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N I G E R I A

IRRIGATION WATER CHARGES IN NIGERIA

by

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PAPER ON IRRIGATION WATER CHARGE PRACTICES IN NIGERIA

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IRRIGATION WATER CHARGE PRACTICES IN NIGERIA

BACKGROUND

Nigeria with a population of about 100 million is blessed with a vast land mass of about 98.3 million ha. of which 72.4% (71.2 million ha) are cultivable. The enormous land mass has given rise to vagaries of weather situation which marks out the country into three district rainfall and forest zones. The evergreen deciduous forest in the South, the Middle Savannah zone and the Sudano-Sahelian grass land in the extreme Northern part of the Country. Rainfall varies from 3,000mm in the coastal areas to about 1,500 in the middle zone and around Jos and Mambilla Plateaux decreasing to as low as 500mm in the extreme North. Evaporation on the other hand, increases as one moves northwards due to longer hours of sunshine and higher mean air temperatures.

As would be expected from the low rainfall figures in some areas, severe and prolonged drought often occur most especially whenever the annual rainfall deviation is up to 20% with at least 15 consecutive rainless days during the wet season. Drought sometime ravage the whole country and is in actual fact known to conform with the 30/10 yearly Sanelian drought cucle. During such occurences a nationwide crop failure is experienced as a result of lack of sufficient water for plant growth and nourishment, culminating in a country-wide food shortage.

It is therefore in an attempt to obviate the devastating effect of drought that a policy on crop irrigation has been evolved. This is a common practice in the semi-arid areas of the North where dry season is comparatively prolonged (i.e. September to May). Dry season spell is of shorter duration in the South and Middle zone (i.e. October to March) where supplemental irrigation is often practiced and encouraged by the Government.

In order to support government policy on self-sufficiency in food production, effort is increasingly geared towards putting more land under cultivation through irrigation practices thus making productive an otherwise barren land. Predominant among crops put under irrigation are Sorthum, millet, maize, wheat, rice, cowpea, groundnuts, vegetables etc. With the emphasis the government now places on local sourcing of raw materials for the Industries other agricultural crops e.g. cotton, citrus, pineapple, rubber, plantain etc are also put under irrigation.

Shadouf irrigation had been the traditional method in practice along the banks of perennial rivers mostly for vegetable production. This is found to be labour intensive and not much land could be put under irrigation with this old traditional method. The government, in a bid to improve the irrigation management practices of farmers, recently introduced a modern concept of surface and sprinkler irrigation systems, whichever method is used depends on the topography and other factors of the project command area.

The aggregate total of the areas under Shadouf (small-scale) irrigation is estimated to be about 805,000ha in 1978 while corresponding figure for the formal or large scale irrigation project was only about 14,000 ha around the same period. Inspite of substantial investments of capital and planning attention made by the government, this figure has only now attained a 50,000 ha level. Further investment of capital and attention continues to be devoted to formal irrigation and under the just completed 4th National Development Plan, it was the intention of the Federal Government to put about 1 million ha of land under irrigation. Although this is far from being realised, it shows the importance which the government places on irrigation development.

A number of agricultural action programmes coded variously as "Operation Feed the Nation", Green Revolution", "National Accelerated Food Production Programme" etc. have been successively hoisted by the government aimed at sensitising the people into

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agricultural production. A massive response is noticed in other areas of agriculture except Crop irrigation. Not even big-time farmers (individuals and Companies) ventured into this area because of the required vast capital outlay and the long gestation period of such irrigation projects. The long and short of this is that investment in formal irrigation in Nigeria is still the exclusive prerogative of the Federal and State Governments. The situation may change in due course with the present awareness for local sourcing of raw materials being demonstrated by industrial firms.

