East African Seaports : Facilities and Equipment, 1965

		Mombasa	*Dar es Salaam*	*Tanga*	*Mtwara*
Deep-water berths:	number	13	3	—	2
	total length (ft.)	7,690	1,800	—	1,248
Lighterage Wharves:	number	2	4	2	—
	total length (ft.)	1,350	1,929	1,250	—
Transit sheds:	floor area (sq. ft.)	1,159,084	545,904	235,867	80,000
Stacking grounds:	area (sq. ft.)	619,835	491,934	81,832	50,000
Total storage area:	(sq. ft.)	1,778,919	1,037,838	317,699	130,000
Cargo lighters:	number	30	37	30	1
	capacity (tons)	6,695	6,810	5,980	200
Cargo-handling appliances:	cranage capacity (tons)	485	218	68	29
	forklift trucks (number)	83	30	13	2

Source: East African Railways and Harbours, *Annual report, 1965* (Nairobi, 1966), p. 56. Recent data on Zanzibar are not available, but in broad terms the port is comparable to Tanga.

The chief problem of expanding port facilities is that of obtaining financial provision for expansion before the need becomes extremely pressing. Whilst the dangers of over-capitalization must be avoided, the cost of making available at all times a reasonable margin of spare capacity needs to be compared with the delays and traffic losses which inevitably result if serious congestion is allowed to occur repeatedly.

B. S. HOYLE.

RECENT INDUSTRIAL DEVELOPMENT IN THE DAR ES SALAAM AREA

During the past few years the fastest growing sector of the Tanzanian economy has been manufacturing. In 1965 alone, the net value of manufactured products increased by 16 per cent. Dar es Salaam continues to be the centre of much of this new activity. A paper in an earlier issue of this journal (Datoo, April 1965) commented on new processing industries in and around the capital. The purpose of this note is to illustrate both the expansion and the diversification of Tanzania's manufacturing sector by reporting on the establishment of two major industries in the Dar es Salaam area, each the first of its kind in Tanzania.

The most impressive addition to Dar's industrial scene is the £5 million oil refinery located at Kigamboni, just across the harbour from the city. Owned by TIPER (the Tanganyika and Italian Petroleum Refining Company Limited), a joint venture between the government of Tanzania and the Italian state-owned ENI (Ente Nazionale Idrocarburi), the refinery began operations in June 1966 and reached full production in October. At capacity, the plant could supply 600,000 tons of refined petroleum products annually. About two-thirds of the production consists of industrial fuel oil for furnaces and diesel oil for heavy machinery; the other products are petrol (both regular and premium grades),

kerosene for lighting, aviation turbine kerosene for jet engines, and liquified petrol gas, a mixture of propane and butane for household uses. The major factors determining the nature of the output are the type of crude oil used (in this case from the Middle East) and the structure of the refinery. Oil products were obtained direct from the middle East until 1963, when a refinery opened at Mombasa. For two to three years this supplied all East African requirements, but national feeling was not satisfied until Tanzania had its own industry. Current Tanzania demands on the TIPER refnery are of the order of 360,000 tons per year (about 60% of the total capacity). Dar es Salaam is the largest domestic consumer, followed by Tanga, Zanzibar, Mtwara and Pemba. The Moshi-Arusha area, which comprises some 20% of the total Tanzanian market is excluded from the above figure because it continues to be supplied at lower rates from the Mombasa refinery. Surplus petroleum products from TIPER are being shipped south to Zambia. At the end of 1966, over 400 lorries were hauling oil to the copperbelt and returning to Dar with copper for export. Recently, a contract was awarded to ENI to construct an 8-inch oil pipeline from the refinery to Ndola in the copperbelt (a distance of 1,060 miles), at a cost of £16 million. This indicates a long-term Zambian reliance on the refinery, rather than merely a short-term response to the Rhodesian crisis.

With the beginning of production at the Tanganyika Portland Cement Company's new plant near Dar es Salaam in September 1966, Tanzania became largely self-sufficient in yet another commodity. The factory is located at Wazo Hill, an up-faulted block of reef limestome (Pleistocene to Recent in age), which rises over 200-feet above the nearby coastline. The hill is 14 miles northwest of the capital on the Bagamoyo road.

