capability, and impairs the capability of the Government to attract private capital from abroad. Finally, because of balance of payments difficulties, virtually

no foreign exchange will become available to finance development efforts.

The only bright spot on the financial horizon is the possibility of oil revenues if commercial quantities of petroleum are discovered. While initial drillings and soundings are encouraging, it would probably be close to a decade before substantial revenues could be realized. A pipeline to the sea would have to be built. This would take several years and even then the amortization of its cost together with the cost of pumping oil 1,700 km will reduce Chad's net earnings from oil. Also, during the next decade the GOC's regular budgetary requirements will be increasing and as oil revenues are realized there will be competing demands for them. For the purposes of this paper, it is best to assume that for the 1981-85 planning period, there will be no oil revenues to help finance Chad's development expenditures.

The implications of Chad's precarious financial situation is that the GOC will not, repeat not, be able to absorb the recurrent costs of externally assisted projects during the 1981-85 planning period. About all the GOC will be able to provide is the services of on-board GOC personnel and existing government facilities. The local cost financing implications for donor agencies are quite clear: be prepared to finance everything and either a) design the project so that when it terminates there are no new burdens to be borne by the GOC, or b) be prepared with a follow-on project to cover just the recurrent costs for as long as deemed necessary to reach the goals of the original project.

At this point we ask to what extent the problems observed here are the direct result of inappropriate priorities and policies. We also ask if the GOC has adopted economic policies which inhibit the ability of the GOC or donors to remove constraints to development.

GOC's economic policies tend to be ad hoc in nature and because of an inefficient bureaucracy tend to be unevenly implemented. As noted in Part B, the GOC can be criticized more for what it does not do rather than what it does. In terms of broad macro-economic policies, there do not seem to be any serious problems. Money, credit and exchange rate policies are handled by the regional bank which handles such matters in the ex-francophone colonies. These seem appropriate and are not singled out

by donors as constraints. The same is true of the foreign trade sector, since Chad is part of the franc trading zone.

As has been pointed out in this section, the most serious obstacle to development is the lack of GOC financial resources. This results from both a weak tax base and spending policies which leaves nothing for maintenance or investment. While spending policy could be singled out as "inapprpriate", we can find no examples of lavish or irresponsible spending. Total GOC expenditures in 1977 were equivalent to 12 percent of GDP. By international standards this is not excessive.

Also, Chad's security problems have exercised overbearing influence on GOC financial policies. The existence of a severe internal security problem justifies the necessary priority given by the GOC to military assistance and explains some of the GOC's failure to date in making progress in the development arena. Border and rebel problems absorb the attention and energies of GOC leadership and require a significant portion of its budget.

Whether or not these expenditures indicate GOC neglect of economic and social development requires consideration beyond simple quotation of budget allocations. It is interesting to note, for example, that only 62 percent of the population is living in secure areas, which, while accounting for less than a quarter of the nation's land area, produce virtually all revenue-producing cotton exports and contain the majority of useful agricultural land in Chad. More important is the fact that a politico-military solution to Chad's defense and security problems is necessary to assure the political stability required for the peaceful continuity of the central government and the effective administration of these secure areas and their populations, which, in turn, is necessary for any effective GOC effort toward economic and social development.

2. Human Resource Base

For a variety of reasons, including her colonial past, Chad faces a serious shortage of indigenous talent who can perceive the imperatives of economic and social development, establish rational policies to encourage growth, and attract the domestic and foreign resources needed to remove the constraints facing development.

Since independence in 1960 Chad has relied on expatriate assistance to provide these functions. Although, due to varying categories of employees and functions, it is not possible to establish an exact relationship; on the average, there is currently one expatriate technician for each 15 GOC employee (military excluded). While this might have been satisfying for the expatriates and continued to provide the excolonial powers a contained supply of local produce, it did not do much to develop indigenous Chadian talent. Even now, 15 years after independence, the technicians in virtually all ministries are supported by expatriates, and Chadians carry limited technical responsibility. The heavy number of working level expatriates underscores the serious human capital shortages facing Chad. Development in Chad would be even more difficult were the expatriates removed to give greater autonomy to their Chadian counterparts.

Nevertheless, it appears that expatriate advisors can do little more than maintain the status quo. For some reason, probably a combination of cultural and technological gaps superimposed on a different value system, expatriate advisors have had problems leaving behind smooth running functions. Things typically go smoothly until the advisors leave, then quickly revert to the preadvisor status quo. We can find no project which has gone smoothly when the advisor departed. On the other hand, all can tell of projects that have failed and we try not to notice the disabled vehicles parked behind various ministries.

In the final analysis, there is no substitute for indigenous Chadian leadership, nor does there appear to be any short cut in the training and education process. While there are currently 900 Chadians studying in 30 different countries, many of these will not return. Many of those that do return will be frustrated because the facilities or infrastructure needed to put their skills to use do not yet exist. In conclusion, it will take several generations before there will be a sufficiently large mass of indigenous leadership to direct Chad's development efforts. In the meantime, one must remain patient, try to improve the effectiveness of expatriates, continue training programs and hope that it will all pay off in the long run... A rather unpalatable solution to a nation of problem solvers.

3. Institutional Capacity

Most Chadian ministries are little more than employment agencies. Of the approximately 13,500 government employees, only about 150 are classified as Ministerial Office staff (where the basic decisions are made),

and these are heavily backed by expatriate advisors. While there are some offices and bureaus which have promising leadership most government employees are poorly paid, poorly supported and make virtually no contribution to Chad's development effort.