2. FINANCING OF IRRIGATION INVESTMENTS IN PUBLIC IRRIGATION SCHEMES

As aforesaid, the introduction of formal irrigation in Nigeria is a very recent innovation with no track record of seasoned experience. The government has therefore not formulated any policy on financing of irrigation investments both in public and private irrigation schemes. Whatever large scale irrigation project exists now is wholly financed by the Government - ranging from the construction of headworks, pump-house, irrigation canals etc including their operations and maintenance. The Government makes available, annually, financial allocation to executing agencies such as River Basin Authorities at the Federal level and the Ministries of Agriculture at the State level. The bulk of this finance is derived from our earnings from crude oil which accounts for more than 90% of our total revenue. Local taxes are therefore not specifically imposed on direct beneficiaries of irrigation projects, other than a nominal fee charged on farmers within the irrigation project command areas.

In view of the fact that the Government has no policy on financing of irrigation project, there is also no clear-cut policy on recovery of investment cost. Irrigation projects are rather treated like a social welfare scheme similar to education and health, instead of being treated purely on its economic viability. The River Basin Authorities are empowered under an enabling degree to, in consultation with the Government charge a fee for

services provided including those of irrigation water projects. Each River Basin Authority therefore decides on the appropriate irrigation water rate. Generally speaking, all the River Basin Authorities charge between N15 - N100 per hectare of irrigated land. There is no clearly defined criteria in arriving at these rates, and the fees charged are not in anyway related to the cost of providing irrigation water. In actual fact if all the cost of investments were to be recovered in a large scale irrigation project, a sum ranging between N800 and N2,000 would be charged per hectare of irrigated land. Compared with this economic cost, the fee (i.e. N15 - N100/ha) charged on farmers is very insignificant.

This nominal fee is collected through deduction at source from proceeds realised from the sale or crop production of individual farmers. The River Basin Authorities assist the farmers in harvesting, processing and marketing the produce. The charge on inputs (e.g. fertilisers, pesticides, irrigation water etc) supplied to farmers are thereafter deducted from sources. This is a very effective method in that it assists the government agencies in recovering all the fees chargeable to farmers, if the proceeds from the farmer's farm outstrips the fees. It only follows that if the sales of crops is less than the fee charged to a farmer that government agency bears part of t the losses. On the other hand, the purchase price of the River Basin Authorities are usually less than the ruling market prices. The losses sustained by farmers make them feel reluctant to sell their produce to the River Basin Authorities.

3. PAYMENT FOR WATER ABSTRACTION

It could be said here that water resources planning management and development in Nigeria is still in its formative stages. Efforts is however being geared towards its maturation within a very short term. Part of this effort is the formulation of water legislation to give legal backing to all our water resources planning, management and development activities. The draft water law has already been sent to the Ministry of Justice for approval

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and final enactment.

At present no permission or licence need be sought, or charge imposed on the surface or ground/water exploitation and abstraction. When the water law comes into force however, it is expected that water uses would be streamlined to be in proportion to users' requirements.

The enabling law exempt some water users from paying charges, this include those for fishing, livestock, navigation and domestic purposes. The Minister of Federal Ministry of Agriculture, Water Resources and Rural Development, acting on behalf of the Federal Government is however empowered to authorise agencies to impose charges on services, including those contributions to the cost of works associated with the provision of such services and paid for by public fund. Irrigation water comes under this category. The finer details like the modalities of the charge and the duration would be worked out whenever the water law is formally passed. This would further strengthen the River Basin Authorities and the States Ministry of Agriculture (who are executing agencies of irrigation schemes) in imposing water assessment.

4. POLICIES RELATING TO FINANCING OF PRIVATE IRRIGATION SCHEMES

The declining oil revenue resulting from the falling price in the world market has in turn resulted in our dwindling foreign reserve. The regular flow of raw materials for our manufacturing industries have thus been impeded. The situation now warrants industrialists to look inwards for the local sourcing of their raw materials most of which are agro-based. This has led to the recent development of large scale farms by subsidiaries some multi-national companies such as Nigerian Breweries Ltd, Leventis Group etc. These spate of farm developments is expected to pay off and will soon reverse the trend of our being net importers of food materials. Almost all these Companies and Cooperative societies still depend on rainfed agriculture;

irrigation infrastructures are just being developed for them.

