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SUMMARY REPORT ON IRRIGATION SCHEMES IN AFRICA

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1. Despite considerable emphasis on industrial development, agriculture still forms the basis of the economy of most African countries. Agricultural productivity must, however, be developed both regionally and nationally. The irrigation of previously little used lands may provide such a means of developing new areas, and diversifying national economies by increased and more varied outputs. Irrigation may also be the means of introducing reforms in land ownership and the consolidation of holdings (as in the Medjerda valley of Tunisia), of training farmers in new techniques and crops, and so of acting as a starting point for national development. The Gezira irrigated area of the Sudan, recently almost doubled in area to 1.8 million acres (720,000 hectares), is the most outstanding example in Africa of the part which an irrigation project may play in national welfare through the overwhelming importance of irrigated cotton in Sudan exports, national revenue, and income.

2. Water is one of Africa's scarce commodities, and its availability varies greatly both spatially and seasonally. There are also many competing uses of it - for navigation, power, irrigation, domestic uses, industry and mining. There are also many alternative ways of using capital that might be invested in irrigation, such as investment in dry farming, mining, industry or transport. Governments must, therefore, weigh most carefully the costs of irrigation against real alternative uses of scarce capital that may become scarcer, and against the rewards that are reasonably likely to follow from irrigation. They should also consider the relative ease and speed of results from irrigation, compared with those from other forms of development.

3. Irrigation in view of its complexity and high capital cost can be likened somewhat to industrialization in its manifold aspects and problems. Irrigation is not simply an engineering problem, important

and costly though this often is. It involves careful prior research into the general question of market outlets and also into a large variety of technical questions including river regimes, water content and flow, soils, crops and their water needs, new and very different techniques of farming, new types of settlement, housing and life, possible land reform and regrouping, anti-malarial and anti-bilharzia control measures, and new or much improved social services, especially in general and agricultural education and in village welfare. Co-operatives for marketing and the purchase of seeds, fertiliser and equipment are usually necessary, and require honest and efficient management. Resettlement of peoples unaccustomed to irrigation, in an area previously little used, requires imaginative and skilful handling. Irrigation projects need managers of exceptional technical ability, drive and kindly personality. The rest of the personnel should also combine these qualities, since large scale irrigation involves a major technical and social revolution. Before embarking on such schemes, governments should consider carefully whether irrigation is the right choice, whether the economic and social consequences likely to follow are what they seek, and whether they have or can secure the enterprising farmers and technicians required for the task.

4. It was with a view to aiding governments in this matter that the ECA-FAO Joint Agriculture Division sought the services of a consultant to visit selected schemes in eight countries of North and Eastern Africa, and who has first-hand knowledge of West Africa, to report on the problems and achievements of irrigation in Africa. Schemes were visited in the Medjerda Valley (Tunisia), the Gezira (Sudan), at Wonji and Tendaho (Ethiopia), Mwea-Tebere in Kenya, two schemes in the Moshi area of Tanganyika (as well as an appraisal of proposals for irrigation on the Rufiji, Wami and other rivers), three schemes on the Limpopo and Incomati rivers of Mozambique, several developments on the Sabi and Lundi rivers of Southern Rhodesia, and the Kafue Flats of Northern Rhodesia. The consultant had also visited the Richard Toll (Senegal) and Office du Niger (Mali) schemes in 1950 and 1959.

5. All these have provided an excellent sample of irrigation schemes in Africa, within the time and resources available to the Commission and the consultant. Most are government-sponsored, but some are company-owned and managed. Some provide for eventual land ownership, but most have tenants. Some have settled landless peoples, others have taken only skilled farmers. The Caniçado scheme of Mozambique has African and European farmers working and living side by side on identical terms, the other schemes are either for African farmers alone or company estates with African labour. Methods of irrigation vary widely: furrow, conduit, aerial, etc., as do payments for water and land, means of marketing, and social services provided.

6. Many schemes are seeking answers to problems already solved elsewhere, and one of the outstanding lessons to be learned from such a study is the need for governments to seek the experience of similar schemes elsewhere, and to send their technicians on visits to lands offering useful lessons and experience. Technical knowledge is still unduly hemmed-in by national frontiers.

7. A detailed report is being drawn up and will be available shortly to governments.