The quasi-government institutions tend to be better staffed. They typically have a commercial base and thus do not have to depend on the GOC for funding (e.g., Cotontchad, CMPA, etc.), are empowered to deal directly with international donors, and are heavily backed by expatriates. In view of the inherent weakness of GOC ministries, development via specialized agencies has permeated GOC development strategy to date. The disadvantage of this approach is that development planning becomes difficult, if not impossible, since donors can choose (or create) new agencies at will. Thus, development priorities tend to be selected by the donors and conflicts and contradictions are bound to arise.

The underlying reason for the appalling condition of Chad's human capital is Chad's equally appalling education system. Chad's education system must be considered one of the weakest in Africa today. Although Western education was introduced in Chad in 1920, not until the mid-1950s were secondary school programs established which offered graduates a certificate of completion. Nor were Chadians trained in appreciable numbers abroad. It is estimated that fewer than a dozen attended secondary school (in Brazzaville) prior to 1939. As a consequence today, Chad's reserves of trained manpower are slight.

While the education system is slowly improving and the number of Chadians studying abroad greatly expanded it will take a long time and a considerable amount of managerial skill to bring educated Chadians together into a critical mass capable of perceiving the imperatives of development, establishing policies to encourage growth, and amassing the domestic and foreign resources to get development started. In the interim, foreign donors contemplating projects in Chad should be prepared to provide whatever human skills their project requires. A typical project should also include provisions for identifying Chadians who can be trained eventually to take over the project. As a general rule, every project in Chad should include provisions to provide a net increase in Chad's supply of human capital.

To conclude this section, inadequate institutional capacity is an important constraint to the implementation of development projects, and

this is due to the paucity of appropriately trained manpower. In the short run, these inadequacies can be partially offset by imported technicians. In the longer run, however, Chadians must be able to direct their own development and this will involve an extensive, and expensive, upgrading of Chad's human capital.

3. Growth/Equity Trade Offs and Section 102(D)

Over the longer term equity concerns can only be effectively addressed in the context of economic growth. Thus, in Chad, the immediate concern of the GOC and donors is to get growth started, and there is a strong presumption that it will have a positive impact on equity considerations, i.e. improve the lot of the poor majority. This is because in Chad no conceivable development strategy could succeed unless it involved the rural sector--the sector which employs 90 percent of the population and accounts for all of Chad's exports.

As discussed in greater detail in TOAID A-22 of August 25, 1977 (which discussed the GOC commitment to development with respect to Section 102(D) implications), the GOC is willing to embark upon growth with equity strategy but just does not have the financial or human ability to do so. Concerning Chad's progress in meeting 102(D) criteria, A-22 also examined the GOC's performance with respect to its efforts to increase agricultural productivity, to reduce infant mortality, to control population growth, to promote greater income equality and to reduce un- and underemployment.

In view of the meager resources at its disposal, the GOC has performed reasonably well with respect to increasing agricultural productivity, at least for cotton. They have not done well in utilizing the tax system to raise domestic resources for development. Because of competing demands for government resources, coupled with a weak tax base, the investment budget, which never was significant in any case, has been non-existent since 1976. One criterion, population growth, apparently has not been recognized by many observers to hold the same degree of contemporary relevance as a factor of development as it does in other LDCs; and another, infant mortality, which in bleak reality continues to be the most active restraint to population growth, is a deplorable circumstance which would require a major international donor

effort to alter. Even then, given the circumstances faced in Chad, compared with the magnitude of donor funds available for that purpose, it is doubtful whether a satisfactory solution could be attainable in the foreseeable future. In any case, the task is effectively beyond the capability of the GOC alone to achieve meaningful results. The concern for income distribution should be directed more at raising national income than at altering its distribution. What little income the country now has is not distributed too badly. Solution of the unemployment problem, like that of infant mortality, is currently out of the grasp of the GOC regardless of its intentions. In conclusion, while the interest may be present, the GOC has not yet been able to get development started.

Part D. AID Assistance Strategy

The overall goal of the AID program in Chad is to increase Chad's capacity for achieving national food self-sufficiency while improving the quality of the life of the rural population.

AID program strategy is based on directives from the U.S. Congress which indicate that it is not sufficient for AID to assist in increasing production levels. Its program goal must also encompass activities designed to improve the life situation of a substantial portion of the rural population. AID's development approach should be in direct support of the longer-term structural changes needed to increase the productivity and income of the small farmer. The AID program therefore opts for schemes which will induce incremental production increases of individual farmers through better land use, improved methodology, seeds manures, animal traction tools, storage practices, credit facilities, etc.

While our projects will be designed to support directly the GOC's efforts to better the lives of the Chadian peasant, we recognize that no meaningful development program can be sustained without improvements in host country institutions and the continued development of indigenous human resources.

The AID program will address the requirement to develop the capabilities of the principal GOC technical services involved in rural development. The weak institutional base of the various GOC technical services calls for strengthening of the central offices of these units as well as their field elements. Thus, the importance for the basic institutional development projects in the sectors of priority. Direct support of these

services represents an effective and direct manner of assisting the largest numer of subsistence farmers in increasing local food availability, in improving individual earning capacity, and in addressing needs relating to the overall welfare of the rural population.

In view of AID's mandate to direct attention to the rural poor and the prospect that resources for Chad will be limited, AID's assistance must be focused on the most serious problems in the rural sector. Thus, the food crop sector will be favored. Resource inputs for the livestock sector will be selective, based on the fact that there is heavy grazing pressure in the Sahel, other donors are active in this sector and the population devoted to full time livestock raising is small as compared to those in the crop sector. Because health and education are such important elements in determining the standard of living, we plan to continue our efforts in these two sectors with concentration on rural sector health delivery and education reform problems.

