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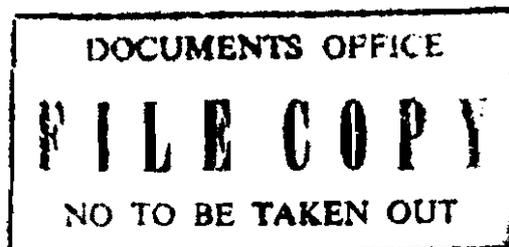
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PROBLEMS OF PLAN IMPLEMENTATION

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## PROBLEMS OF PLAN IMPLEMENTATION

## 1. SUDAN ECONOMY : GENERAL FEATURES

The Sudan has an area of one million square miles and is the largest country in Africa. Much of the land is unoccupied. The soils of the Sudan are sandy in the Northern third of the country, clay in the central third and lateritic in the Southern third. According to the 1955/56 Census the population totalled 10.4 millions. With a rate of increase of 2.8 per cent, the population at present would be about 14 millions.

The economy of the Sudan is predominantly agricultural and pastoral with land and water as the main sources of production and income. The majority of the people are either peasants or animal breeders. Crops, livestock and animal products dominate the export trade, while manufactured articles form a substantial part of imports. Industry is both small-scale and relatively underdeveloped.

Though underdeveloped, the Sudan, in some respects, exhibits different features from several similarly placed nations. Land is abundant and there is no population pressure on presently developed land. At present, probably no more than 5 per cent of the potentially cultivable land is under cultivation. In other words, neither at present nor in the foreseeable future, is land likely to be a limiting factor to the agricultural or pastoral, and therefore general, development of the country.

The structure of economic activities in the Sudan may best be viewed as comprising two economies. There is, on the one hand, the age-old subsistence (or semi-subsistence) economy where production for the market plays a small part and where most of the population is engaged in the rain-fed cultivation of food crops using primitive methods and techniques, the ubiquitous man with the hoe is at the centre of the picture. On the other hand, there is the money economy devoted to the production of food and cash crops, notably cotton and groundnuts, with modern methods of irrigation and tillage. But the greater part of the economy's utilized land and labour

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resources are devoted to subsistence activities. Of the 8 to 9 million acres under cultivation in a typical year, five to six are devoted to rain crop production and the majority of all crops produced in any one year are rain grown. The rainlands supply not only their own inhabitants but also the growing urban centres with their staple foods. The circular flow of income in the subsistence sector is at a primitive level. As for the money economy, the expansion and contraction of income is altogether too dependent on the state of the world markets for agricultural raw materials. As a result of the dependence of the money sector on the export proceeds of a few agricultural commodities - notably cotton - the Sudan is prone to periodic violent fluctuations in economic activity.

Export earnings largely constitute money income for many producers and it is the largest money item for the modern sector as the whole. Earnings from export trade are spent on imports of manufactured consumer and capital goods. Given the tax structure of the country, export earnings and duties constitute the main source of government revenue and, therefore, of budgetary surpluses which are the country's chief source of savings.

The government of Sudan has a prominent position in the money economy. The government, aside from its day to day administrative and financial efforts, owns the majority of modern capital establishments and is the chief promoter of and participant in large-scale undertakings such as the Gezira and the sugar industry. Not only in the fields where marginal returns on capital are low, such as communications and public utilities, is the government the chief investor, it also plays a part in the investment and management of cotton ginning, building and engineering industries. It exercises a monopoly on the imports of sugar and controls the bulk of cotton sales overseas. And since the war, successive development programmes have further expanded the scope of the public sector.

Private enterprise, though of a relatively more recent origin, prevails in secondary industry, in internal and foreign trade and in traditional handicrafts and household industries. In agriculture, private pump schemes which account for about one-third of total cotton production,

have been the main element in the rapid expansion of cotton output following the Korean boom. Production of other cash crops such as oil seeds, particularly groundnuts, whose production has been expanding a great deal in recent years, is largely in private hands. Road transport and road haulage is also entirely in the hands of private operators. The majority of secondary industries that have been established in the past ten years are entirely privately owned and operated.

