

THE KILOMBERO VALLEY OF SOUTH-CENTRAL TANGANYIKA

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The members of the East Africa Royal Commission, 1953–55, drew attention in their Report¹ to the Kilombero valley region of south-central Tanganyika as an agricultural zone of high potential. The extensive area of fertile land was at that time virtually undeveloped, but several major projects have subsequently been established, and investigations have shown that future agricultural expansion on a scale unprecedented in Tanganyika would be both technically possible and economically advantageous.

The Kilombero valley occupies a faulted trough-like depression between the Southern Highlands of Iringa District on the north and west, and the Uplands of Mahenge on the south and east. The underlying and surrounding rocks of the highlands consist of late Archaean metamorphic rocks (quartzites, gneisses and schists) of the Usagaran System, with Karroo sediments (sandstones, conglomerates and shales) underlying the Msolwa area. These rocks have been covered with Pliocene and Pleistocene deposits and alluvial material of Recent age.

Each year, beginning in late November or early December, the Kilombero floods its banks and covers an area four miles wide, returning to its main channel in May or early June. This annual inundation is due to several causes: the proximity of the highlands with their high orographic rainfall; the steep and rocky nature of the escarpment slopes, causing rapid run-off; and the gentle eastward slope of the valley itself, which is broken by a bottleneck where the river cuts through a zone of hard sandstone, just below Ifakara. Complete control of flooding, following the construction of carefully placed dams on tributary streams, will free a vast area for irrigation. The best soils, sandy loams and clays, are located on the alluvial fans on the gentle slopes bordering the flood plain, mainly on the north bank of the river. The meander zone and hill-slopes bordering the valley have generally poor soils and are unsuitable for irrigation. A soil survey published by the Food and Agriculture Organisation of the United Nations (F.A.O.) in 1961² which covered 2,600 square miles of the valley (the area of greatest agricultural potential) considered between 60%–70% of the area suitable for irrigation.

Local climatic variations are numerous and the use made of the land is often closely related to the range of such variations. The meagre figures available suggest that the valley has generally over 40 inches of rain per annum, an amount that increases towards the edges of the valley where orographic rain on the escarpment slopes may exceed 80 inches per annum.

The great agricultural potentialities of this lowland attracted attention as long ago as 1909 when the Germans surveyed a possible railway route through the valley. A report by A.M. Telford in 1928,³ a land use survey by R.F. Loxton in 1951,⁴ and a further rail survey in 1952⁵ also emphasised the latent resources of