Rural development operations of the AID program will, for the most part, be oriented to specific geographic areas within Chad. Focus will be on selected areas with the Sahelian and southern zones.

It is recognized that goal attainment--indeed any meaningful development in specific geographic zones--will require improvement of critical transportation links. The present distinctly limited capability of the government to maintain its present embryonic communications system has inhibited donor investment in additional major road construction. This has led to the design of a program to create mobile maintenance brigades as a first step in building adequate maintenance. AID also proposes to participate in long-term multi-donor planning for road construction infrastructure to support further economic development.

Although the long-term effect of food aid on prices and incentives to production requires further study, PL 480 assistance has become an important element in AID's program.

Pending further study of the aforementioned issue, we plan to continue providing PL 480 commodities to Chad during the planning period for the following purposes:

1. As part of a multidonor effort to combat a generalized drought or food shortages, and

2. to support village level food-for-work (FFW) and Maternal Child Health (MCH) programs managed by private voluntary organizations, either U.S. or foreign. This approach is a particularly attractive alternative in Chad since it avoids the problems of free distribution. Food is parceled out in small portions in the rural areas. This directly affects nutritional levels, and in the case of FFW, it provides rural employment opportunities and involves the individual in a development activity near his own village. Further, there are currently over twenty private and religious voluntary organizations operating in Chad, many of which could be called upon to implement village-level activities. Over the planning period target-of-opportunity projects are anticipated combining FFW and rural project funds. These programs will be coordinated with WFP and Peace Corps.

Other than Club/CILSS coordination, we foresee little project activity that would involve regional organizations. The only exception would be the Lake Chad Basin Commission. Although the Commission does not have a clear development mandate from its member countries and is not institutionally strong, there is a clear need to coordinate the use of scarce water resources in the basin, and the Commission is the logical organization through which to work. With this in mind, the donor community under the leadership of the UNDP is undertaking a long-term multidonor strategy study to determine the appropriate role the LCBC should play in regional development. Any AID project-related assistance to the LCBC beyond current commitments will be reflective of the results of this study. As an initial step, we can anticipate the need for limited technical assistance to upgrade the institutional capacity of the Commission.

Club/CILSS Considerations

A. General

The Club/CILSS overall strategy for the entire Sahel is "to enable the Sahel countries to insure food self-sufficiency no matter what the climatic contingencies might be, so as to permit an autonomous development of each."1/ This goal is compatible with the whole range of mandates on U.S.

1/ "Rapport de Synthese" of Club/CILSS Working Group, p.1 "Mandat du groupe de travail".

foreign assistance which have been emanating from Congress since 1972, with their emphasis on improving the quality of life of the rural poor. Notwithstanding this hallmark goal, the Club/CILSS strategy calls for developmental interventions on a broad sectoral basis. Analysis of initial Club/CILSS approach to the various sectors (dryland agriculture, irrigated agriculture, livestock, transport, health, human resources, and ecology/environment), however, demonstrates uneven treatment to date. For some sectors, the goals have been reasonably well defined, even quantified. In others, the goals are only expressed in the most general terms, with the recommendation that a detailed study be carried out to provide the basis on which to set realistic objectives. On balance, the Club/CILSS approach provides a useful mechanism within which to consider Chad's development problems.

B. GOC Views on Club/CILSS

The GOC views the Club and CILSS in a positive light with important roles in:

1) increasing donor interest and levels of contribution,

2) developing strategy,

3) donor coordination,

4) integrating Chad-donor development efforts, and

5) as a forum within which to reformulate country programs and projects.

Despite an overall positive attitude about the Club and CILSS, the GOC is skeptical about the ability of donors to coordinate among themselves and about their long-term commitment. The GOC also tends to be skeptical about the implementation of regional approaches to national problems. Because Chad is geographically isolated from other Sahel countries, it feels that a strong emphasis on regional approaches may exclude Chad. GOC was dissatisfied, for example, with OCLALAV, but appears optimistic about the regional crop protection program under CILSS which will have nationally implemented elements.

At present, the GOC is preparing the 1978-1981 National Plan which it feels it can use to facilitate coordination among donors. The first

"installment" of the Plan was released on April 10, 1978 and includes general policy guidelines together with a list of prospective projects totaling $800 million. At this point the guidelines are so general, that virtually any project of any donor would enjoy "high priority".

In a related endeavor, the GOC has responded to a longstanding UNDP suggestion urging more formal coordination of donor efforts. To this end the UNDP has been assisting the GOC for the past year to organize for an eventual donor round table meeting at which donors can provide reactions to GOC planning efforts and engage in dialogue on the subject. It is anticipated that such a meeting will result in the sharpening of priorities and the focusing of external assistance on removal of recognized constraints to development. The GOC, for its part, undoubtedly looks upon the anticipated meeting as a potential pledging forum. Without downgrading these initial positive steps, it is unlikely that the Plan will soon become a definitive tool for near-term development efforts. In the meantime, the GOC is contributing to the formulation of Club/CILSS guidelines, which we feel reflect the priorities of the GOC.

C. Relationship of AID program to Club/CILSS Interventions

In this section the Club/CILSS strategy for each major sector will be summarized. Where appropriate, the GOC views (if articulated) toward each strategy will also be discussed. This will be followed by an examination of how the AID program relates to the strategy.

1. Dryland Agriculture

The Club/CILSS strategy for increasing food production in dryland agriculture in Chad is based on:

(1) Intensification of food production on land that is already ready cotton production in the south, (2) increasing food production in the northern or Sahelian zone of Chad and (3) building research, extension, and statistics capabilities to support on-going and proposed agricultural production activities.