## 2. ECONOMIC PLANNING IN THE SUDAN

Public action in one form or another to bring about economic development in the Sudan is more than half a century old. But only in recent years has development planning attained some level of sophistication. Development effort has come a long way from the days of ad hoc allocations for capital expenditures. Using the relative sophistication of the planning process as criterion, one may distinguish three stages in the development of the country: The pre-1946 period, 1946-60 and the post-1960 period.

During the pre-1946 period, allocations for capital expenditures were done on purely ad hoc basis. The initiation of development projects was left almost entirely to the heads of Departments and the provincial administration. The projects were submitted to the Department of Finance for its opinions and depending on the size and importance of the projects, decisions on their worthiness were taken either by the Financial Secretary or the Governor General in consultation with his council. This early period was perhaps best distinguished, from a purely organizational point of view, by the absence of any special committee or body of any form concerned primarily with development or entrusted with the prime function of scrutinizing projects, investigating their feasibility or determining priorities. Projects submitted by different departments were studied by officials as part of their day to day work. There was no separate budget to cater for development expenditure as distinct from current expenditure.

The 1946-60 period, was however, different from the pre-war years. For the first time development allocations were divorced from the routine day to day decisions. Five-year programmes for public expenditure were

produced with clearly marked priorities. The sharply contrasts with the earlier practice of selecting one, sometimes several projects, for financing in relative isolation from other projects. The period saw two formal public development programmes : 1946-51 and 1951-56. After 1956, the year that marked the independence of the country, and because of the uncertainty of available financial resources the government resorted to year by year programming. In retrospect these yearly programmes can conveniently be grouped and called the 1957-60 programme. From an organizational point of view and for the first time in the history of the country, a new branch in the then Department of Finance was created in 1950 to be responsible for drawing up and supervising the implementation of these public sector development programme.

The post-1960 period is entirely dominated by the Ten-Year Plan for Social and Economic Development 1961/62 - 1970/71 which is an exercise that is totally different from anything that has been tried so far. It is an attempt at comprehensive planning and as such includes projections for the private and public sectors as well as an attempt at projecting exports, imports and the balance of payments. Compared to earlier efforts, it is different in the concept and technique of planning in that it is actually based on an aggregate model of the economy and in the attempts of the planners to estimate rather than calculate and use capital output ratios. It is different from past development efforts in the allocation of resources and in the sources of capital. From an organizational point of view, the Ten-Year Plan outlines the administrative and organizational set up of the planning authority and provides for the different bodies - political and technical - that will be responsible for preparation, up-dating, implementation and follow-up of the Plan.

It seems clear, however, that future planning in the country will be greatly affected by the Ten-Year Plan in that planning will, in the future, tend to become more and more comprehensive. The days of the projects for public capital expenditure seem to be over. It is because of this that it becomes absolutely essential to study the shortcomings of the planning process as exhibited by the experience with the Ten-Year Plan. It is also

because of this that comments in this short paper will be confined to the experience of the Ten-Year Plan to the exclusion of earlier planning efforts.

### 3. THE TEN-YEAR PLAN

#### (a) Economic Performance

The Plan was conceived of in aggregate terms. All projections are aggregate projections for income, population, exports and imports. No effort was made in the Plan to break down these aggregates into regional figures and no attempt was made in the Plan to include regional or local programmes. This being the case, plan performance can only be judged at the aggregate level. The first point to note is that in terms of overall aggregates, the growth of output was close to the plan levels for the first five years 1961/62 - 1965/66.

	<u>Plan Target</u> <u>Per Year</u> Per cent	<u>Actual</u> <u>Per Year</u> Per cent
Growth of GDP (constant prices)	4.8	4.5

The Appendix gives yearly figures for GDP (at factor cost), population projections, per capita incomes and rates of growth of GDP as compared with the Plan.

