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AN INTEGRATED PROGRAMME FOR THE TEA INDUSTRY IN MALAWI

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CONTENTS

1. INTRODUCTORY BASIC INFORMATION

Malawi is situated in East Central Africa and has an area of 119,140 km^2 of which 20% is inland water. The country is land locked, bordered by Tanzania in the north, Mozambique in the east and south and Zambia in the west.

The climate is tropical and subtropical with a temperature range of 13^{o}–23^{o}C. The rainfall averages 845 mm per year in low lands and 2,500mm in highland areas which are suitable for tea cultivation.

Land and Agriculture:- The total land area is 9.4 thousand km^2 of which 38% is generally considered as arable although 60% is considered cultivable in one way or another. Eighty per cent of the total land area is held under customary law, 18% is public and 2% is free hold. The land is occupied by a population currently estimated at 9.0 million people. The average farm size is 1.1 ha for small farmers and 200 ha for estate owners.

Agriculture is the backbone of the country's economy, accounting for 90% of exports. The growth rate of the economy, currently at about 3% p.a. largely depends on the performance of this sector.

Small farmers produce 85% of total agricultural output. They concentrate on **food crops** such as maize, sorghum, millets, root crops, groundnuts, fruits and vegetables. They also grow **cash crops** including tea, cotton tobacco and coffee.

However it is **large scale estate** agriculture that provides almost 75% of total agricultural exports principally the main cash crops namely **tobacco** which is number one, **tea** and **sugar.** Tea is the second most important crop of which 90% is exported and earned Malawi an annual average of US $ 43.4 million between 1980 and 1989.

The output was mainly from estates with a small but growing proportion from small holders. Overall agricultural growth is now about 3% per annum which is slightly below population growth.

The growth of the GDP has improved. At constant factor costs, the GDP grew by 3.6% in 1988 compared to only 1.4 in 1987 in most sectors.. In the agricultural sector, output increased by 3.1% overall in 1988 with the large scale sector accounting for 7.1% and the small scale sector with only 2.6%. The manufacturing sector expanded by a 4.8% in 1988 due to improved trade balances and trade liberalization.

Inflation - Inflation in consumer prices measured by the composite retail price index, increased to 31.5% in 1988 but dropped to 12.7% in 1989 partly due to devaluation of the local currency.

Balance of payments showed a surplus over the merchandise trade account of K 11.1 million (about US $ 4.98 million). Total exports (fob) were K 760.6 million about US $ 324.7 million) in 1988 while total imports (fob) mostly capital goods, were K 821.2 million (about US $ 264.3 million). The deficit was therefore MK 269.6 million mainly due to rising transport costs and low world commodity prices. The visible trade balance was negative by K 396.7 million (about US $ 168.8 million) in 1988. The Malawi Kwacha depreciated steadily in the 80s against major currencies and was MK 2.59/US dollar in January 1990.

The major sources of energy for household and industrial use are fuel wood, (80% of total energy), oil, electricity and coal.

The major means of transport are inland trade routes, railways, waterways and air ways for internal, regional and international trade.

Politically, the country, independent since 1964, has enjoyed an almost good stability. Administratively it is divided into North, Centre and Southern provinces with districts down to the area administration units.

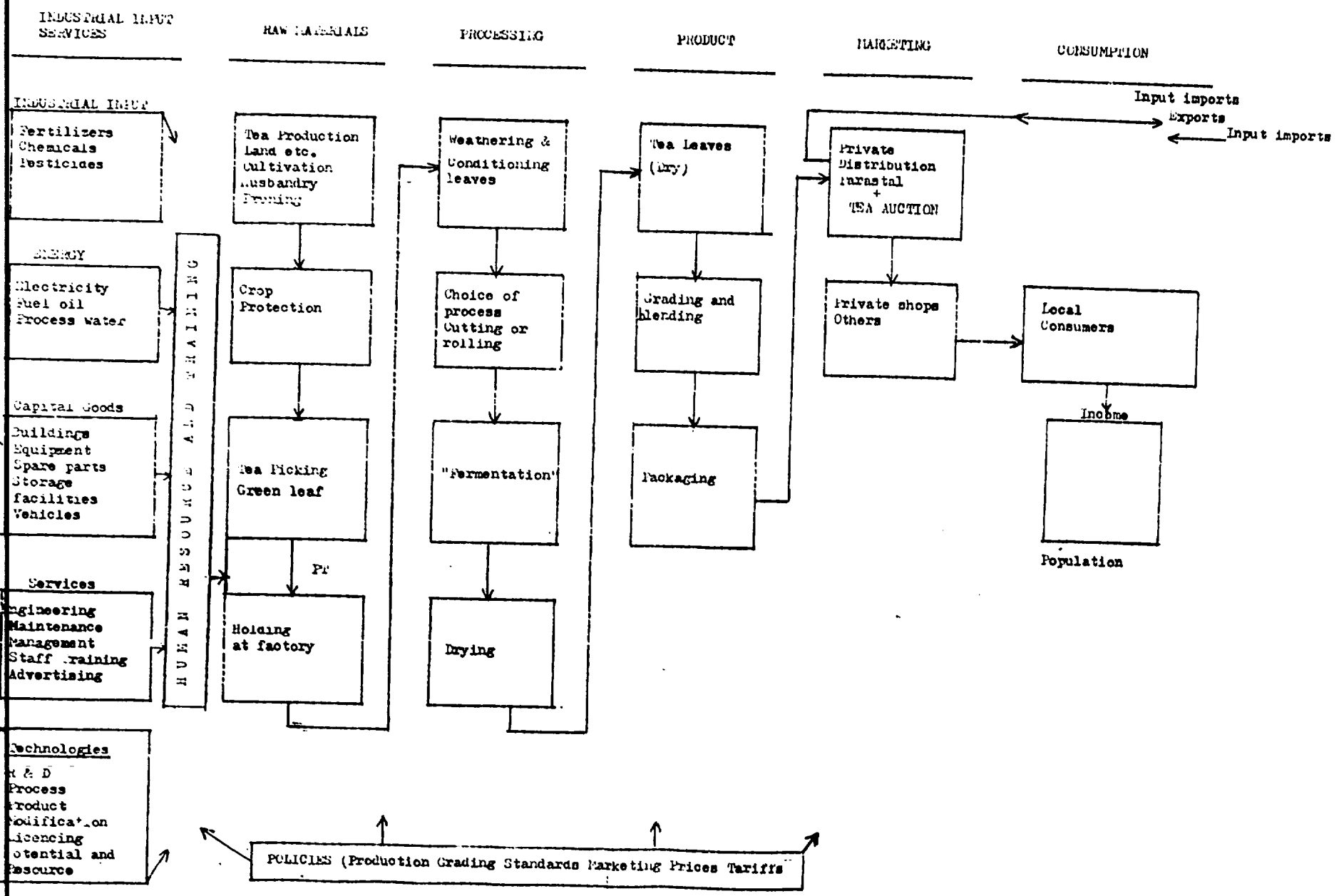
1.1.0 DESCRIPTION OF THE TEA SYSTEM MAIN COMPONENTS AND LINKAGES

Tea (**Camellia sinensis** (L) O. Kuntze) flourishes well in Malawi which is the first African country to grow it on a commercial scale at the turn of this century. The major tea growing areas are on estates and small holdings in Thyolo and Mulanje in the southern Region and a small amount is grown in the north at Nkhata Bay.

Major Actors: In these areas tea is grown by members who belong to the **Tea Association of Malawi** which is a private company. There are 29 companies registered as tea producers. Small holders are assisted under a project run by the **Small Holders Tea Authority** which is a parastatal. In 1989, the authority had 4902 members on 40 tea blocks with an average land holding of only 0.5 ha. On the other hand estates averaged about 200 ha. for over 50% of the estates.

An overview of the tea production, processing, marketing and consumption system is given in Figure 1.

FIG. ...1... OVERVIEW BASE SCHEME FOR THE TEA SYSTEM IN MALAWI



1.1.1 Tea Production in Malawi

Table 1: Tea Production characteristics from 1980-1989

	Planted Area (ha)			Made Tea Production (metric tons)		
	Private Estates	Small Holders	Total	Estates	Small Holders	Total
1980	16,073	2,227	18,300	28,828	1,088	29,916
1981	16,173	2,327	18,600	30,725	1,212	31,964
1982	16,164	2,326	18,490	38,215	2,671	40,886
1983	16,153	2,347	18,500	30,909	1,101	32,010
1984	16,274	2,352	18,626	35,923	1,607	37,530
1985	16,307	2,349	18,650	38,048	1,907	39,955
1986	16,429	2,361	18,790	37,370	1,582	38,952
1987	16,378	2,366	18,790	30,161	1,747	31,908
1988	16,457	2,371	18,828	37,948	2,209	40,157
1989	16,438	2,390	18,828	37,161	2,309	39,470

Source: The Tea Association of Malawi 1990.

As evident in Table 1 estate and smallholder hectarage did not vary much from 18,600ha between 1980 and 1989 but made tea production reached a peak in 1982-83 of 40,886 tons. The yield in 1985 was 39,955 tons and in 1988 it was 40,157 tons. The increase in production was due to high green leaf harvests arising from favourable rainfall regimes in the tea producing areas in Mulanje and Thyolo. In addition, among smallholders, tea gardens planted in the early 70s reached peak production in 1982-83, hence the high production of made tea. This coincided with good world market prices which averages 117 pence/kg at the London tea auctions compared to only 77.5 p/kg in 1980.