Intensification in the south will be carried out at a higher level of technology than in the north as farmers in the south have for decades

been using fertilizers, pesticides and other modern inputs in cotton production. A more modest level of technical inputs would be the basis for increasing food production in the north, mainly improved seeds and pesticides. The virtual absence of an extension and input delivery system in the Sahel region is a major constraint to increasing food production in the north of Chad.

The Club/CILSS drylands strategy for Chad reflects the extent to which Chad is dependent upon donors not only for financing development projects but also for planning agriculture development activities as well. Without exception, agriculture sector efforts inscribed in the CILSS list are projects proposed to Chad by FED, FAC, or AID. This is perhaps why Chad gives such high priority to various supporting services and especially to staffing out the "Bureau d'Etudes" in its Ministry of Agriculture.

The agricultural development strategy of the GOC emphasizes:

(a) Increasing production to be achieved by introduction of improved cultivation techniques, animal traction, seed improvement and multiplication and better crop protection systems;

(b) Improved processing, preservation and storage to assure that a larger proportion of what is produced reaches poor rural populations;

(c) Improvement of infrastructure to insure equity in the distribution of goods and services and greater access by the rural poor to the increased benefits being generated through development;

(d) Increased effectiveness of governmental institutions in coordinating programs that reach the rural poor.

AID's strategy is reflected in its proposed agricultural sector projects and these conform to the Club/CILSS strategy and that of the GOC. Two projects anticipated to start in FY 78 are: (1) Agricultural Institutional Development and (2) Crop Production Research, Seed Multiplication, Grain Marketing and Storage. Both of these projects are intended to provide support to agricultural institutions and to production programs--a principal theme of the Club/CILSS/GOC strategy. The first project concentrates on strengthening extension, planning and statistical capability. The second

project has as its principal objective developing a technical package of improved seeds, other inputs, and cultural practices for extension to farmers, as well as the development of a more generalized agriculture research system.

As we pointed out in Part B, the typical small farmer needs a package of inputs (techpack) which will allow him to make a quantum jump to a higher income level equilibrium. Logic dictates that the number of farmers that can make this jump is limited by the resources available to the agricultural sector divided by the cost of the techpack. Hence, the critical minimum effort needed to get the agricultural sector moving could be defined in terms of the cost of techpacks.

To establish the cost of a techpack is difficult and would be influenced by economies of scale and other variables, but an order of magnitude can be given. Assuming a cost of $1,500 per family, the present level of foreign assistance to the rural sector ($19 million) together with that of the Ministry of Agriculture (about $3 million annually), if properly coordinated, could finance techpacks for about 14,600 farm families, or only 2 percent of Chad's farm families (assuming 5 persons per family). Translated into total resource terms, to provide a techpack for each farm family would require over a billion dollars a year!

Since such a volume of resource is out of the question for Chad, one is forced to think in terms of manageable projects involving only a fraction of the population. Hence, AID's operating strategy in the rural sector will be to concentrate on helping the Ministry of Agriculture coordinate its own and other donor resources to provide techpacks to a limited number of farm families in the environs of existing and proposed agricultural research stations. An important element in this operating strategy is the coordination of other donor resources and this is why we must concentrate on upgrading the MOA's institutional capacity to plan and to coordinate the <u>total</u> volume of resources available to the sector.

The proposed dryland sector project, Sudano-Sahelian Food Crops, represents the major second generation effort in our dryland strategy. This project derives specifically from the CILSS dryland sector report for Chad and would complement a proposed FED project to increase food production in the north and on-going FED and FAC funded food production efforts in the southern cotton productivity zones.

Chad was included in the original Sahel regional crop protection project, and we anticipate increased Chadian participation within the new CILSS activity. We also hope to integrate SAFGRAD[1/] resources into our agriculture program.

2. Irrigated Agriculture

The Club/CILSS Irrigated Agriculture Working Group envisions the expansion of rice and wheat production in Chad from 52,000 MT in 1976/77 to 92,000 MT by 1982 and up to 143,000 MT by 1990. All of this production is to be developed under some form of water control, ranging from full water control in the northern Sahelian zone, thus, enabling double cropping, to partial water control sufficient for at least one crop annually in the south which would permit extensive development of a low cost, mixed agriculture farming system in this region.

The specific strategy advanced by the Club to reach these production targets within the 1978-82 time period emphasizes: (1) the rehabilitation/intensification of existing irrigated agriculture systems (e.g. Sategui-Deressia and Casier A) to provide gravity irrigation on a seasonal basis; (2) development of intensive double cropped irrigation where it makes economic sense to the national economy and financial sense to the individual farmer; (3) improvements in central and operational and institutional capability to plan and manage the development of irrigated agriculture in Chad; (4) training at all levels; and (5) support for the LCBC to articulate comprehensive water use and regulation plans for the Lake Chad Basin.

GOC goals in the irrigated agriculture sector are essentially the same as those articulated by the Club du Sahel. However, it must be noted that the GOC, given the overall weakness of its agricultural institutional structure, is almost entirely preoccupied with short-term activities with little consideration or staff time being devoted to long-range planning.

The AID strategy in the irrigated agriculture sector is typified by the Lake Chad Irrigated Agriculture project, which addresses key elements of the Club/GOC irrigated agriculture development strategy. A second

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1/ Semi-Arid Food Grain Research and Development

project, less capital intensive in nature, is being considered in light of broad feasibility issues and GOC priorities for donor funding.