On the face of it, the achievement of such rates of growth which fall just short of the plan targets would be considered quite satisfactory. Yet these growth rates were achieved only through the use of more of the country's scarce resources than was ever envisaged in the Plan. This naturally led to quite a rapid deterioration in the ability of the government to reach investment targets in the years following 1965. It is feared that the effects of this will manifest themselves in reduced growth rates of GDP for the second half of the Ten-Year Plan.

The real cost at which these comparatively high overall rates of growth were achieved is indicated by the following facts. The public sector has incurred overall cash deficits in every single year since the Plan began.

This resulted in severe pressures on the domestic cash resources and foreign exchange reserves. Between June 1962 and June 1966 the liquid position of the public sector deteriorated by an amount of £S 66.5 millions. It seems that the following were the three principal reasons responsible for this outcome :

1. Public investments during the five years exceeded Plan projections by some £S 37 millions. Total public sector investment in the first half of the Plan totalled £S 216 millions, against a plan figure of £S 179 millions - though distribution by sector was more or less in line with the Plan.
2. Public sector savings available for financing of fixed investment were some £S 25 millions short of the Plan anticipation.
3. Net external financing for the public sector was some £S 20 millions less than the plan target.

The increase in public sector investment were due to two main reasons: (a) underestimation of the costs of certain inputs and (b) the speeding up of the execution of certain programmes at higher costs.

It should be pointed out, though, that no part of the increase in public investment was due to additional projects being added to the Plan.

These deficits in public sector transactions were reflected in the balance of payments and the level of free foreign exchange reserves. These reserves deteriorated by some £S 45 millions in the first five years as compared with a plan projection of a £S 6 millions deterioration foreseen over the entire ten-year period.

The Plan has stipulated that public sector investments were to be financed by savings of the government and public entities and by a net inflow of foreign loans and grants. In other words, there was to be no Central Bank financing of public sector expenditures. But in view of the rapid deterioration of the cash position of the public sector, the government progressively resorted to deficit financing through the Central Bank. As a result the volume of money in circulation almost doubled over the past

five years from LS 43 millions in June 1961 to LS 77 millions in June 1966. An occasional deficit may be considered as a deviation from the trend but persistent cash deficit financed through the Central Bank in this fashion is clearly contrary to plan intentions.

The above facts and figures probably point to two of the most fundamental weaknesses of the Plan. First, it is obvious that not enough work was done in the preparation of the individual projects so much so that cost estimates fell far short of the actual costs of the projects. The second point is the lack of a proper and efficiently functioning planning authority. Such a planning agency would have spotted important deviation from the plan targets and made the necessary corrections before much damage was done. Actually the planning organization that was devised as part of the Plan never got off the ground with the result that there was a total failure to adjust plan projections to the actual situation. Equally serious is the total failure to revise the Plan at the midstream - a revision that was already envisaged and provided for in the Plan itself and still intended.

(b) The Administrative Set Up

Towards the end of the 1950's, because of independence and enhanced by rising expectations, it became clear that there was a need to reorganize the system of development planning since the magnitude of development expenditure had increased considerably and because there was a growing need for a better preparation and review of programmes and projects. Coupled with this was the urge to facilitate the contribution of the private sector to economic development and to co-ordinate its efforts with those of the public sector. The Council of Ministers, in February 1961, approved a new organization for development planning.

Essentially, this was a four-tier set up with an Economic Council at the top followed by a Development Committee, a National Technical Planning Committee and an Economic Planning Secretariat. On the face of it, this was too cumbersome a set up for efficient working. It is also to be noted that the functions and duties of the different tiers were not clearly spelt out. This organization did not provide for the essential links with the operating

ministries responsible not only for the study and preparation of the different projects but also for the execution of those projects. But this whole organization did not get off the ground and as a result the country was left with no effective body - other than the Planning Secretariat in the Ministry of Finance - to take the important decisions regarding the Plan and to follow up its performance. No effective planning authority existed to see that the projected revision of the Plan was undertaken. The Planning Secretariat, suffering, as it does, from shortages of trained manpower, was in no position to carry out the work of the whole planning agency.