1.1.2 Area Under Tea Cultivation

The area has risen from 7,000 hectares in 1950 to 16,300 ha in 1980 and 18,828 ha in 1989. The increase being mainly in the small holder sector, started in 1964. Private estates owned 87% of the area and 13% belonged to smallholders under the Smallholders Tea Authority. The effective area planted with tea varies considerably as some growers have diversified in a bid to cut down production costs or some farmers have engaged in other more remunerative operations such as food crop production.

Green leaf tea is harvested in flushes in cycles of 14 days among smallholders and 11/12 days cycle in estates. The top three leaves along with the stalk are plucked by hand. Harvesting is done by men, women, juveniles and even children at peak times. In Malawi the peak season lasts from November to April (i.e. during the rainy season). The low season coinciding with the dry season, lasts from May to October. The leaves are collected in baskets which hang from the pickers head or shoulders. An adult plucker must harvest 44 kg of leaf on a working day. The leaf is centrally collected and transported to the factory by trucks or tractors.

Smallholders over the same period increased production from 1,087.8 tonnes in 1980 to 2,309 tonnes in 1989, an increase of 112%. Total made tea production in Malawi reached a peak of 40,156.6 tonnes in 1988. Production in 1989 was from 20 registered private estates under the Tea Association of Malawi along with the smallholder growers.

1.1.3 Tea Manufacturing

The processing of tea is a precise art and Malawi uses modern technology. Figure 2 sums up the major operations in a typical tea factory in Malawi. Performance of the tea industry in 1988 is given in Figure 3 which summarises the major components.

FIG..2... FLOW DIAGRAMS OF TEA MANUFACTURE

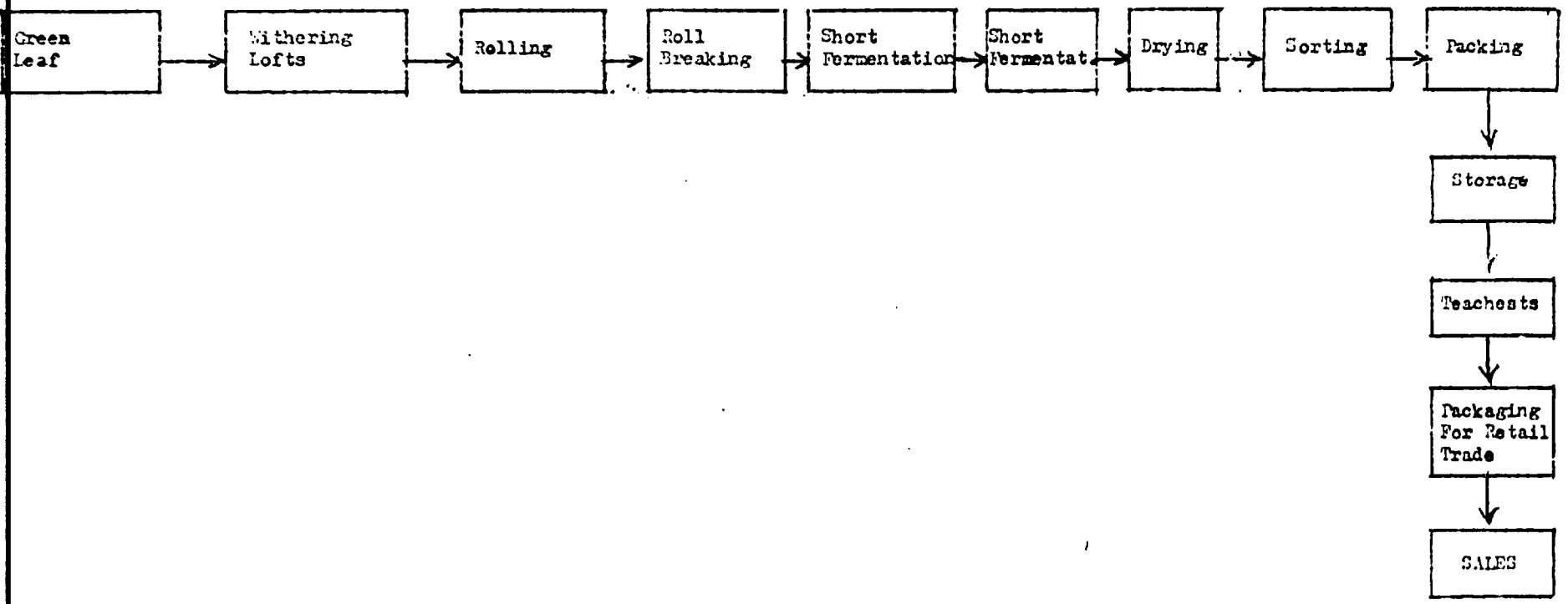
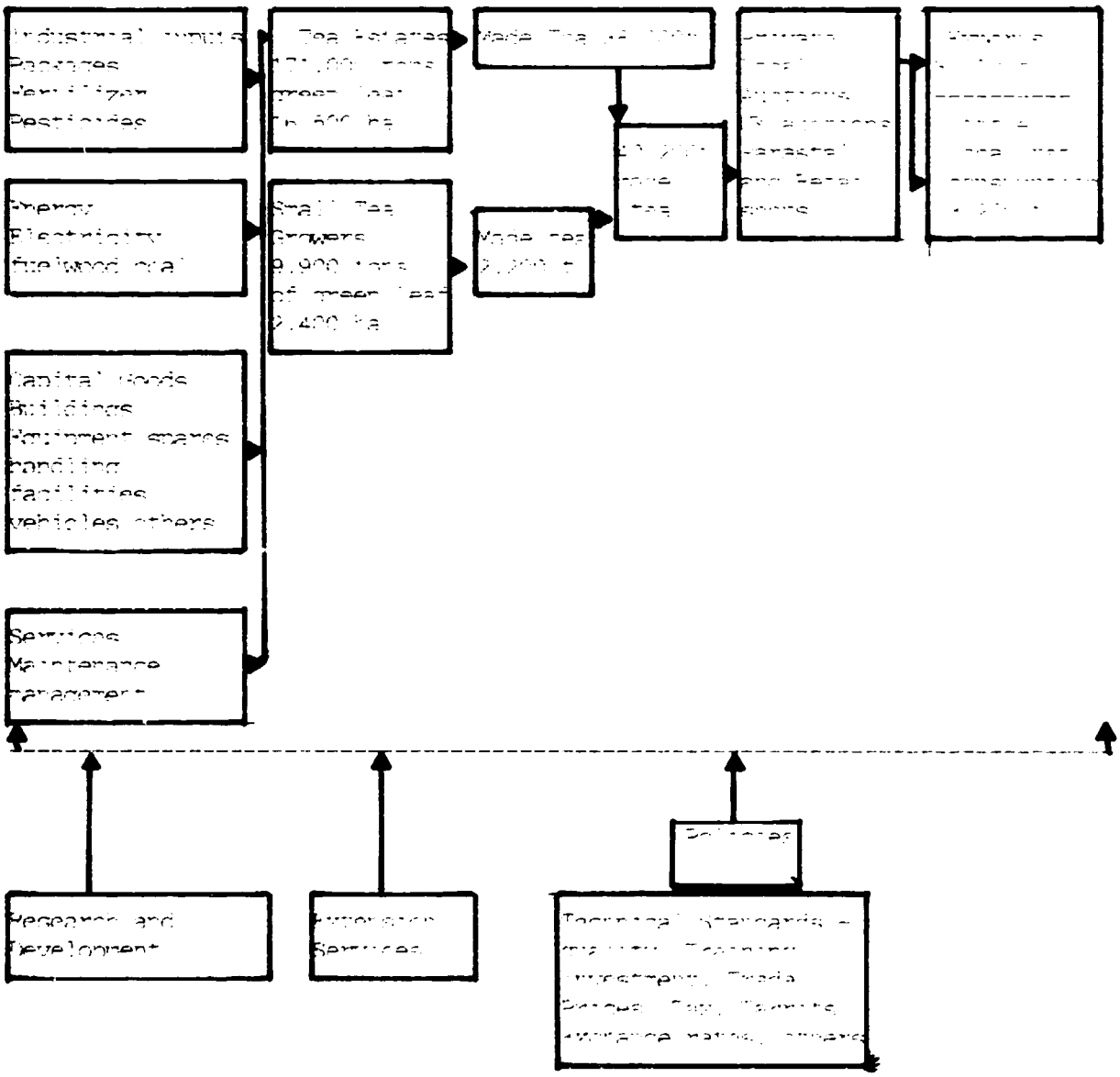


Figure 3: PERFORMANCE OF THE TEA INDUSTRY SYSTEM IN MALAWI IN 1988

INPUTS AND SERVICES	DESCRIPTION	PROCESSING	MARKET AND UNIT OPERATIONS



In Malawi tea manufacturing is done in 20 privately owned estate factories in Thyolo and Mulanje and the Malawi Tea Factory owned by the Small Holders Tea Authority in Mulanje. All the factories are in the south (Mulanje and Thyolo districts) except one in the north The units range from 4 years old to over 60 years old in some estates.