The Federal Government has no financial policies to specifically stimulate irrigation investments by private individuals or groups. There is however some established financial policies for agriculture as a whole in which irrigation forms a component. Some of the policies which could encourage the growth of private irrigation schemes through improved access to credit facilities include:-

(i) The establishment of Agricultural Credit Guarantee Scheme, under which all commercial banks are required by law to dedicate 15% of their loan portfolio to agriculture.

(ii) Commercial banks are to operate a low interest rate, 9% (4% less than the commercial rate) on all agricultural loans.

(iii) The Nigerian Agricultural and Credit Bank (NACB) has also been established exclusively for the promotion of agriculture and provides, short, medium and long term credit to individual farmers, cooperative organisations, limited liability companies and government agencies. Under their small-holder scheme, NACB can lend ₦5,000 to small-holders without collateral, a local guarantor of adequate standing is however required.

Under the recently introduced general economic policy framework, emphasis is shifted from further development of oil industry to Agriculture and the latter is further being stimulated through:

(a) A 30% levy imposed on all imports except Agricultural equipments and materials.

(b) proceeds from the 30% levy on imports to be used to strengthen non-oil exports especially agricultural exports.

(c) Simplification of import licensing

(d) Introduction of export credit guarantees

(e) The reduction of petroleum subsidy by 80% and savings realised used to establish "Directorate of Foods, Roads and Rural Infrastructure" in the President's Office.

All these measures and more are aimed at stimulating agricultural production, generate employment etc and these in turn directly or indirectly stimulate the establishment and financing of irrigation schemes.

Private irrigation schemes, apart from the traditional Shadouf method are literarily non-existence. Public irrigation schemes are also very new. There is therefore no basis for comparison between the two. The establishment of large government irrigation schemes has generated public criticisms for its lack of adequate planning, slow progress and waste. The projects are rather ambitious and money sunk in each scheme is rather phenomenal in order to derive full advantage of the economy of scale. The efficiency in managerial skill, staff experience etc make this goal easily unattainable in many project areas. Proceeds from water charges imposed is insignificant compared with the costs of investment, operation and maintenance of irrigation schemes.

5. OPERATIONS AND MAINTENANCE IN PUBLIC IRRIGATION SCHEMES

There is no policy now on the operations and maintenance of public irrigation schemes. One is however being formulated which will take particular note of the poor economic base of our small-holders who produced about 97% of our food output. The plan still being formulated is for the Government to bear the cost of headworks and irrigation infrastructures while operations and maintenance cost (overheads) are to be borne by the farmer-beneficiaries.

The nominal charges of N15 - N100 by the River Basin Authorities in no way represents the full cost of operation and maintenance of existing irrigation schemes. The River Basin Authorities and the Irrigation Divisions of the States Ministry of Agriculture are not given cost recovery mandate. The fees charged for water services are set far below the actual cost of operations and maintenance, it only represents a small fraction of the cost of recovery. Some rates are fixed at N15/ha whereas project operations and maintenance cost is about N200/ha. The implication is that the full operations and maintenance cost are being borne by the Federal and State Governments through annual budget allocations. There are uncertainties attendant to this allocation, as a slump in the revenue base of the government also affects the actual appropriation to the Agencies. Budgets are therefore subject to cuts depending on the financial standing of the Government.

As stated earlier cost recovery policy has not been embarked upon, but a full recovery of operations and maintenance cost is likely to be favoured in view of the financial predicament of the governments of the Federation. It has however not been easy to compute the full operations and maintenance cost due mainly to our lack of experience on management of irrigation schemes.

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Experience of seasoned experts from other lands put this cost at between 2 - 4% of investment cost. This will include energy normal repair, replacement of equipment, and vehicles. It has been estimated operations and maintenance cost in Nigeria would be between N200 - N600/ha depending on the irrigation methods used. Costs that are not directly related to the specific irrigation projects are however not included. Such charges as for extension services, overall financial and administrative functions, salaries for staff associated with other projects are excluded.