The Lake Chad Irrigated Agriculture project is designed to improve the overall management and maintenance capability of SODELAC, a quasi-governmental organization which is charged with development of the "polder" area, covering approximately 60,000 has located along the northeastern shore of Lake Chad. At present Chad imports approximately 10,000 MT of wheat and this is projected to increase to 53,000 tons by the year 2000 unless steps are taken to increase domestic production. The economics of wheat production, given the high inland transportation cost associated with cereal imports, under intensive irrigated agriculture in the polder region looks very promising. While unit costs are presently quite high in the polder area, they are expected to drop as the capabilities of SODELAC improve and the scale of development work in the area increases. At present there are two modern polders under development initially financed with IBRD and FAC funds. The present AID project provides support for activities in these two polders. A third polder covering 800 hectares adjacent to the first two polders should be able to reduce unit costs substantially by capturing certain "externalities" from the first two polders (e.g. utilization of some of the construction equipment used in the IBRD activities). The development of a third polder is consistent with Club/GOC strategy and is under consideration for AID financing. A fourth polder is an active candidate for Arab financing.

The degree of additional AID involvement in the irrigated agricultural sector will depend on the outcome of a comparative study of large and small irrigation schemes and likely site selection to be undertaken as a part of an overall agricultural sector strategy. While possible AID involvement in area specific development schemes other than Bol polders, e.g., Casier A, Sategui-Dressia, etc., has yet to be fully weighed, particular attention will be directed toward the possible development of less capital intensive irrigation projects. In this regard, USAID would hope to encourage the development of small irrigated perimeters along the Logone and Chari rivers. Initial experience with a small irrigated perimeter is encouraging, with per hectare costs as low as $2,700 being realized.

3. Livestock

Four major activities and several complementary projects make up the Club/CILSS livestock sector program. The four activities are:

1. Improvement of pastoral land use in the region of West Batha and Kanem;

2. Association of livestock and agriculture in the mixed farming area of Southern Chad;

3. Training of service personnel and producers through support of the School for Livestock Technicians (I.A.T.E.), retraining for existing livestock cadres, and enlarging the training role of the Herder Training Center in Massakory in relation to the livestock development project being planned; and

4. Assistance to a mixed public-private enterprise (Société Tchadienne d'Exploitation des Ressources Animales) which has just been created as a monopoly for the exportation of meat and to manage export of live animals through allocation of export licenses among its private shareholders.

The principal complementary actions include assistance to the animal production modernization center (milk, cheese, cattle feed, artificial insemination), modernization of the laboratory at Farcha, particularly for vaccine production, improvement of the slaughterhouse in N'Djamena and scholarships and training abroad of senior personnel and for specialization of senior personnel, as well as for certain technical training.

However, the Club/CILSS approach fails to consider or considers inadequately the following:

1. The most important constraint not discussed in the Club strategies was land use and/or land ownership within each country. Improvement of the range resources can only be realized in conjunction with a well-established and maintained land use policy.

2. The role of women in livestock production was not considered by the Club strategies.

3. Customs, religions and past historical patterns of transhumance among the herders and livestock producers is a constraint not directly approached in the Club strategies. As example, the historical free

movement of cattle and herders affects the goals of establishing improved range forage. The sale of cattle and development of a market system is affected by the custom of utilizing the cattle herds as a walking bank account.

AID livestock projects should address these constraints. This can be effectively done only in the context of a coordinated multidonor approach to livestock sector development. This coordination is not now present in Chad, and the GOC has no well defined goals or plans for the livestock sector. The proposed CILSS national committee working closely with the Plan could facilitate coordination of donor financing of livestock sector activity. On the other hand, local representatives of other donor agencies appear to be uninformed about Club/CILSS philosophy or sector strategies, and this impedes multidonor financing of projects that are comprehensive enough to implement the overall Club strategy.

AID livestock programs in Chad should concentrate on the following objectives:

(a) strengthen the planning and management capacities of the GOC livestock service through training and technical assistance and encourage the broadening of GOC program perspectives to include concepts of range management, animal husbandry and livestock extension;

(b) develop ecologically sound technical packages which can increase the productive efficiency and incomes of traditional herders;

(c) increase the domestic supply of meat through the efficient production of small ruminants;

(d) study and apply practical interventions which can conserve or improve the ecological status of the Sahelian and Sudanian rangeland;

(e) encourage financial self-sufficiency in the Livestock Service;

(f) integrate livestock development activities with food crop activities in the cotton producing zone.

The ongoing, first-generation Chad Range and Livestock project recognizes these requirements and lays the groundwork for future endeavor.

Major activity along these lines will be the subject of a second generation project. Also, various range management interventions are planned for the Assale area in Chad (as well as the similar activities in the Serbewel and Borno regions of Cameroon and Nigeria) within the context of a multi-donor regional livestock project with the LCBC.

4. Transportation

The strategy articulated by the Club/CILSS Transport Working Group is to identify those transportation projects which will complement the achievement of the Club goal of agricultural development and establish a timetable for their orderly completion. The following classification was adopted:

a) Over the short-term (1977-82) emphasis will be placed on road rebuilding and maintenance.

b) Over the medium term (1983-90) attention will be directed towards new highway construction in accordance with national transportation plans.

c) Over the longer term (1990 and beyond) a master transportation plan for the entire Sahel region will be developed.

In summary, the working group strategy is first to halt the deterioration of the existing road system and then slowly to devote attention to the development of national transportation nets and their integration into a Sahel-wide highway network.

Although items a) and b) might well be addressed simultaneously, the Club/CILSS strategy summarized above fits into the guidelines of the GOC development plan. These guidelines include placing emphasis on improving transport infrastructure in order to reduce costs and enhance both the profitability of other investments and the success of other development projects.