The process involves withering in troughs, rolling and cutting (using Curl Tear and Cut (CTC), or Lowrie Tea Processing (LTP) machines, followed by fermentation, drying, grading (sorting) and packaging. It is then transported for export or packaging for local consumption.

The drying operation uses mostly wood for fuel for firing the boilers which is a heavy drain on the ecology and forests.

As regards the ratio of green leaf to made tea, the Malawi tea factory at Mulanje in 1987/88 processed 8.3 mil. kg of green leaf and realized 1.8 mil kg of made tea. This gave a ratio of 4.5 (leaf) to 1 (made tea) which is an acceptable average.

The distribution of units by size of employees varies as shown in Table 2.

Table 2: Size Distribution in Tea Manufacture

Employees	Below 100	100-199	200-499	Over 50	Total
Factories	2	2	12	4	20

(Details are given in Appendix 1)

Capacity - Total installed capacity for tea manufacture was not available from the private sector (confidential information). Made tea production between 1980 and 1989 has been presented in Table 1. The range was 500 tons to 5000 tonnes per factory as confirmed by the Tea Association of Malawi. Capacity utilization of installed capacity averaged about 80% in 1989 countrywide.

Using the Malawi Tea Factory as an example, the factory has an high capacity of 120,000 kg/day of greenleaf with a peak in November to April and low utilization during the dry season when leaf harvesting is at a low ebb.

Capacity utilization is seasonal in all factories. During the main harvesting season, November to April, maximum capacity utilization is 90% but during the slack season (May to October) utilization averages about 30%.

1.1.4 Tea Production Costs

Production costs for tea are summarised in Table 3 in the case of the Malawi Tea Factory.

Table 3: SMALLHOLDERS COSTS OF PRODUCTION (tambala/kg)

Description	1981/82	1986/87
Production of Greenleaf (tonnes)	6.079	11.381
1. Smallholder Tea Authority Costs		
Leaf Purchases	6.5	12.0
Vehicle running	2.6	3.7
Other leaf collection	2.9	0.5
Administration	5.1	7.4
Office expenses	1.1	1.2
Other	0.8	2.6
Workshops	0.3	0.4
Staff costs	3.2	3.7
Estate expenses	0.8	0.7
Finance charges	3.9	4.0
Training	0.2	0.3
Unrecovered fertilizer	0.0	0.3
Other	0.4	0.0
Sub Total STA	20.2	29.4
2. Malawi Tea Factory Costs		
Manufacturing	7.2	7.5
Wages	0.4	0.5
Fuel wood	1.7	0.9
Electricity	1.0	0.9
Packing material	1.7	1.1
Repairs and maintenance	0.5	0.5
Tea cess	0.3	3.0
Depreciation	1.6	0.7
Sales expenses	4.9	7.6
Administration	2.2	2.5
Salaries	0.7	0.9
Secretarial	0.6	0.7
Vehicles	0.1	0.1
Directors fees	0.0	0.1
Financial charges	1.9	0.4
Sub-Total MATECO	16.1	18.2
3. Total costs/kg leaf	36.3	47.5
Outturn (%)	21.2	20.0
4. Total Costs/kg made tea	171.3	233.0

Source: Accounts of the STA and MATECO 1981 and 1986.

1.1.5 Tea Prices: Green leaf and made Tea

Tea green leaf prices paid to small growers from 1981 to 1989 are given in table 4.

Table 4: Malawi Small Holder Tea: Average Green Leaf price

Year	Payment Tambala/kg
1981/82	9.5
1982/83	11.3
1983/84	22.0
1984/85	26.0
1985/86	15.0
1986/87	15.0
1987/88	15.0
1988/89	22.0

Source: Small Holder Tea Authority (1990)

The prices have fluctuated reflecting a depressed world market which determined what the farmer eventually received. The leaves were sold to processing factories.

Over 90% of manufactured tea marketed by companies was sold through the London Tea Auctions and in Malawi at Limbe through local brokers. Significant amounts were also sold by direct treaty to the USA and FRG. Total Malawi tea exports are indicated in Table 5 with a low figure in 1987 due to bad weather. Malawi had only 3.8% of the world market. Price details are given in Table 5.

Table 5: Malawi Tea Exports Value and Price Trends at London and Limbe (Local) auctions

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Amounts, t(000)	31.3	31.0	36.4	36.0	37.2	37.4	40.2	33.4	37.0
Value in US $ (million)	36.7	34.2	42.0	47.6	80.0	53.5	36.8	27.6	31.1
London p/kg	77.5	87.5	102	132.4	229.3	120.0	106.1	78.8	75.6
Limbe t/kg	88.5	101.4	137.8	259.1	245.3	178.7	149.5	160.6	212.4

Source: International Tea Committee Annual Bulletin of Statistics 1989 (London) (t- Tambala, p-English pence)

The low export amount in 1987 recovered in 1988, by an increase of 10%. Most of the tea was sold at the local auction floors as evident in table 5 reflecting the higher prices at the domestic market compared to those in London which were 41% lower than the year before.

1.1.6 Local Consumption

In the local market, Malawi retained only 4,196 tons for home consumption averaging a supply of only 0.4 kg/capita in 1988, which was very low compared to other African tea producing countries.

The outlook in the world market is gloomy as prices continue to fluctuate. On the other hand 1990 will have a higher local tea production as the weather has been good so far.

Market intelligence available on tea indicates that Malawi tea is in reasonable external demand on the world market and competes favourably with Kenyan tea and Indian teas, since the tea is of high quality. It is often used to produce blended teas common on the European market. World market tea prices continue to be uncertain as the World Bank has recently observed. It would be sufficient to say that demand will follow whatever market trends that will develop and maintenance of the high quality of Malawi tea will help to sustain competitive sales compared to other cheaper teas.

The low local tea consumption could be attributed to food habits. Tea is foreign to most local people and is associated with Asians and Europeans and urban life. It has only found its way into rural households in the past couple of decades. Furthermore tea currently retailing at 250 tambala per kg is relatively expensive for peasant farmers (190%) of the total population) who are poor with an average GDP of US $ 186 per year. The low income of the general public limits their purchasing power. Many households in rural areas earn little cash income with over 50% earning less than K30 per year which comes mainly from crops and livestock sales. Wage earners in towns and plantations are slightly better off but still poor as wages are low mostly lying between K100-500/month.

It would therefore appear that local consumption could be stimulated by raising the purchasing power of the population by raising producer prices of farm products and improving wages. This accompanied with active sales promotion in rural areas and small affordable packages from a few grams (5 to 20gm packages) might stimulate local rural consumption.

1.1.7 Training in the Tea Industry

Available information shows that recent small holders require training while estate workers have learned on the job over the years. In tea culture, demonstrations have been conducted before each operation on teaching plots in Mulanje and Thyolo and on farmers' good growers. The subjects covered included planting, pruning, tipping, plucking, agronomy and pest control. Extension meetings, discussions with section managers and field days and visits to the Tea Research Foundation contributed effectively. Staff training is also done through seminars on tea culture and local study tours.

In tea manufacture, it appears that no formal training is done. Floor operators learn on the job. The same would appear to be the case for mechanical maintenance staff and other artisans.

1.1.8 Research and Development

The Tea Research Foundation which is financed by the industry is running a programme designed to increase yields, particularly from small holder producers. The foundation has contributed much to the industry in Malawi, through the introduction of new varieties and the dissemination of yield and quality improvement methods.

The foundation serves, central and southern African countries under the auspices of the Tea Association. It carries out its work on the main station, private estates and small grower holdings. The major disciplines include tea agronomy, horticulture, plant breeding, plant protection, productivity, and advisory extension services. The chemistry and biochemistry section deals with all aspects of tea quality.

Process engineering and product development is carried out in a small factory but a new bigger facility is nearing completion at Mimosa. Work on modification of processes in current use and investigations into new processes is being undertaken.

The Foundation has been financed by its own members contributions, but this is insufficient and technical assistance is needed if the institution is to meet its regional responsibilities fully.

1.1.9 Associated Main Subsystems

a) Population and Human Resources

The population of Malawi was 7.9 million in 1987 and is estimated at 9 million by 1990, growing at 3.2% per annum. It is projected to 12 million by the year 2000, thus providing ample low cost labour for agriculture and industry. The population density averages a high 85 people per km^2 and up to 300 per km^2 in the south. This makes Malawi one of the most densely populated countries in Africa. The life expectancy at birth is 46 years. Females who provide most of the rural agricultural production outnumber men by a ratio of 100.6 to 100 respectively. The productive population is only 50% since about 46% is below 15 years and 4% is above 65 years, thus presenting a high young age dependency. Most of the people live very simply with a GDP per capita of US $ 186 in 1989. 89% of the population is rural and 11% live in urban areas. Eighty eight percent of the people are engaged in agriculture, 5% in manufacture and 9% in services. Paid employees were 14% in manufacturing and 52% in agriculture, mainly on tea, tobacco and sugar estates.

The population is relatively poorly endowed with little knowledge on modern agriculture and manufacture. Only 45% of those aged over 5 years had any formal education in 1987, while 42% had primary education and 3.4% had secondary education. Very few had college and university education. The adult literacy rate is estimated at 40%. This implies a low supply of skilled manpower especially in manufacture and management especially for the agro-industrial sector.