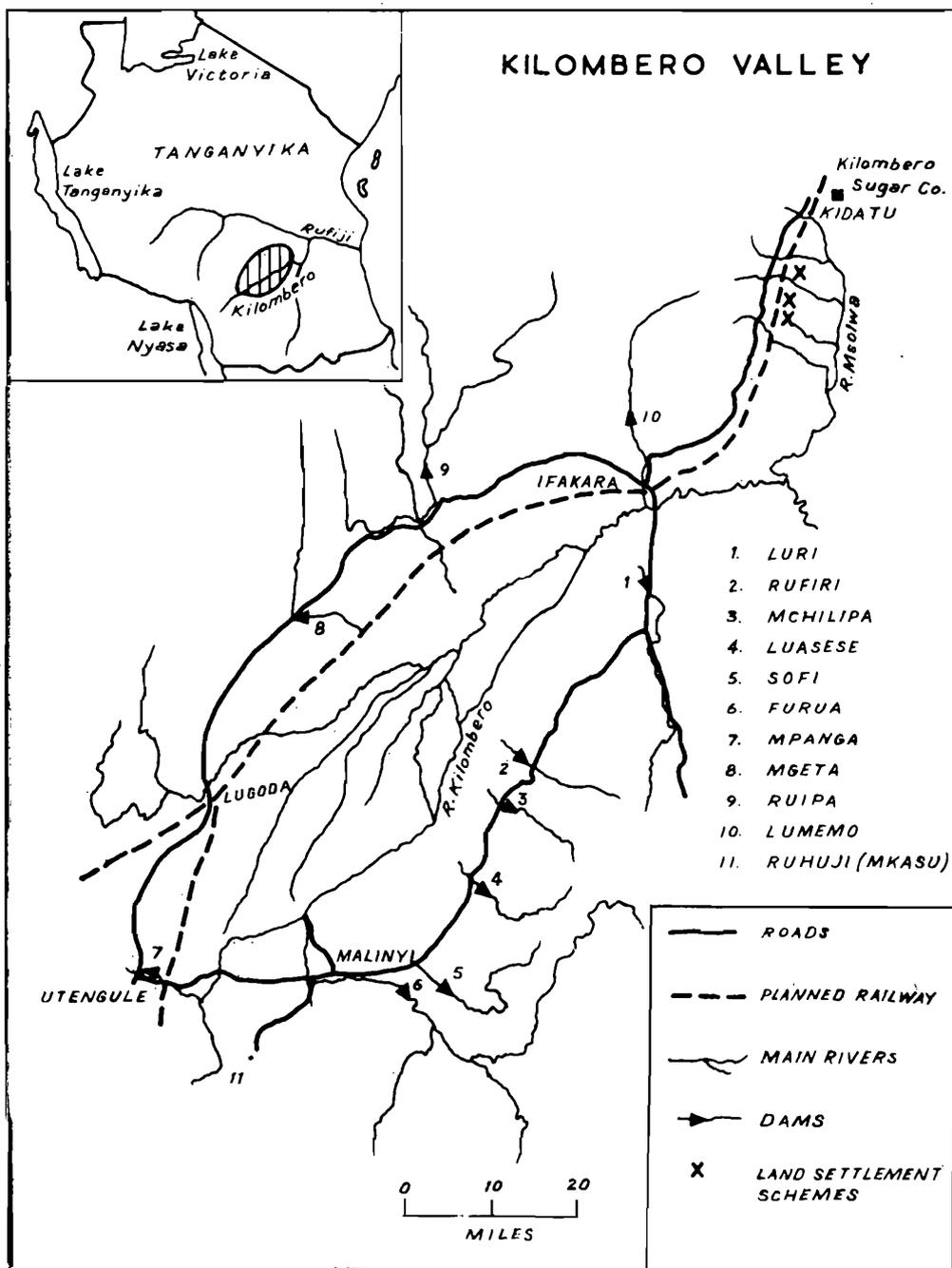


Fig.1

the area. The last and most recent investigation of the valley is the preliminary reconnaissance survey of the Rufiji Basin undertaken by the F.A.O.² Following surveys and reports on hydrology, water control, soils and irrigation, the team of F.A.O. experts proposed large-scale irrigation and flood control development in three successive stages. In the first stage irrigation will be by normal canalisation, the water being taken from uncontrolled streams as they are at present; the second stage involves the construction of control works to a moderate extent, while making possible large-scale expansion of irrigated cultivation; the final stage comprises the full control of river flows and the development of cultivation under irrigation to the maximum possible extent. The survey considered it impossible, from every point of view – practical as well as financial – to contemplate completion of all the above projects before 1970. A selection of those considered most advantageous for initial development involves the development of 2,840 acres in the first five years and a further 311,000 acres in the second five years following the construction of the vast Mkasu reservoir on the Ruhuji river. Proposed dam sites, for storage of irrigation water and for flood protection, are located on the accompanying map. Nothing has so far been done to implement the findings of the survey, initial cost (estimated at £72 million for completion of all three stages) and lack of available capital being the greatest obstacles.