With respect to the compatibility of Club development strategy with that of AID, the analysis in Part B clearly recognizes the constraints which the inadequate road network imposes upon Chad's development potential. The AID approach will be to begin immediately a program of road maintenance followed by a longer-term construction program.

a) Road Maintenance:

The Chad Government under IBRD funding has commissioned a detailed report on improving the road maintenance system in Chad through a multi-donor program to deal with all the constraints on road maintenance. AID will participate in this program which the Transport Working Group of the Club regards as a potential model for multidonor participation in other Sahel countries.

The goal of this multidonor project is to facilitate access to Chad's productive southern and eastern regions. This will enable some 1.9 million people in these areas to participate in ongoing and planned public sector development programs. In addition the project will make it possible for the small farmer to receive inputs and market his produce on a year-round basis. The planned output of the project is the development of an effective road maintenance capability within Chad's Public Works Department. This will be achieved by the equipping and training of mobile maintenance brigades which will be maintaining about 5,200 km of rural roads annually.

This project ($28.2 million) is of sufficient size and scope to affect significantly the attainment of the Club/CILSS sector goal.

b) Road Construction

Major road construction in Chad is best approached via a multidonor consortium since no one donor could be expected to cover the entire costs of relatively short roads. For example, the 200 km Bongor-Lai road will cost upward to $100 million. It is proposed that AID consider participating in consortium activity for the construction of major road links impinging upon agriculture production and marketing development. It is suggested that an initial endeavor along these lines might be taken as early as FY 79 with limited participation in a group to construct the 305 km Moundou-Guidjiba road (total cost $75 million). In FY 80 and beyond we foresee participation in other major road construction efforts.

5. Health

The health strategy developed by the Club du Sahel focuses on the major weaknesses of all Sahelian health services: their inability to provide

adequate attention to the majority of the population living outside the major provincial town and urban areas. Resources do not exist to expand significantly and still maintain the present public clinic mode of rural health service delivery.

The solution seems to be to establish a new or extended, village-based system, staffed by unpaid members of the community, which would offer a variety of preventive, and very basic curative services. Through such a structure, the rural farm or herder family might have access to nutrition education, health care services, and this will be achieved without adding additional cadre with associated recurrent annual costs.

The strategy also recommends two additional activities to complement the development of the rural health system. The first is the development of national health planning capabilities in each country. The second is the creation of a demographic data collection and analysis capability.

The AID health strategy for Chad has exactly the same focus as that of the Health Sector Analysis of Club du Sahel. The GOC, recognizing its basic health system deficiencies, requested AID assistance in developing a national health planning division and a village-based rural health system.

Project development in this regard is well under way, and USAID believes the strategy adopted should benefit from increased technical and financial resources anticipated from various donors. A four-year project to establish a national health planning unit in the Ministry of Health is being implemented as part of the bilateral AID program. It brings together a team of four U.S. technicians and six Chadian counterparts to establish the new planning unit, to tackle the problems of poor data and management practices, and to assist the MOH in drawing up comprehensive national health plans and projects. In addition the development of a national rural health delivery system is planned. Such a system would emphasize paramedical training and improved supervision and material support for the repair and equipment of existing rural health facilities. In addition, a basic village health model is part of the plans for one major agricultural development project, i.e. the Lake Chad Irrigated Agriculture project, in the Bol polder area. Because of the generally inadequate nature of the rural water supply, characterized by polluted, disease-inflicting waters, the Peace Corps, operating with AID funds provided

through the now completed drought relief R&R program, has developed considerable experience in Chad with the drilling and maintenance of an AID-designed small-bore well and pumping system. This activity has been expanded into a full-scale project with multiyear funding that will allow Peace Corps to program the assignment of volunteers on an effective basis. This project is a major focus of AID/Peace Corps collaboration.

6. Human Resources

The Club/CILSS strategy in the human resources sector has not been clearly defined. Several communications have been received regarding the goals and strategies of the Human Resources Development sector of the SDP program. Each has been reasonably clear and indicative of the current level of thinking at the time it was produced. It is evident that progress in specifying and prioritizing objectives and strategies, however, has not been as rapid as hoped.

The effort seems to have been directed at determining specific actions which could be coordinated through a regional administrative structure. Three constraints are working against this effort.

1) Each country is naturally concerned primarily with its own needs;

2) The answers to questions of which techniques in human resources and implementation are most applicable are not readily available, thus each country must develop its own approach, and

3) Many differences in government styles and phylosophies exist in Francophone Africa, making an agreement on a common program exceedingly difficult.

USAID would suggest altering the type of goals sought by the working group. Rather than attempt to identify programs and to define technical strategies which could be applied throughout the Sahel region, the regional effort could be confined to a more modest coordinating and technical backstopping function, such as:

1) sponsoring regional conferences in any given field where information can be shared on the different approaches used, including their problems and progress, and where proposals on new techniques can be exposed and discussed,

2) providing services to member country technicians, such as an inventory of resources (references, specialists, and institutions), which can be used toward solution of country problems, and

3) establishing specialized working groups to work on common problems recommended by other countries, such as curriculum development in education reform, government pricing policies for domestic production, techniques of improving information flow to policy makers, etc.

In the absence of a clearly defined Club strategy, AID is moving ahead with a bilateral project. The AID human resources development (HRD) project will assist the National Institute of Educational Sciences (INSE) to strengthen the planning and evaluation of the Chadian primary school system reform with special emphasis on the development of community education programs for farmers and women. This project will also foster rural extension of adult education into various villages under provisions of the Chadian educational reform program, the purpose of which is to spread functional literacy and encourage self-education beyond the framework of formal educational institutions.

Another important component of this project is the management activity that will attempt to encourage application of management techniques learned in formal seminars to specific field actions funded under independent technical projects. In this way, the impact of central management training on the actual conduct of other project activities will be the measure of success of the HRD project.