However the population is fairly well fed to provide ample labour in agriculture. The per capita energy supply is 2373 calories per day mainly from cereal, root and oil seed crops. Protein supply average 66 g. per capita per day mainly from plant sources and animal sources (fish and livestock) as indicated by FAO crude food balance sheets for 1988. However child malnutrition is estimated at 5% for the underfives.

(b) Transport

The productive sectors of the economy have necessitated development of dependable transport routes and fleets (road, railway, water and air). Government spent about 27% of its development expenditure on the transport sector in 1989 since the country is land locked with limited access to sea ports for its exports.

Roads: The total road network comprises 12,215 km of which 2,260 km are tarmac. This is the most dependable trade route. Emphasis is on opening a northern route to northern parts and south west to other sea outlets in South Africa and East through Mozambique. The feeder roads in small producer areas are dirt roads which are poor and some are impassable during the rainy season.

Railway: The railway lines which were once the major means for transport are now virtually internal because of blockages in Mozambique due to the internal war. This has strained road transport considerably. However, the line to Nacala through Mozambique has recently been reopened.

Waterways: The 600 km long lake Malawi provides freight and passenger services as feeder to the railway and road network for local and export goods.

(c) Water and Energy

The country is well endowed with ample supplies of water from lake Malawi, other three lakes and many rivers for domestic and industrial purposes.

Hydro electric power potential is high. The Electricity Supply Commission of Malawi (ESCOM) supplies 144 MW of power from two stations and extra power comes from thermal plants. A national grid exists and more is under construction for rural electrification in southern central and northern provinces. The tea growing areas are well covered.

1.2.0 IMPORTANCE OF TEA IN THE ECONOMY OF MALAWI

Tea is the second most important crop in the agriculture dominated economy and contributes much as outlined here.

1.2.1 Production and Value: Tea production, between 1980-1988 averaged 35 million tonnes per year, **valued** at MK 64 million. This was 20% of total agricultural production, hence a major source of the GDP and investment funds.

1.2.2 Investment and Manufacture: The tea industry embodying production, processing and marketing in 1986 had 20 manufacturing firms (i.e. 15% of total manufacturing firms). The estimated investment in tea was MK 49.4 million in 1986 which is a big sum in a developing country.

1.2.3: Employment: In 1986 (latest available) the tea industry had 37,600 employees which was 15% of total manufacturing employment with an employment elasticity of 2% against a national average of 0.8% in manufacturing.

1.2.4 Export Earnings: These are shown in detail in Table 5. Between 1986 and 1989, tea earned Malawi an average of K 78 million per year which was 13% of principal domestic commodity total, second only to tobacco. The GDP contribution from agriculture was 37% of which 15% came from tea.

1.3.0 GOVERNMENT DEVELOPMENT OBJECTIVES AND POLICY MEASURES RELATED TO TEA

Government objectives are set out in the "Statement of Development Policies 1987-1996" and recent economic and structural adjustment programme carried out following advice provided by the International Monetary Fund and the World Bank.

1.3.1 General Objectives

- The tea system fits into the objective to increase small holder agricultural and industrial development, with measures to provide incentives including increased prices and credit facilities.

- Strengthening and restructuring of agents (affecting the tea system) such as input supplying parastatals to enhance performance and efficiency.

- Improvement of financial procedures and regulations, accompanied by better economic planning and debt management obviously favour tea production, marketing and returns.

1.3.2 Industriai Objectives

These objectives along with relevant policies were designed for freedom of activity for private enterprise aimed at expansion of exports especially in the agro industrial sector as indicated hereunder:-

- Tea fits into export orientation promotion through enhancing industries based on local agricultural produce.

- Better linkages in the tea system enhance the integrated approach advocated by government

- Promotion and development of small scale industries reinforce tea related activities.

- Encouragement of local participation in manufacturing industries has drawn in the tea small holder producers effectively.

- Acceleration of growth of the productive sectors by identifying new technologies, improving existing ones towards more industrialization directly applies to the tea industry in the country.

1.4 Ongoing Activities Related to Tea

1.4.1 Agricultural Sector

Major activities addressing problem areas in the tea system are given in Table 6.

Table 6: Major Problem Areas and Ongoing Activities related to the Tea System

Component	Description	Problem Areas	Ongoing Projects Programmes by government and private sector
Production	- Large scale estates under Malawi Tea Ass. - Smallholder producers in high density population areas	- Limited land - Competition cash and food crops - Low tea yields due to little knowledge on tea culture - Labour competition between estates and smallholders - Limited training for smallholders	- District Agricultural extension - Land and water conservation measures by Min. of Agric. - Rapid afforestion for timber and fuel - Land preparation using animal draught power - Promotion of the use of herbicides - Feasibility studies on establishing fertilizer and pesticide plants - Proposal to establish regional tree crops college by Tea Research Foundation-Study underway - Training and extension Services by Tea Research Foundation

Processing	Done in large factories on estates and small holders Malawi tea factory at Mulanje	- Old equipment machinery in tea factories - Poorly trained technicians for maintenance - Lack of spares due to forex shortage - Inferior capacity utilization due to poor maintenance - Unbalanced withering and drying capacities - High transport costs - Deterioration of made tea quality and grades due to poor processing	- Promotion of agro-industries - Modernization of the agroindustrial sector through provision of incentives of partial retention of export earnings for purchasing spares, equipments and other inputs, local fabrication of spares & rehabilitation of agroindustries - Further development of water and electricity supply such as the Shire river hydro-electric scheme - Technical training in industrial technologies - Rehabilitation of road railway services

Marketing and Consumption	- Green leaf purchased from smallholders by Malawi tea factory - Smallholder Tea authority overseas marketing - Made tea sold through Malawi Tea Association and brokers at Limbe and London tea auctions - Low local tea consumption	- Low prices of green leaf paid to small-producers - Low prices of made tea paid to producers due to fluctu-ating world market prices and high govt controlled - Low purchasing power limits local consumption	- Trade liberalization - Financial decontrol and free pricing - Revision of taxes, tarrifs and cess - Regional trade promotion in SADCC and Preferential Trade Agreements (PTA)
Energy	- Hydro and thermal electricity - Rural areas heavily dependent on fuel wood - Little coal used.	- Relies heavily on imported oil and oil & products - Requirements not met - Deforestation	- Development of Shire river hydroelectric scheme - Rehabilitation of thermal plants. Development of coal deposits

1.4.1 The Agricultural Sector

On going agricultural activities by the government, related institutions and the private sector address some of the problem areas as indicated in Table 6 but not adequately. Activities related to tea have been set out in the Government Statement on Policies and development 1987-1996.

The Ministry of Agriculture is seriously pushing all round crop and livestock production through district extension programmes with a strong extension component. Land soil and water conservation measures are accompanied with rapid aforestation to provide among other things fuel for household and industrial uses. Land preparation using labour saving methods such as animal drawn ploughs and small tractors are being emphasized as well as herbicides to ease weeding.

Feasibility studies have been carried out to establish local production of fertilizers and pesticides to raise production and reduce foreign exchange bills.

1.4.2 Industrial Sector

In this sector emphasis is still on agroindustrial processing of local materials to increase value added from food and cash crops. Adoption of up to date technologies is underway spurred on by relaxed foreign exchange controls to ease importation of inputs such as machinery, equipment, vehicles and related raw materials. Fabrication or spare parts locally for machinery rehabilitation is on the increase.

Pricing and marketing policy measures have decontrolled prices. Government is upgrading transport outlets such as the northern road corridor and the railway system through Mozambique to cut down costs. Feeder roads in rural areas are being rehabilitated.

Services to industry such as water and electricity are developing fast. The Malawi Electricity Supply Corporation has ongoing proposed projects to utilize the Shire river to provide enough electricity.

In social services education from primary to university level is producing needed learned manpower capable of embarking on training in agriculture, industry, finance and management which are needed in the tea industry.

1.4.3 Ongoing Activities Related to Aid Agencies and affecting the Tea System

The government has several aid projects in the agricultural and industrial sectors in collaboration with United Nation agencies. The United Nations Development has projects in various stages or implementation on training in land use husbandry, engineering, finance and management. Others include agricultural produce marketing, animal power, village access roads, rural housing, health, food security and human nutrition. All these activities have a direct bearing on the tea industry and a summary of major activities is given in Table 7.

Table 7: Ongoing Major Activities involving Technical Assistance and Investment Related to Tea

Component:	Ongoing Projects/Programmes by aid agencies (UN, bilateral cooperation + SADCC).
Production	- EEC Malawi Govt. Smallholder tea production and research, MK 3n.1 mil. Duration- 5 years and has started. - UNDP technical aid to Tea Research Foundation in Mulanje US $ 1 mil. for 3 years, ongoing - FAO support to promote animal draught power-study ready. - UNDP support to institutional building ongoing. - FAO Land Resource Evaluation project - underway. - FAO support to soil conservation & afforestation project - underway. - SADCC related projects . Pesticide and insecticide formulation plant, US $ 0.12 mil, study completed . Market for fertilizers + integrated plant, study ready . Irrigation pumps, US $ 0.18 study ready by EEC.
Processing	SADCC related projects . Establishment of steel plate , US $ 0.17 mil-study ready . Study on regional technical skills, US $ 0.07 mil study ready . Upgrading engineering skills, US $ 0.85 mil, study ready . Rehabilitation of foundries, US $ 0.18 mil study ready, Agric. implements in Malawi, US $ 3.0 mil, underway - Local fabrication of local spares - UNIDO Study on.