At present the economy of the valley is based entirely on agricultural production, since there are as yet few indications of any mineral resources. The favourable conditions of climate, soil and water supply make possible the growing of a wide variety of crops, which support a mixed population (last estimated at 56,000) of peasant farmers mainly of the Pogoro, Ndamba Mbunga and Ngindo tribes. The basis of the subsistence economy is wet rice, with some maize and beans, planted at the onset of the rains in December. As dry weather crops cassava and sweet potatoes are grown in case of famine. Cotton provides the basis of a small cash income for some of the African small-holders, especially in the Malinyi region. The cotton produced is of a long staple and generally of better quality than that of the Lake Region, but the quantity is comparatively small. All the cotton goes to the four ginneries in the region owned by the Ulanga Cotton and Rice Industries. Very few cattle are found in the valley owing to the prevalence of the tsetse fly. If, however, the flood plain area, which is now free of the fly, were to be protected from flooding and drained, the possibilities of livestock farming might be considered. Many of the local African farmers, especially in a bad season, depend for their livelihood on the Kilombero itself. The millions of acres flooded each year provide excellent breeding grounds for fish, and when the waters recede the river and bordering lakes are well stocked with many varieties, including the *Tilapia*. The fish is caught and smoked until it is dry, and it can then be kept for two or three months. Buyers come from all over Tanganyika and bundles of fish precariously strapped to the top of local buses find their way even into Northern Rhodesia. Eaten as food it provides much needed protein, and sold for cash at roughly 2/-lb., it provides a welcome, though meagre, source of income. At present marketing is not organised on a large-scale, but it is hoped to start a fishing co-operative in the near future.

The only major commercial project so far developed in the Kilombero valley is the production of sugar. In August 1962, after two years of planning, experiment, planting, building and perfecting, the first refined sugar was produced, and in October of that year the Kilombero Sugar Company's factory was officially opened. The scheme is dependent mainly upon foreign investment – principally from Britain, Holland and U.S.A. – but over 1,000 local investors have also bought shares in this new venture. The sugar estate is located close to the Great Ruaha river but in fact lies within the valley of the Msolwa, a tributary of the Kilombero. A master pumping station feeds water from the Great Ruaha through a network of canals, with booster pumps providing spray irrigation.

The total concession is 25,000 acres. Initially the company planted 1,700 acres under cane, but this has increased in 1963 to over 4,000 acres. The Company employs an average of 2,500 workers, many of whom have come from outside the valley. Four other privately owned sugar estates, plus three Government sponsored land settlement schemes are located in the vicinity, and it is the policy of the Company to encourage and assist the out-growing of cane by African small-holders.

The factory is continuously in operation during the production season (June–January). At present the input of cane is about 1,100 tons a day and the output of sugar about 110 tons. By 1965, Kilombero is hoping to produce more than 35,000 tons annually. This figure will still be less than half Tanganyika's estimated national consumption for that year, and although production in other parts of the country (notably in the Arusha area) is significant, imports will continue to be necessary for some years to come. At present Tanganyika's sugar policy seems to be moving towards self-sufficiency, with plans to extend the Kilombero factory and possible developments in the Wami valley. However, in the interests of the proposed East African Federation, it would seem expedient for Tanganyika to make up her sugar deficiencies by taking Uganda's surplus.

About twelve miles south of the sugar estate are three land settlement schemes now being run by the Tanganyika Agricultural Corporation (T.A.C.). The three schemes at Ichonde, Sonjo and Kichangani comprise at present 300, 400 and 500 acres respectively, though it is hoped to extend the areas in the near future. Any Tanganyika citizen may apply for land, and if accepted each settler is given 4 or 5 acres to develop. In the early stages (Sonjo and Ichonde were started in 1960, and Kichangani in June, 1963) the Agricultural Department and later the T.A.C. have organised the initial surveys, the construction of roads, drainage ditches and the marking out of plots. The settlers are then responsible for clearing their areas. Finally the land is ready for its mechanical ploughing and within six or seven months of starting work the land is ready for planting.

The main crop is sugar which finds a ready market at the nearby Kilombero Sugar Company. This cash crop monoculture is favoured by the Senior Settlement Officer in overall charge of the schemes, because it facilitates the distribution of profits, all the money being available at one time. Apart from the 2–2½ acres devoted

to sugar some settlers grow a little cotton, and are self-sufficient in food crops – rice, groundnuts with some maize and cassava. All the work of planting, harvesting and loading of produce is done by hand, but the T.A.C. arrange road transport. The money accruing from the sale of cash crops is returned to the grower, less costs of seeds, transport, fertilizers, etc.