The operation and maintenance cost of pumped irrigation schemes is about N500 - N600/ha for large irrigation projects. This takes account of fuel and maintenance for operation of diesel pumps. The gravity distribution system is less costly and is generally between N200 - N250/ha, when cost of agriculture extension workers associated with the project are added.

6. Farmers' Ability to Pay Water Charges

The impact of irrigation is felt through the realisation of increased crop production. Most farmers could boast of crop productions (e.g. rice) figure of about 3.5 tons/ha. For double cropping, which characterise most irrigation schemes, about 7 ton/ha per annum is realisable. With the current domestic market price of rice, a handsome income of more than N7,000.00 is possible. Giving allowance for labour opportunity cost and overheads, a farmer of this status with income of N7,000/ha/annum the recovery of the cost of operations and maintenance would not constitute a problem, it can only reduce the profit margin by a negligible fraction. It is therefore very easy for farmers to refund to the project cost of operating and maintaining the structures. Available statistical data, some government farms bear this out. The hectarages cropped, output as well as estimated revenue from the River Basin Authorities are computed as in the attached table, using government guaranteed minimum price.

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In order to stimulate people's interest in the development of Agriculture, the government has extended protection on the sector through:-

(a) minimum guaranteed prices

(b) Marketing board purchases

(c) Import quotas and tarrifs

(d) Import subsidies.

All matters relating to crop pricing are determined by a Technical Committee on Producer Prices (TCPP). Their decisions are subject to the approval of price Fixing Authority in the person of the Head of State.

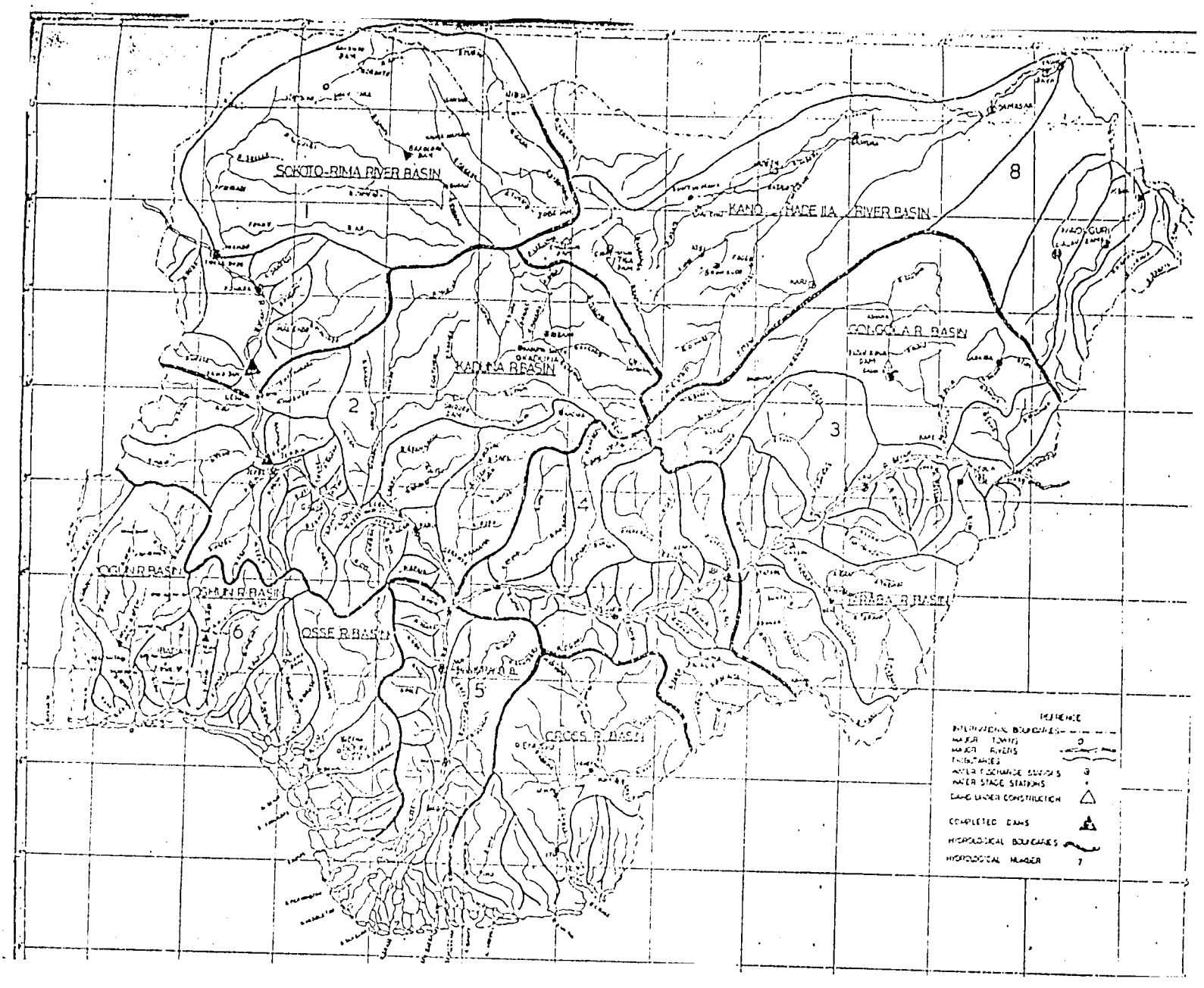
Subsidy programmes are given for pesticides, herbicides, fertilisers and other farm chemicals. Agricultural credit is also given at subsidised interest rates under the Agricultura Credit Guarantee Scheme Loan Fund established in 1977. These subsidy measures are aimed at further reawakening the interest of the public in boosting food production, generating employment in the rural areas, stem the tide of rural-urban migration and also improve the income base of the rural dwellers. Apart from the flat rate income tax on individuals, no tax is charged on farm produce and no remarkable charge is imposed on the utilisation of the land. In actual fact, government keeps the land in-trust for the people and are released to farmers on payment of token charges. When the subsidies, tax reliefs, and token charges on land and water are put together, the fees paid are quite insignificant compared with the revenue generated from crop production.