USAID is beginning its second year of participation in the African Manpower Development Program (AMDP) and we are working with the GOC scholarship services to develop a continuing participant training program complementary to other projects within the Chad program.

USAID also has an active women-in-development (WID) program financed with regional funds. Two on-going projects involve nutritional and sanitary training and cottage industries. A third activity under development is directed toward agricultural training for women. USAID plans to increase our WID program during the planning period.

7. Ecology and Environment

The Club's Ecology and Environment Working Group has proposed a forestry strategy having the following objectives:

a) Supply the needs for combustible wood and construction timber;

b) forage protection and management;

c) improved agricultural production factors; and

d) protection and appropriate exploitation of wildlife.

AID program opportunities in forestry and ecology conservation, like those in other sectors, are constrained by the limited human resource base of the Forestry Service and by severe GOC financial limitations. Eventual AID-financed Club programs would , in addition to making concrete environmental interventions, concentrate on improving the planning, management and extension capacity of the Forestry Service and on collecting and analyzing data related to ecological degradation in Chad. Currently AID is working with private voluntary organizations, such as CARE, other donors, the Peace Corps, and the Forestry Service to identify pilot, village-level approaches to forestry and natural resources conservation and amelioration with maximum local participation in project planning and implementation. It is anticipated that activities will be eventually designed and carried out within the context of a national activity as part of a regional project under the auspices of the Club.

Conclusions from Club/CILSS/AID Strategy Discussion

From Chad's point of view the Club/CILSS approach offers two potential advantages: a degree of development planning which the GOC cannot provide alone and a greater volume of resources for Sahel countries. On closer analysis, however, it appears that these advantages are dependent upon the donors who select their own priorities and must exercise the discipline necessary to coordinate their individual efforts. Because Chad has no domestic resources to implement a national plan, it must accept the approach of the donors. Since the GOC is not about

to turn down more resources, it can be expected to collaborate with any scheme that is likely to provide additional developmental resources.

Other Donor Activities in Chad

The role and program of other donors in Chad was presented in detail in TOAID A-16, dated July 29, 1977. This report noted that in 1976 (data for 1977 are not yet available) Chad received about $93 million in foreign assistance (excluding military). Of this total about $30 million was for budget support and food aid leaving $63 million for project-related assistance. Of this amount about $19 million, or about 30 percent, was directed toward the rural sector. The majority of donor assistance to the rural sector, 75 percent, takes the form of technical assistance. Unfortunately, this assistance is poorly coordinated and widely dispersed. However, even if complete coordination were possible, it is unlikely that $19 million per year would have much of an impact on the 3.4 million living in the rural sector. This would only represent a per capita expenditure of only $5.50.

The second most important sector receiving foreign assistance is education ($17.6 million) which is almost entirely technical assistance in the form of teachers. The industrial sector is next ($6.7 million--mostly sugar and cotton processing facilities) followed by the health sector ($5.0 million--virtually all in the form of doctors and health personnel).

During 1976 there were about 900 foreign technicians working in Chad. France provided about 520, the Russians 74, and the UN system about 62. The U.S. provided 40 Peace Corps volunteers and about 20 AID technicians. The religiously affiliated (Catholic and Protestant) donors each accounted for about 50 technicians and the Chinese for about 40. Canada and Switzerland each provided about 20 technicians. By sector of activity, about half of the foreign technicians were in education, about 170 in rural development and 120 in health.

Training abroad is an important component of foreign assistance. In 1976 there were about 900 Chadians studying in 30 different countries. In order of importance, these persons were specializing in education, law, administration and health. About 46 percent were being trained for managerial and director level positions, 43 percent for technical and specialized fields, and about 11 percent for employment as skilled workers.

In conclusion, foreign economic/social assistance flows to Chad are large--equivalent to about one quarter of a year's GNP. They are heavily concentrated in rural development but have not yet had much of an impact on production. In general, donor assistance is widely scattered, even within sectors, and there is no effective GOC mechanism to coordinate donor assistance.

With respect to limitations imposed on our programs by legislation or other factors which restrict USAID from pursuing its development goals, in Chad there are two problems which keep arising: cotton and insecticides. Half of Chad's population grows cotton as a cash crop. Thus, any effort in the cotton area, which is also the major food growing area, will lead to the criticism that USAID is encouraging cotton production. The world market value of Chad's 1976-77 cotton crop is about $73 million (54,000 metric tons at $1.35 per kilo[a/]--i.e. 60 cents/pound). This is not large by international standards--an amount equivalent to less than 4 percent of the U.S. 1976 production of about $2 billion. For Chad, and the Sahel in general, an exception might be made to the U.S. policy of not encouraging cotton production.

U.S. legislation which prohibits AID funding for most of the effective insecticides may limit our effectiveness. It is estimated that each year much (up to 20%) of Chad's potential grain crop is lost to insects and birds. Insecticides played a major role in the agricultural revolution in the U.S., and the GOC would like to provide their farmers with similar inputs.

Part E. Funding Levels

On the basis of the analysis in the paper, the following resource requirements are envisioned annually over the 1981-85 planning period. For comparisons the FY 79 and FY 80 proposed levels are also provided:

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a/ Of this the Chadian farmer receives 18¢ per kilo!