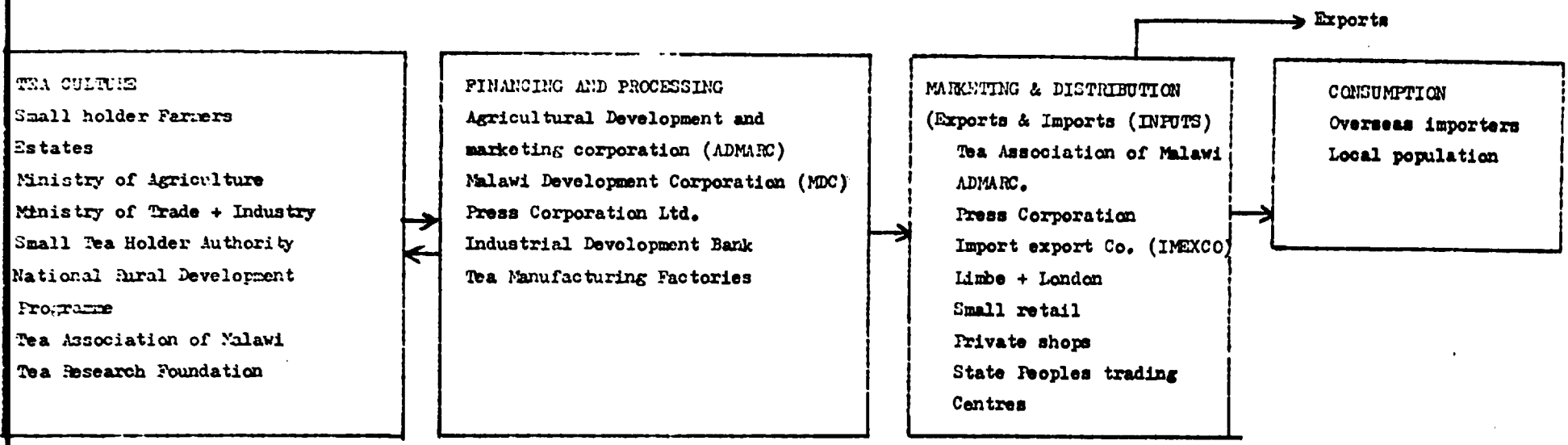
Marketing

- USAID study on exported agric. commodities in the region & potential. US $ 0.05 mil. completed
- CIDA Studies: On system of general trade preferences for companies in the region. Trade Measures. bilateral trade agreements. SADCC trade directory. US $ 0.12 mil-done.

1.5 Institutional Framework for Development of the Tea Industry

The major institutions and agents are summarized in Figure 4.

FIG. 4..... BASE SCHEME OF PRODUCTION, PROCESSING, MARKETING AND CONSUMPTION AGENTS OF TEA IN MALAWI



The major institutions effectively addressing the tea system as shown in Figure 4, are government ministries especially Agriculture, Trade and Industry providing policy, strategies and technology. The Tea Association of Malawi, the Small Holder Tea Authority and the Tea Research Foundation all participate in tea production, processing and marketing components in the system. The production sector links into the industrial tea subsystem where manufacturing is well supplied with green leaf for processing. The marketing and distribution system is dominated by tea brokers and London and Limbe auctions which market made tea ready for export thus procuring earnings that benefit producers and the nation as a whole. Details are given in the following section.

1.5.1 The Ministries of Agriculture, Trade and Industry

These ministries stimulate policies and guidelines for the tea system and ensure proper incorporation into the overall development of the agricultural and industrial sectors. Government also controls the prices of green leaf through the parastatal Smallholder Tea Authority. It also levies taxes on tea sales and this affects the overal returns paid to producers which in turn affects performance in the industry, for example the low prices paid to small holders and marginal profits realized by estates have depressed producers and some tea growers have already diversified into more lucrative food crops such as maize or cash crops such as coffee and macademia nuts.

1.5.2 The Tea Association of Malawi (TAML)

The association is a limited company by guarantee and it is a constituted corporate legal entity. TAML represented the interest of tea producers or estates.

TML raises a cess on tea production through the Tea Cess Act whereby government controls the level of the cess. All growers with factories are members and the cess is paid on made tea.

The association concerns itself with all matters pertaining to tea at national and international levels. On the international level TM attends tea conferences organized by United Nation Agencies and other organizations, as advisers or as part of government delegations. At national level, the association is represented on boards, committees and councils whose functions are related to the tea industry.

TML keeps contact with government ministries (mainly Agriculture, Trade and Industry, Transport and Finance), the Reserve Bank and associations such as the Chamber of Commerce, Tea and Coffee Merchants on matters which affect the tea industry.

TML owns and finances the Tea Research Foundation through the cess on tea to carry out relevant research and development work on tea culture/husbandry processing and quality.

TML funds tea promotion mainly through the United Kingdom Tea Council. It also at times acts as the industry's importer of inputs such as fertilizer, negotiates relevant contracts for members and freights with conference lines. It also negotiates auction rules with the local brokers.

1.5.3 The Smallholder Tea Authority (STA)

This is a parastatal for promoting small tea growers in Malawi and owns the Malawi Tea Factory in Mulanje district. It has 4800 member growers in Mulanje and Thyolo districts with 236' ha (by 1988). Growers usually plant vegetatively propagated tea (V.P.T) which is improved material researched and recommended by the Tea Research Foundation.

The STA provides the following services to member tea growers:-

- Longterm credit up to and exceeding 21 years on planting material and during the first five years of establishment in the field on fertilizer.
- Seasonal credit for purchasing fertilizer to growers with a good payment record
- Dissemination of technical advice, management and financial advice.
- Purchase of green leaf from smallholders and resale to contracting factories. It also transports the leaf to the factories as well as transporting and delivering fertilizer and pesticides to growers.
- TSA makes monthly cash payments for green leaf purchased from November to May, this being the lean period when members income is low as other crops are still growing or unharvested.
- TSA prepares regular operating budgets and gets funds from government to do its work as any other parastatal including long term borrowing from government and commercial banks.
- Training by STA for small tea growers includes seminars and demonstrations on teaching plots in tea areas. It participates in agricultura shows, runs in-situ courses on growers tea gardens covering tea husbandry, planting, agronomy, prunning, tipping and plucking in collaboration with the Tea Research Foundation, fertilizer and pesticide commercial firms and extension services. The STA has administrative staff, field block managers and field extension staff, all serving small growers.
- STA organizes tea growers fields into blocks and extension services are provided by 20 section managers each responsible for growers in one or two blocks. Production managers are responsible for supervision of plucking, buying and transportation of green leaf.

1.5.4 The Tea Research Foundation (TRF)

The foundation which is an independent body serves Central and Southern Africa, promoting research into all matters concerned with tea. It has stations at Mimosa, Nsuwadzi and Thyolo. Research and development work on tea covers the following major areas manned by 16 senior scientific staff and 40 support technical staff.

- Tea agronomy experiments include field trials on planting materials and fertilizer response and yields, pruning cycles, plucking regimes, shade effects, irrigation, cultivation rehabilitation and replanting.
- Tea horticultural work includes nurseries for producing improved planting material for experiments, estates and small growers.
- Plant Breeding involves developing tea materials with high yields and good tea quality to meet consumer demand.
- Plant protection work consits of evaluation of cultural and chemical methods to control the major tea pests in the country.
- Productivity studies cover work study, plucker productivity in relation to management and environmental variables.
- Advisory and smallholder liaison services provide linkage between researchers and growers in cooperation with the STA and TMI.
- The Biochemical and chemistry section works on all aspects of tea quality in fresh and processed leaf.
- Process Engineering runs two small tea factories which manufacture tea from experimental plots and the stations estates which provide welcome income to the foundation. It develops processing parameters and variables necessary for the manufacture of good quality tea.

1.5.5 The Malawi Tea Factory Company Ltd (MATECO)

MATECO is a parastal company headed by a manager with 60 technical and support staff. It is relatively new with modern Lawrie Tea Processing (LTP) equipment. The factory purchases green leaves from small growers under the STA and the research foundation (TRF) mostly from the Mulanje district. It has a withering capacity of 90,000 kg of green leaf per day, but is overworked, now handling on average 125,000 kg. of leaf per day, thus leading to loss in quality of dry tea. The factory uses a lot of firewood for drying and carries out routine tea manufacturing operations as already indicated in figure 2 covering receiving green leaves, withering in troughs, rolling and cutting, fermenting, drying, grading and packaging for sale at the Limbe or London tea auctions in cooperation with the Tea Association of Malawi and tea brokers.

The factory took in 10.4 milion kgs of green leaves in the 1988/89 season and produced 2.3 million kg made tea which was auctioned at 225.7 tambala per kg at the Limbe Tea Actions and 420.4 pence, per kg at the London Auctions.

1.5.6 Made Tea Marketing

This activity is done through brokers. At Limbe in Malawi tea from factories is sold by brokers such as the Central African Tea Company and in London through the UK. Tea Council. The auctions therefore play a very important role in linking producers and consumers.

1.5.7 Linkages and Potential

From the aforementioned institutional framework main vertical and horizontal linkages between production, processing and marketing are implicit. Potential partners include the Government of Malawi, the Tea Association of Malawi, the Smallholder Tea Authority, the Tea Research Foundation and the Malawi Tea Factory Company Ltd.