FEDERAL DEPARTMENT OF WATER RESOURCES,
LAGOS.

4th September, 1986

Annexure: Production output and Revenue Figures of irrigated Crops in Nigeria.

	River Basin Authority	Crops	Area Planted (Ha)	Output Tonnes	Yield Tonnes/ ha.	Gross Revenue ₦
1.	Gongola-Jamaare	Wheat Tomatoes	3,845.49 1,634	11,535 57,190	3.0 36	5,767,500 7,434,700
2.	Sokoto-Rima	Maize Cow pea Sweet Pot. Rice Groundnut Wheat	6,115.91 859 2,843.10 127.49 55.20 211.72	12,230 668 36,950 381 110 414	2 0.78 13 3 2 1.96	2,446,000 490,980 7,990,000 190,500 49,500 207,000
3.	Upper Benue	Cotton	1.779	2,849.49	1.60	1,993,243
4.	Upper O-Oshun	Rice Maize	108	270	2.5 3.8	94,500
5.	Anambra	Rice Maize Cassava	2,417 21 22	7251 42 220	3 2 10	3,625,500 4,830 2,200
6.	Imo	Rice Maize Cassava Vegetables	90 100 50 10	270 200 500 360	3 2 10 36	135,000 23,000 50,000 22,000
7.	Niger Delta	Rice Plantain Palm Oil	143 - 9,500	429 - -	3 - -	214,500 - -
8.	Benin	Maize Rice	240 75	480 225	2 3	55,200 112,500
9.	Lower O-Oshun	Maize Rice	93 52	186 156	2 3	21,390 78,000
10.	Lower Niger	Maize Yam Cassava	500 & 250	1,000 2,500	2 10	115,000 250,000



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