Apart from the sugar project and the three settlement schemes, several small but significant developments have taken place recently. At present experiments are being conducted to find out whether cocoa, tobacco and tea may be economically grown. The Africans already grow some 'heavy western' tobacco near the river banks which is sold in the local market for use as snuff, but experiments are going ahead to grow some burley, and seed beds have been planted. The Government have a trial plot of cocoa, and Sanje Estate (owned by Mr. W. Paul) also has a small area

TABLE 1

The Area foreseen as possibly irrigable under the three stages of development

River valley	Stage I (acres)	Stage II (acres)	Stage III (acres)
Luri	1,340	8,500)
Rufiri	2,500	10,000)
Mchilipa	1,250	10,000) 44,00 (as
Luasese	250	10,000) in Stage II)
Sofi	250	5,500)
Furua	2,500	28,800	90,000
Ruhuji	–	Mkasu storage reservoir	300,000
Mnyera	–	–)
Mpanga	1,250	5,500) 30,000
Kihansi	–	–)
Mgeta	1,250	1,250) 360,000
Ruipa	–	–)
Lumemo	2,500	29,000)
TOTAL	13,090	108,550 of which 13,090 in Stage I	824,000 of which 108,550 in Stage II

planted in 1962. Already some 150 acres have been planted out to rubber on the Ichonde land settlement scheme based on the knowledge and experience gained on Mr. Paul's estate. His 300 acres of *Hevea* were planted by the Germans at the beginning of this century and are now, owing to age, yielding only very small quantities of latex, which is sold chiefly to the Bata Shoe Company. It seems unlikely that rubber will ever play an important role in the agricultural development of this area, primarily because of the low cost of imported rubber from overseas.

A Kilombero forest survey was instigated in September, 1960. The entire area of the valley and the surrounding escarpments were divided into 18 separate units for investigational purposes. On the recommendations of the survey a large area in the Msolwa valley has now been put out to tender for development purposes and it is hoped to begin cutting about the middle of 1964. Teak, planted in trial plots, is growing successfully, and the indigenous mvule tree provides an excellent local wood for construction.

A very recent experiment which is causing a great deal of interest is the planting of kenaf (*Hibiscus cannabinus*), a plant very similar to jute. A private Dutch company planted 12 acres in 1962 and a further 60 acres in 1963. If successful the company has plans to plant 10,000 acres, establish a retting factory in the valley (using the ample local water supplies) and a bag-making industry in Morogoro, where electricity from the Pangani river hydro-electric power scheme is relatively cheap. The Government is also conducting its own trials with a view to encouraging peasant production, which could be absorbed by the proposed Dutch factory.

No mention has been made so far of communications, but this factor will undoubtedly play a major role in the development of the valley. In 1961 a branch railway line was constructed from Kilosa on the Central Line to Mikumi for the purpose of transporting the sugar from the Kilombero Sugar Company. Much has been heard of a possible railway link with Northern Rhodesia and the copperbelt. If such a link were agreed upon, the most likely route of the line would be through the Kilombero valley via Ifakara, Lugoda and Makumbako to Mbeya and the border. In 1963 work began on a 30 mile extension of the line from Mikumi to Kidatu, and the proposed route, beyond Kidatu, is marked on the map.

The construction of a railway to serve the Kilombero valley, apart from the implications of a Northern Rhodesia link, would be complementary to the F.A.O. recommendations on flood control and irrigation. On the one hand the presence of the railway would cheapen the construction costs of the irrigation schemes and provide cheap transport for produce, and, on the other hand, the construction of irrigation schemes would probably provide import traffic for the railway from an early date, and would be conducive to increased export production. However, the report on the Kilombero Railway Project in 1961⁶ considered that the agricultural potential of the Kilombero valley is such that even without any irrigation project there would be a long term case for a railway to serve the area. Such optimism appears to be based on reality when one considers the developments that have

already taken place, and if these are taken in conjunction with the experiments now in hand, it seems likely that the Kilombero valley will play an important role in the future economic development of Tanganyika.

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