The vacuum created by the failure of the planning agency to come to life necessarily resulted in delays and inefficiencies in the Plan implementation. In many cases even the agencies that were to carry out the Plan or to administer the projects after their completion were not established. Agricultural development affords a few examples of this. Although the Plan allocated a major share of public investment to agriculture, there was no provision in the Plan for the creation of the agencies that will carry out the execution of those projects. It was seven years after the initiation of the Plan that the government became aware that there is a need to create independent authorities either to administer the new schemes or to carry on with the development work needed. The year 1967 witnessed the creation of four independent corporations to be entrusted with this work:

1. The Mechanized Farming Corporation which is to be responsible for the development of the rainlands in the Sudan. The Plan specifies the development of 800,000 acres of rainland in the country.
2. Public Agricultural Production Corporation which is to be responsible for the administration of all government agricultural schemes.
3. Agricultural Development Corporation which is to be set up soon.
4. Rural Water and Development Corporation responsible for providing water and services in the rainland areas.

By the middle of 1966, an effort was being made to deal with the general weakness and ineffectiveness of the planning process. A new

planning organization was created. Essentially, this new organization consists of a Ministerial Committee for policy purposes and five sector panels : economic policy panel, agricultural panel, a panel for transport and distribution, an industrial panel and a social services panel. There are to be planning and implementation cells in each of the ministries and agencies responsible for planning work. Regional Councils are to act as planning cells for the different regions, while the Planning Secretariat of the Ministry of Finance and Economics, after it has been strengthened, is to provide for the technical aspects of the plan and to co-ordinate the work of the different panels and planning cells. It is to be hoped that this new set up will go some way towards curing the shortcomings of the present system.

Yet the question of personnel training has, so far, received very little attention. It is needless to point out that trained manpower both in the Planning Secretariat and in the operating units is in severe short supply. Training is usually thought of in terms of academic training which means a first degree in economics or some related subject and in terms of a masters or Ph.D. degree obtained from universities either at home or abroad. Some officials are sent to the World Bank Development Centre or IDEP (Dakar). While this is, in general, highly commendable, it is usually done to the exclusion of on-the-job training. This is a sphere that is totally neglected in spite of the well known fact that it is from colleagues and superiors that a fresh employee ultimately acquires competence in his profession. Academic training that develops critical ability is, to be sure, a pre-requisite, but no amount of academic training will substitute for on-the-job training where, actually, finish and competence in decision-making and in directing staff are acquired after years of supervised control.

Expatriate staff is a valuable source of training for the local counterparts. For some reason or other full advantage has not been taken of this training source.

#### 4. PROJECT IDENTIFICATION METHODS

In general economic analysis throws a great deal of light on the question of whether an investment project is worth undertaking in view of the alternative uses of the resources involved. To do this effectively, it is absolutely necessary that all aspects of a project - economic, technical, administrative and financial - are to be thoroughly investigated.

Yet in practice the role of economic analysis may be considerably constrained by other elements in the situation. In some cases no more than crude analysis may be possible because of the lack of information, time or personnel to carry out the task. Such crude analysis might be satisfactory in the context of a particular case where alternatives are generally limited. In other cases the availability of the necessary information may be such as to make elaborate treatment both possible and desirable.