2.0 PROGRAMME JUSTIFICATION

The tea industry has constraints which must be addressed in an integrated manner. The major constraints are outlined below:-

2.1.0 PROBLEMS: BOTTLENECKS AND CONSTRAINTS IN THE TEA INDUSTRY

There are major bottlenecks and constraints hindering the development of tea towards government objectives. These are presented under the production, manufacture and marketing components. These are again subdivided into smallholder and estate sectors as both have different sets of problems requiring different approaches.

2.1.1 Tea Production

(a) Smallholder Sector

Limited available land: There is land/population pressure with a population density of 60-85 people/km^2 in tea areas in the south. The average land holding is only 0.5ha. per individual and this is decreasing fast due to the rapid 3.2% population growth per year. Efforts to maintain food production growth ahead of population growth have created competition between food crops and tea production.

Tea production is low as average yields are about 1,000 kg/ha (made tea) against about 2,000 kg/ha in estates and 4,500 kg/ha from the Tea Research Foundation.

Recent studies have shown that among smallholders, average bush coverage is about 70-75% leaving about 28% vacancies or 30-35%. Currently small growers have 2,370 ha of tea. If 25% of planted land is vacant, there are therefore about 600 ha, that could produce an extra 502 tonnes of made tea per year at 1989 smallholder yields/ha. This represents lost earning of US dollars 0.42 million at current Limbe auction prices.

The same argument applies to estates where vacancies reportedly average 20-25%. Extra returns could be gained through expansion by infilling. Now operating costs per bush are high (notably transport) due to the high vacancies and the dispersed nature of production. Infilling is therefore more attractive and economic compared to establishing new areas.

However, expansion is constrained by difficulty in planting, weeding and rendering young new bushes among old ones, thus raising labour costs in the short run.

On the other hand opening up entirely new areas is constrained by very high initial capital costs in setting up the whole infrastructure from land preparation and planting to processing if extra processing capacity is not available.

Poor knowledge on tea culture especially agronomic practices, pest control and handling aggrevates the situation along with poor management.

Weeding standards vary much as weeding is often done by hand. Limited use of herbicides lowers husbandry standards and yields and raises costs although this displaces human labour and reduces peasant income.

Pruning done biannually, requires skilled labour unlike plucking, which is done on a 14 day cycle by small growers and 10-11 day cycle on estates. Smallholders therefore suffer lower yields compared to estate.

low use of fertilizers and chemicals without following strict recommendations from the Tea Research Foundation lower yields per bush and hence total yield per hectare especially among small growers.

Small grower yields are currently about 820 kg/ha or made tea while estates average 2,300 kg/ha made tea. The Research Foundation have achieved up to 4,500kg on growers plots under supervision. This shows that the big potential to raise yields per unit with good economic returns is not realized.

Limited access to credit facilities constraints acquisition of inputs by smallholders whose income is low as only about 50% of the growers earn MK 20 per month.

(b) Private Estates

Problems here differ. Land is not limited but is under utilized. On the average only 80% of leased land is fully utilized, owned by absentee landlords and run by hired managers. Land management and soil conservation are generally inadequate.

Hired labour is a big constraint unlike the smallholder sector, especially during peak times. The workers are drawn from the surroundings so there is competition between estate needs and workers own food and cash crop requirements. This has recently been aggravated by recent farm wages increment of 170% per month to Tambala 174 per day. Estates claim they cannot afford this and stay in business.

c) Tea marketing

There are big constraints in the tea marketing component for all growers. The world tea market changes are unpredictable, though now prospects are reasonable. The quarter system if revived might help. Locally, the prices of green leaf paid to small growers, (22t/kg in 1989) is a big disincentive while the Malawi Tea Factory of the STHA pays only 25-30% of the price realized at auctions to farmers at green leaf equivalent.

This is only a residual as the rest goes to overheads on the STHA expenses and repayment of credit. On the other hand estates handle, process and market their own produce and hence achieve slightly better returns than small growers. There is no clear cut strategy to deal with this issue and there is no study on the whole structure of the marketing system to achieve just returns to all growers.

Issues related to taxes, tarrifs, transport and overhead costs have not been adequately addressed. Tea prices at local auctions in Limbe are higher than at the London auctions, yet most tea is sold in London, realizing less earnings. Little amounts of tea are sold by direct treaty on the better priced, free market. For example the Smallholder Tea Authority does not sell directly in the world market and there is no agressive marketing approach at regional level (SADCC and PTA) to realize more sales to Zambia, Botswana and Mozambique.

Earnings do not quite meet rising costs and this has been a constraint and has discouraged producers. Some are already diversifying into coffee, macadamia nuts and local staple foods. Local tea consumption is also limited by the low local purchasing power which cannot stimulate local sales.

2.1.2 Tea Manufacturing Sector

Aging factories, especially the earlier ones with old equipment have constraints in performance and efficiency. Old equipment and machinery bottlenecks are worsened by limited foreign exchange to buy spares and limited capability for local fabrication. Lack of sufficient manpower in particular local engineers and technicians, impairs performance and adequate maintenance. Lack of well trained factory managers and suport staff with good financial and management skills further constrains the system.

a) Tea Processing Sector

Looking at processing analytically, tea manufacture involves removal of water from the leaf in two stages: withering and drying of fermented leaves. In a balanced system withering and drying are in step. Unfortunately in the tea industry in Malawi, there is imbalance in the two stages and this is a major constraint. The Lowrie Tea Process (LTP) mostly in use in Malawi requires proper withering to improve cutting performance and increase percentage of fine product which fetches higher prices.

In addition the imbalance in drying raises costs as the withering procedure does not achieve optimum leaf shrinkage and bulk reduction. This lowers returns through lower product quality, and increases bottlenecks experienced in fermentation, drying, sorting and packaging.

Two other major problems linked with unbalanced systems are high wood fuel consumption costs due to excessive reliance on drying, lack of recycling stages for hot air and heat losses through the drying system.

These problems cause a big demand for expensive wood and deforestation is endangering the environment. Consequently made tea is not of optimum quality and compounded with inadequate handling in the hot humid environment, deterioration of product quality occurs, thus lowering prices fetched at auctions.

Capacity utilization in the estate factories is seasonal and averages only 60%. This is worsened by poor power supply from electricity which has frequent low voltage and black outs, causing burning of wasted leaf with considerable losses.

The Smallholder Tea Authority has expressed the need to have a new factory built at Malamia in Thyolo, to stimulate higher tea hectarage and reduce high transport costs and reduce dependence on private estates who process their leaves on contract. The estate services have been inadequate especially at peak times or during power failures.

Research and Development on tea processing at the Tea Research Foundation is constrained by lack of enough scientific staff, thus depending much on expatriate labour. Lack of funds for research on tea culture and processing was stated as the most serious problem. This has limited processing and dissemination of scientific findings to growers.

b) Transportation

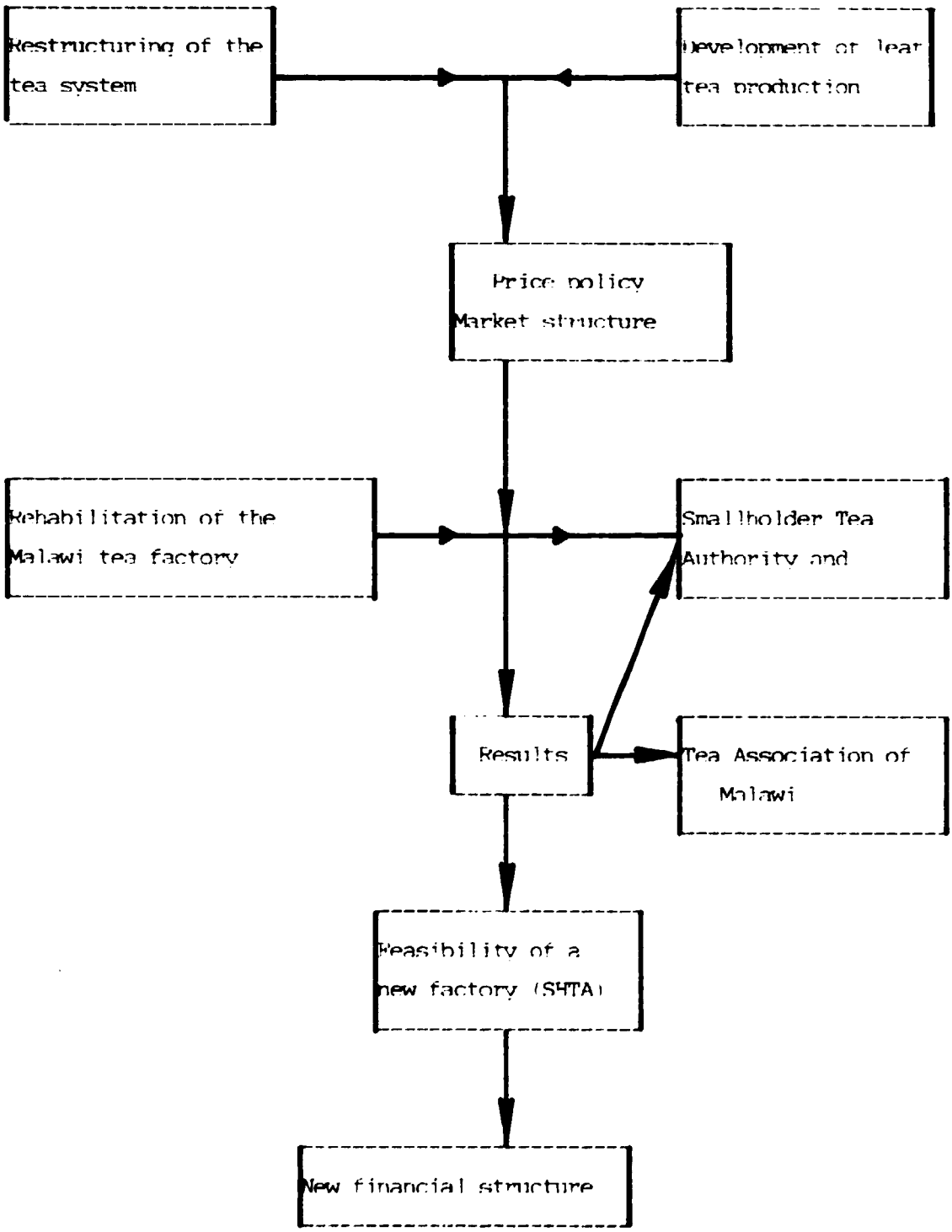
Production and transportation costs are high due to lack of adequate labour saving harvesting, processing and transportation devices. Transportation costs of green leaf in Thyolo are excessive since there is need to move green leaf all the way to Mulanje, more than 60 km away. At national level, the transport cost factor for exported tea is 40% through the northern (Tanzania) and Southern common routes (South Africa). Alternative routes using the railway line through Nacala in Mozambique or linking up with the lines to Beira and Maputo, would bring the factor cost to about 15% of cost but this is impossible due the current war in Mozambique. However all the aforementioned can be surmounted through the strategy set out in the following section.