	Requested	Proposed	Planned
	1979	1980	1981-1985
Sector			
Agriculture:			
Rainfed	3,900	6,900	3,500
Irrigated	1,000	4,500	3,000
Livestock	930	830	1,500
Infrastructure:			
Road Construction	2,000	7,000	15,000
Road Maintenance	1,900	1,900	2,000
Health	2,600	2,000	1,000
Human Resources	780	1,570	1,500
Targets of Opportunity	180	910	1,000
Total	13,290	25,650	28,500

Comments on FY 80 levels:

The proposed FY 80 level reflects an emphasis on the agriculture sector. Irrigated agriculture activities will be limited to a proposed expansion of the Bol Polders project ($4.5 million). Of the $6.9 million for rainfed agriculture only $1.5 million will be devoted to new production activity with the remainder required for ongoing first generation projects. The $1.5 million, when combined with the GOC and other donor resources (estimated to be $5 million and $25 million, respectively) will provide technical inputs for about 21,000 farm families--less than 3 percent of the estimated 1981 total of 796,000. While this will still only be a small minority of the total, it is unrealistic to think that the combination of the GOC's institutional capacity and resource availabilities will permit the undertaking of anything but a modest program in the rainfed agriculture sector. Planned activities in the livestock sector will revolve around providing technical assistance to the livestock training center at Massakory which will be fully operational by 1981. A FY 79 follow-on project will concentrate on encouraging the adoption of ecologically sound herding

practices and increasing cash incomes of herders by accelerating offtake. It is anticipated that appropriate experience will be gained from this pilot activity to mount a large-scale livestock farm systems activity in the south later in the planning period. This activity would involve a team feeding program and removal of animals for slaughter or training as draft animals. The desired effect is to reduce grazing pressure in the Sahel.

The resources for infrastructure assume an ongoing program with the Ministry of Transport to continue maintenance activities begun under the CILSS-sponsored multi-donor program currently being designed (Chad Road Maintenance). Regular maintenance will be carried out on roads which influence areas of population density and agriculture production potential. New road construction will include an AID contribution of $2 million to Moundou-Guidjiba project in FY 79, and a $7.0 million input in FY 80 for other major road construction.

Resources for education will be limited to technical assistance designed to attack the critical human capital constraint discussed in Part B, while health activities will be concentrated on low-cost village delivery and referral systems in the areas where agricultural programs are being undertaken. Funds for targets of opportunity are included to initiate relatively small programs which either: a) impact directly on the target group (e.g. small scale irrigation plans, village level storage, rural, non-formal education, etc.) or, b) are of an innovative nature of pilot programs which can lower the cost or increase the effectiveness of techpacks (e.g. credit unions, solar and wind powered pumps, draft animal utilization, small ruminant production, etc.) Because funding for targets of opportunity is frequently drawn from AID regional programs (e.g. Women in Development, PVO's) actual outlays in FY 79 and FY 80 are expected to be somewhat higher than can be described at present.

Planning levels, 1981-1985

If funds become available, USAID has identified two specific areas which we feel have great potential over the 1981-1985 planning period. The first and most essential option is infrastructure development, followed by area specific irrigated agriculture development.

a) Infrastructure:

The first alternative, at $15 million per year, would allow AID to help participate along with other donors in financing basic heavy infrastructure, particularly all-weather roads so badly needed in Chad.

This would be the most significant increase in funding and could come about if AID reverses its present position with respect to the bilateral financing of large infrastructure projects. In Latin America during the early days of the Alliance for Progress large sums were devoted to major road projects which provided the basic transport infrastructure which in turn supported follow-on development projects. A similar approach appears appropriate for the Sahel to begin late in the planning period. By 1983/84 the Club/CILSS-sponsored Road Maintenance project will be in high gear and will be able to provide the maintenance on newly constructed roads. As was the case in Latin America, such roads would be constructed by foreign companies and would be turn-key projects (thus minimizing the use of scarce human and financial resources). Although large, such projects would be easy to implement via contractors and require no increase in the official American presence in Chad.

With this optional funding level the beneficiary population would be the small farmers and rural population of Chad (90 percent of the population). The geographic regions would be the southern and western portions of Chad because of production and marketing potentials. The impact of this option could be tremendous at all levels of the Chadian economy, and we foresee no major constraints to an accelerated road construction program.

b) Irrigated agriculture:

The second area of expansion is in irrigated agriculture. Irrigation is seen as the only viable alternative if Chad is to move closer to food self-sufficiency. While the bulk of the population is involved in the rainfed subsector, assistance to this population in the form of improved seeds, fertilizers and techniques is of no avail if there is no rain, and in Chad drought conditions are a way of life. Thus, to provide a dependable margin of food production, increased attention must be directed at the irrigated agricultural sector.

Two options present themselves. The first is the relatively large capital intensive irrigation project typified by permanent water control works and high per hectare cost (e.g. Bol Polders, Casier A and Sategui-Deressia). The second is the relatively small labor intensive project constructed mostly from local inputs located near permanent water sources (e.g. SAWS irrigated agriculture). Each approach has some attractive features: The larger projects can typically produce sustained high yields, can use advanced techniques, and can almost be considered "food factories". The disadvantages include high initial construction costs and advanced management - two very scarce inputs for Chad. The principal advantage of the smaller irrigated perimeters is their low cost, and reduced management requirements which enhances their replicability. Furthermore, labor-intensive irrigation schemes appear to promise a broader, if less rapid, involvement or rural peasantry in development activities for each AID dollar invested, than would capital intensive scheme. However, assuring the involvment of local population in such projects is still the most challenging aspect of the grass-roots approach.

While these approaches are not mutually exclusive, AID should concentrate on the approach which makes the most economic sense and at the same time responds to the Congressional Mandate to the extent feasible. Thus, as part of an agricultural sector study to be conducted in FY 1979 (under the recently approved Agricultural Institutional Development Project) a comparative analysis will be conducted to determine the most appropriate approach.