As has already been pointed out, the role of economic analysis is to determine the desirability of a proposed investment project in relation to alternatives. Usually, desirability of an investment project is measured by the rate of return on capital. To measure the rate of return on capital it is necessary to calculate the real values of the costs incurred and benefits that accrue from a specific project. This is partly a question of what items to include under costs and benefits, and partly a question of the valuation of these cost and benefit items. It is characteristic of most underdeveloped countries that market prices do not usually reflect relative scarcities of the resources of the country: market prices are usually distorted by widespread monopolistic market structures and practices, foreign exchange is undervalued, the going wage rate does not reflect the opportunity cost of labour etc. In such cases, cost and benefit items are to be evaluated at "shadow prices" - that is theoretical prices that attempt to put more appropriate valuations on inputs and outputs from the national point of view - for the purpose of calculating the economic costs and benefits of the project.

Once a decision is made on those aspects, then the expected benefits and costs are compared and the rate of return on investment is calculated.

At present one of two methods of calculation is used. The first is the discounted cash flow method which yields the internal rate of return for the project. The second is the present worth method. In practice both methods should provide the same answers so long as the same rate of interest is used. Like other prices, the rate of interest used should reflect the real cost of capital in the economy - a shadow rate of interest rather than a market rate of interest.

The question arises, then, of what methods were used for project identification in the Ten-Year Plan. As far as we can discover, no economic evaluation, in the sense of the above paragraphs, was really undertaken for any of the major projects included in the Plan. Since all the major projects were irrigation works, only the technical (engineering) evaluation was made by the consulting firms and the projects concerned were found to be technically feasible. In certain cases this technical evaluation was followed by a very crude analysis of the economic aspects of the projects. The result of the failure to appraise all aspects of the projects and to ask the relevant questions is manifest in the fact that full utilization of the major projects will be delayed for a period of seven to eight years. This is particularly true of irrigation projects. As a result, and since at least one of the two large dams has been financed out of an IBRD loan, the country will have to face the added burden of servicing the loan beginning in 1967, long before the effect of the dam on the productive and foreign exchange earning capacity of the country materializes. If some form of cost benefit analysis was undertaken before the projects were decided upon, many of the subsequent errors would have been avoided.

It is partly because of this and partly because of the insistence of the lending agencies that more widespread use is being made, at the present, of cost benefit analysis. This is a comparatively recent development and is the current practice in project identification both by the consulting firms employed by the government and by the government's own planning staff. But current practice, in spite of this welcomed development, leaves much to be desired in the sense that since resources have alternative uses, cost-benefit ratios need to be calculated and compared for a wide range of projects. There

is also need for a decision-making mechanism that is wider than the limited circle of the civil service, if an informed decision is to be made on the basis of cost benefit ratios especially where such ratios do not provide a clear-cut criterion of investment and resort is to be made to other considerations.

#### 5. DATA REQUIRED FOR PROJECT IDENTIFICATION

If cost-benefit analysis is taken to be the criterion used for project identification, then the following basic data need to be provided:

(a) Investment costs:

In general the estimation of investment costs is an engineering exercise and is usually a task performed by engineers. It is the economist's role, however, to make sure that all the technical alternatives are considered, that all relevant items of costs, and no other, are included and that only prices that reflect opportunity costs to the country are used. The analysis should therefore include not only the major choices e.g. gravity irrigation versus pump irrigation, but also all possible technical forms of the projects chosen, e.g. all the different possible types and methods of construction of roads. Consideration of alternatives becomes even more important in view of the fact that projects usually are not single entities, but rather a package of a related set of projects. Agricultural projects usually necessitate rural construction and settlement with different land tenure systems, irrigation works (canalization etc.), buildings, roads and even schools and health centres. It is important to see to it that all the relevant elements of such a package are included in the calculations.

The question arises of what items are to be included as investment costs. Obviously cost of labour, equipment and materials should be included. Not so obvious are cost items that cater for costs of domestic and foreign consultants and for the time devoted to work on the project by civil servants in the operating units. Another item would be a provision for miscalculations, omissions and other unforeseen contingencies.