2.2 Analysis, and Choice of Strategy

In view of the above mentioned constraints, on going and pipeline projects, programmes and government objectives, policies, and activities on development, the selection of a preferred effective strategy will require a general strategy combined with an indirect one as set out in the scheme presented in Figure 5.

Figure 5: STRATEGY DIAGRAM

To increase production of made tea in terms of quality, quantity and competitivity with a social component



This would require doing the following:

- To completely, disaggregate the tea system.
- To study in depth each component divided into two sets namely:
  - The common components for smallholders and estates covering transportation, price policy, distribution channels, commercial channels, export and internal markets.
  - The smallholder part and the Tea Association of Malawi.

Following the strategy proposed above, the following projects, among others, would need to be undertaken in order to achieve an integrated tea programme for Malawi. These projects could be subdivided as follows:-

A. Agricultural Related Projects

These would address the development of tea leaf production especially among small growers. The following projects could be undertaken, by FAO in collaboration with the Smallholders, Tea Authority and the Tea Association of Malawi.

1. Support to expansion of smallholder tea production
2. Training smallholder tea growers in tea husbandry
3. Strengthening extension services in tea growing areas.

B. General Projects

4. A study on each component of the transportation system
5. A study on price policy and credit facilities

C. Specific Projects

6. Rehabilitation of components of the Malawi tea factory
7. Support to Tea Research Foundation
8. Feasibility study on the production of oil from tea seed
9. Caffeine from Tea feasibility study.

9. Other projects to be undertaken after agricultural related projects, general and specific projects have been done:

10. Rehabilitation of factories in the tea industry in collaboration with the Tea Association of Malawi

11. Strengthening Management and support staff in the tea industry.

The proposed projects would then result into a pilot project by the Smallholder Tea Authority in the form of a new factory which will serve as a reference for the Tea Association of Malawi. Before this project is undertaken it would first be necessary to study **the feasibility for a new factory** under the Smallholder Tea Auhority jointly with foreign groups encompassing a new financial structure as indicated in the strategy scheme summary.

2.3 Expected end of Programme Situation could be

- 10-15% participation of smallholder in the whole tea system from production to made tea.
- Better profit income to small holders
- Less internal effect from erratic world prices
- Adaptation and modernization of the tea system according to international competition. Details are given in the following section.

2.3.1 Tea Production

Green leaf production and made tea is expected to rise by about 30% through vacancy infilling and expansion into new areas and hence increase growers income.

Training projects will have facilitated acquisition of good knowledge and skills on tea culture for small tea producers and raise yields per unit area through proper tea husbandry. The extension services on tea will have considerably improved too. Research and development on tea will have developed new improved varieties which will have been promoting among tea growers, thus raising overall production.

2.3.2 Tea Processing

If rehabilitation work on tea processing factories is successfully carried out, and processing parameters are optimally carried out, more and better quality tea will be produced and hopefully fetch better prices. This will obviously bring better returns. There will be more and better trained technicians. Factories will be better maintained through strengthened maintenance capability and spares provision, hence higher utilization of installed capacity.

2.3.3. Marketing and Prices

Though the marketing subsystem is well established, it is hoped that at the end of the programme, marketing and pricing policies will have improved and better prices paid to tea growers. This will mean higher income to growers, if the world price of tea rises and stabilizes.

2.3.4 Financial operations and management are expected to have improved using modern techniques and methods for smooth operation record keeping and reporting.

3.0 INTEGRATED DEVELOPMENT PROGRAMME FOR THE TEA INDUSTRY IN MALAWI

3.1 A short summary of the proposed programme projects, estimated duration and tentative budget are given in Table 8:

Table 8: Summary of Programme Projects

Project Titles	Duration	Costs	
		Foreign US $	Local MK
1. Support to expansion of small holder tea production	10 years	16 ml	29 ml
2. Training smallholders in tea husbandry	5 years	7.1 mil	3.9 ml
3. Strengthening Tea Extension Services	5 years	6.5 m;	3.5 ml
4. Study on transportation system related to tea industry	3 months	30,000	-
5. Price Policy market structure and credit	3 months	30,000	-
6. Malawi Tea Factory Support	12 months	860,000	250.000
7. Support to Tea Research Foundation	5 years	4 mil	1.7 ml
8. Oil from tea seed study	4 months	50.000	-
9. Caffeine from tea waste study	2 months	27.000	-
10. Tea factories rehabilitation	8 years	21 mil	9.6 mil
11. Strengthening Management and Support staff in the tea industry	5 years	1.5 mil	1.3 mil
12. Feasibility of a new factory for the Smallholder Tea Authority	2 months	20,000	-
Total		57.2 mil	49.3 mil

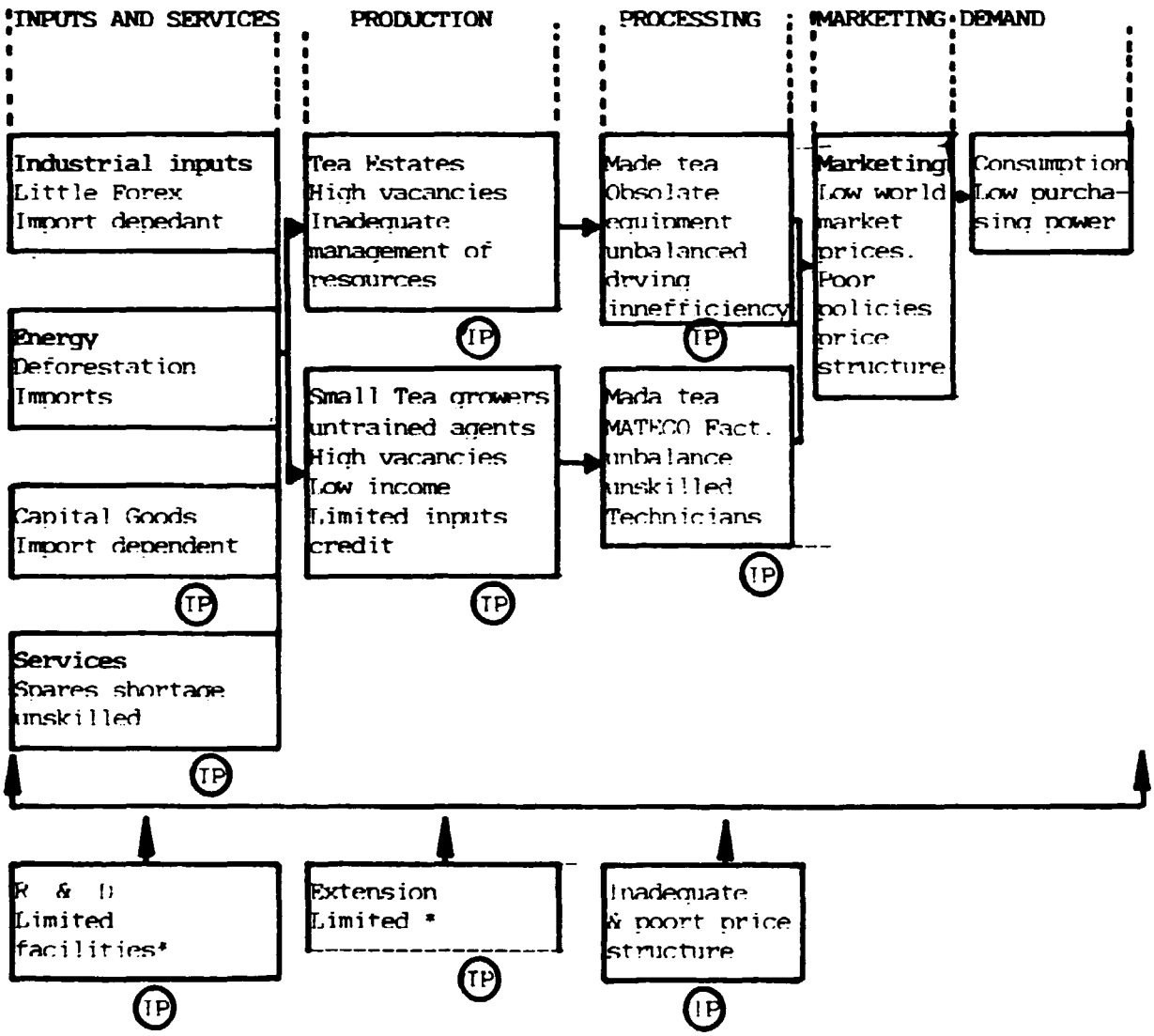
In order to facilitate understanding of the proposed projects in relation to major constraints in the tea industry a summary is given in Table 9.