Geologic surveys conducted by the company in 1956 found excellent quality limestones at Msasani, a suburb of Dar es Salaam. This area, however, was reserved for residential development, so a concession was obtained for Wazo Hill, an alternative site. It was initially estimated that the hill contained 21 million tons of recoverable limestone, but this figure has been revised downward to 15 million tons. Several nearby off-shore islands are part of the concession and contain another 9 million tons. The company estimates that these resources will keep the factory supplied for the next 80 years. Quarried within two miles of the plant, the limestone is mixed with local clay (partly from the over-burden and partly from Pugu to the south) and gypsum (from Itigi, west of Dodoma); the cement is manufactured using the dry rotary method, the first of its kind to be installed in Africa. This unusual all-dry process is given as one reason for the very high quality of the cement.

The initial annual capacity of the plant is 150,000 tons, sufficient to meet Tanzania's current needs. This is especially so as the northern portion of the country will continue to receive its cement from the Portland works in Mombasa. When the market warrants it (and the Five-Year Plan envisages cement requirements of 250,000 tons by 1970), a second kiln will be installed increasing output to 280,000 tons per year. Early in 1967 some 200 tons of cement per week were being shipped to Zambia; much of it sent in lorries returning with copper. Smaller amounts have been sold to Rwanda and Burundi. As both Kenya and Uganda produce their own cement (Kenya supplied Tanzania prior to the opening of Wazo Hill), the company is looking as far afield as Aden and Mauritius for additional markets.

In addition to the cement factory, the Wazo Hill site include a packing plant, an office building, and flats for senior personnel. After packing, the cement

is moved some 10 miles by lorry to a rail-head at the Ubungo Industrial Centre, (a new development and site of the new £2.5 million Friendship Textile Mill) four miles west of Dar on the Morogoro road, where a godown and shipping centre have been constructed. This became necessary when it proved too expensive to extend a rail spur to Wazo Hill. With investments already at the £2 million mark, the company will build a concrete products factory at Ubungo in 1967. They hope also to modify their original packing plant at the harbour (which handled bulk cement from Mombasa), so it can be used in the future to prepare cement for overseas export.

R. A. SIMKO.

BUGAMBE TEA ESTATE, BUNYORO

In 1960 it was decided to grow tea in Bunyoro primarily as part of the Uganda Government's plans to diversify the country's agriculture and to shift some of its economic dependence on cotton and coffee to other crops, and secondarily to initiate some sort of major agricultural/industrial project which would provide employment in an area of Uganda which had previously received little in the way of development stimulation. The project has taken the form of a plantation controlled by Agricultural Enterprises Ltd., a subsidary of the Uganda Development Corporation, together with production on small farms in the neighbourhood.

The area selected had to have a probability of receiving between 45″ and 70″ rainfall in at least 9 years out of 10. In Bunyoro such an area occupies a very narrow belt of some 5 or 6 miles width running parallel to Lake Albert and about 10 miles to its east. The actual annual rainfall figures recorded have been as follows:
1961 — 80″, 1962 — 64″, 1963 — 71″, 1964 — 65″, 1965 — 57″. The average over these 5 years was 67″.

Having decided on the general area in which the estate should lie, paying regard to topographical features such as steep rocky hills, which are to be avoided, and rolling open grassland reasonably free of trees, which is desirable because it makes clearing easy, the actual site was selected from the air by Dr. T. Eden, who had then only recently retired as the Director of the Tea Research Institute of East Africa at Kericho. It was then necessary to get on to the ground and see what the soil was like. As well as a good rainfall, tea needs an acid soil with a pH preferably between 4.3 and 5.6., and it is fortunate that the one condition usually occurs with the other. Heavy rainfall removes bases from the soil by leaching and leaves it in an acidic state usually suitable for tea growing.

The first pioneers arrived on the chosen site in September 1960, but it was not until 1961 that the first tea was planted. Since then planting has taken place at the rate of 300 acres a year, and by the end of 1966 tea occupied 1,644 acres. The rate of development has been very rapid and it is generally believed that it is one of the most extensive tea planting programmes ever undertaken under single management, although it is only fair to record that other estates of Agricultural Enterprises Ltd. have successfully completed similar expansion in other parts of Uganda.

In addition to providing plants for its own development — and 3,500 are needed for every acre planted — Bugambe Estate has been responsible for growing tea stumps for the Banyoro outgrowers who are gradually establishing their own plots of tea within a few miles of the factory. To produce such quantities of