Having decided on the items to be included the next step is to evaluate them at the prices that reflect opportunity costs of the resources to society. This is not the place to discuss, at great length, the theory of shadow pricing, suffice it to say that great care should be taken when pricing labour and foreign exchange costs as well as the choice of a rate of interest since these constitute the major examples of price distortion in most underdeveloped countries. Taking current prices and interest rates may lead to faulty valuation of investment costs.

(b) Benefits:

In general the most important problems arising in the calculations of benefits are, first, the estimation of the increase in physical output resulting from the project and the package of other projects that go with it and secondly, the prices at which the increase in output are to be evaluated. The basic data for increased output and for prices are therefore essential for the calculation of benefits.

Potential increase in output is subject to technical factors and can be reliably estimated e.g. the increase in output resulting from an irrigation project is a function of the area that will come under irrigation and the amount of water that will be made available. The question really arises of whether the output of the project will be used immediately as intermediate or final goods or will this take place only after a period of time. If products are to be used only after a lapse of time, then this transitional period will be of considerable importance in calculating the rate of return of the project. In this case estimates of the increased benefits that accrue in different periods of time are to be made in the best possible manner and used in the calculation of rates of return.

The next problem arises with respect to the valuation of the expected increase in output. Local market or ex-farm prices are usually not a good guide since these suffer from distortions due to monopolies, subsidies, etc. Local market prices are usually different in different parts of the country due to high transport costs and the general inefficiency of the distribution system. Investment decisions, therefore, cannot be based on these prices.

Resort will have to be made to shadow prices. Import and export prices (calculated net of import duties and export taxes and converted at a shadow exchange rate) are in many cases appropriate for use as shadow prices even if the increased output is not destined for the export market or the displacements of imports. Even here problems abound since the international market itself is riddled with quotas, subsidies, international agreements, regional and bilateral preferences etc.. Yet export and import prices adjusted in the above fashion are a better guide to the real value of the commodities produced in the country concerned.

The above discussion makes clear that sort of basic data is needed for project evaluation using cost-benefit ratios. Admittedly there are many uncertainties and a wide scope for the exercise of professional judgement and commonsense. It is because of this that the decision-making mechanism should include a large segment of professionally competent people and that the discussion of the results and choices of projects should not be severely limited to the civil service. On this score the practice in the Sudan leaves much to be desired.

Concluding Remarks:

The Sudan's Ten-Year Plan was a pioneering work for this country - nothing like it has ever been tried before. Like all pioneering work it has severe limitations and shortcomings. The experience of the past seven years has pointed out many of the pitfalls and the varied aspects of what might seem at first glance to be a deceptively simple exercise. The lessons of the Ten-Year Plan are by no means limited to areas of project evaluation and implementation, but these other aspects, especially the design of appropriate economic policies, are excluded by the title of this paper. It is hoped that the lessons learned from the Ten-Year Plan will be reflected in the next Plan for Economic Development of the Sudan because that is the only sign of progress.

## APPENDIX

Development of the Sudan economy during the first  
half of the Ten Year Plan (LS. Millions)

Year	GDP	GDP	GDP Growth	Population	Per Capita	
	Current Prices	Constant Prices (1964/65 Prices)	Rates at Cons- tant (1964/65) Prices		Current Prices	Constant Prices
1960/61	348.5	369.1		11.93	29.2	30.9
1961/62	398.6	419.0	13.5	12.26	32.5	34.2
1962/63	401.6	418.6	-0.1	12.61	31.8	33.0
1963/64	415.9	424.1	1.5	12.97	32.1	32.5
1964/65	437.8	437.8	3.2	13.33	32.8	32.8
1965/66	461.7	459.9	4.9	13.73	33.6	33.5

Source and Notes: Department of Statistics and Ministry of Finance and Economics. Average rate of growth of GDP at constant prices was 4.5 per cent compared with a plan figure based on 1961/62 prices of 4.8 per cent. Population projections based on a 2.8 per cent rate of growth per year.