Table 9: Summary of Major Constraints and Proposed Programme Projects

Component	Major Constraints	Proposed Programme Projects
Production	Vacancies in growing areas Low tea yields Poor husbandry Limited knowledge among small growers Poor transport facilities	- Support to small tea growers Tea husbandry training to small holders - Strengthening extension services to small tea growers - Study of transport components
Processing	- Obsolete machinery and facilities - Lack of spares and good maintenance - Inferior capacity utilization - unbalanced processing systems and quality control - Poor transport facilities	- Rehabilitation of the Malawi tea factory including training - Support to the Tea Research Foundation - Study on tea seed oil - Study on caffeine from tea - Rehabilitation of tea factories - Training management and support staff - Feasibility study on new STA tea factory
Marketing & Consumption	- Low and fluctuating prices - Limited consumer purchasing power - Low consumption of tea	- Study on price, policy and credit facilities

To further elucidate the proposal, a schematic base diagram of the tea system components, major constraints and projects is given in Figure **6**. The diagram shows the main linkages according to the strategy chosen for effective development of the tea industry in Malawi.

Figure 6: BASE DIAGRAM OF CONSTAINTS IN RELATION TO PROPOSED PROGRAMME IN THE TEA INDUSTRY IN MALAWI



Key: * Ongoing projects

IP- Intervention projects in proposed programme (IP)

3.2 INTEGRATED TEA PROGRAMME IN DETAIL

Details of the proposed integrated programme for the tea industry is given in the following sections:-

3.2.1 Objectives

The proposed integrated tea programme for Malawi has the following objectives:-

a) General Objectives

- To increase the local production of tea leaves and processed tea from smallholder and estate enterprises
- To increase the value added generated in tea production and processing.
- To effect more internal integration of the various productive processes
- To improve linkages between smallholder producers, processors and merchants
- To promote better technologies throughout the tea industry.

(b) Specific Objectives

- To increase cultivated area under tea especially in estates where land is under utilized
- To promote the cultivation of improved higher quality high yielding tea varieties
- To improve plucking and handling of harvested green tea leaves especially by small holder producers
- To improve factory capacity utilization by provision of spares and maintenance facilities.

2.3 PROJECT CONCEPTS

Following the proposed strategy it would appear that the analysis indicates that only technical assistance projects are deemed to be effective now. Potential investment projects have only qualified for prefeasibility and feasibility studies. The projects ar therefore categorized into agricultural related projects, general projects and specific projects as presented in the following section.

TECHNICAL ASSISTANCE PROJECTS

AGRICULTURAL RELATED PROJECTS

1. Title: Futher Support to Expansion of Smallholder Tea Production in Mulanje and Thyolo Districts

Estimated Duration: 10 years
UNIDO/FAO Contribution: US $ 16 million
Government Contribution: MK 29 million

Brief Project Description

A. Problems to be addressed

1. Sectoral level

- Underdevelopment in the agrofood industry
- Low export earnings from agroindustry for national development

2. Project Area

- Low production of tea by smallholders
- Many vacancies in planted areas
- Under utilized potential in tea growing areas
- Low income among small tea growers

B. Concerned Parties and Beneficiaries

1. The ministries of Agriculture, Trade and Industry and the Smallholder Tea Authority are concerned parties
2. The Smallholder Tea Authority and small tea growers are target beneficiaries.

C. Preproject and End of Project Situation

1. Preproject

- Limited green leaf production by smallholders
- Many vacancies in planted areas
- Low income for small tea growers

2. End of Project Situation

- Higher production of green leaf and made tea
- Adequate infilling done hence good coverage in tea areas
- More income for tea growers

D. Special Considerations

Particular attention should be paid to women involvement

Environmentally, good coverage will reduce soil erosion.

E. Other Donors

The European Economic Community (EEC) has pledged some funds over the next six years.

F. Major Elements

1. Objectives

- To increase the amount of green leaf by 30% in 10 years
- To plant tea clones in vacancies in existing areas and expansion into new areas.
- To raise producers income by 20% over the period depending on tea prices.

2. Activities

- Consolidation and infilling of existing areas already planted through improved extension services. Later expansion into new areas.

- Procurement and distribution of improved vegetative propagation material as recommended by the Tea Research Foundation.

- Provision of inputs (fertilizer and pesticides).

3. Output

- Higher production of green leafy and made tea.

- Producers are expected to earn more money.

G. Host Country Commitment

The ministries of Agriculture, Trade and Industry and the Smallholder Tea Authority are very much interested.

H. Risks

In the short and long term, the project might be jeopardized by drought and the ever fluctuating world tea prices.

I: Inputs

1. Skeleton Budget	UNIDO Contribution US $	NATIONAL MK
Personnel	-	20,000,000
Fertilizer and chemicals	10,000,000	2,000,000
Operational costs and material support	5,000,000	5,000,000
Miscellaneous	1,000,000	2,000,000
Total	16,000,000	29,000,000

J. Workplan

	Periods years									
Activities	1	2	3	4	5	6	7	8	9	10
Infilling vacancies	----------									
Expansion into new areas			----------							
Wider distribution of improved clones	----				----				----	
Provision of inputs	----------									

2. **Title: Training Smallholder Growers in Tea Husbandry**

Estimated duration: 5 years

UNIDO/FAO Contribution: US $ 7.1 million

Government Contribution MK: 3.9 million

Brief Project Description

A. Problems to be addressed

1. Sectoral Level

- Inadequate agricultural production in export commodities
- Low income from the agrofood industry

2. Project Area

C - Insufficient tea production by small holders
- Low quality tea leaves
- Subontimal vields of greenleaf per hectare
- Substandard use of inputs such as fertilizers and chemicals.

B. Concerned Parties/Beneficiaries

1. The Ministries of Agriculture, Trade and Industry and the Smallholder Tea Authority are very much concerned
2. Smallholder tea growers will benefit directly

C. Preproject and End of Project Situation

1. Preproject

- Inadequate tea culture among small growers
- Low vields per ha
- Subontimal knowledge on tea husbandry

2. End of Project Situation

- Higher knowledge in tea culture among small growers
- Better yields of green leaf per ha
- Good cultural practices in tea production

D. Special Considerations

- Women should be the focus of the project as they stand to benefit much
- Malawi could offer training to neighbouring countries tea growers

E. Other donor efforts

The EEC has been recommended to work out training needs

F. Major Elements

1. Objectives

- To acquire improved skills in tea culture from production to harvesting and handling
- To increase yields per ha
- To get better returns from tea

2. Activities

- Conducting informal courses on tea culture to growers
- Demonstrations on teaching plots on good growers gardens by extension staff, section managers and Tea Research Foundation liaison staff
- Visits to growers by extension staff
- Organization of more field days
- Showing films on the tea industry to growers
- Run regular radio programmes and press on tea

3. Output

- Higher yields of green leafy/ha
- 2000 extra tea growers trained in tea husbandry
- Increased income to tea growers

G. Malawi Commitment

The government is highly interested as stated by the ministry of Agriculture

H. Risks

1. There are no risks that might initially affect the project objectives and outputs.
2. In the long run the world tea price behaviour and weather conditions might affect production and returns, hence participants interest.

I. Inputs

1. Skeleton Budget	UNIDO	National (MK)
Personel	-	2,000,000
Training	5,000,000	1,000,000
Equipment	2,000,000	500,000
Miscellaneous	100,000	400,000
TOTAL	7,100,000	3,900,000

J. Work plan

Activities	Period (years)				
	1	2	3	4	5
Tea growers courses	----	----	----	----	-----
Demonstration plots	----	----	----	----	-----
Field days		----	----	----	-----
Radio programmes		----	----	----	-----
Showing films on tea	----	----	----	----	-----

3. Title: Strengthening Extension Services in Tea areas

Estimated Duration: 5 years

UNIDO /FAO Contribution: US $ 6.5 million

Government Contribution MK: 3.5 million

Brief Project Description

A. Problems to be addressed

1. Sectoral level

- Inadequate development in the agroindustry
- Weak extension services within the agricultural sector

2. Project Area

- Subnormal tea production levels
- Unsatisfactory tea husbandry practices
- Limited knowledge and skills among tea growers especially small producers.

B. Concerned Parties/Beneficiaries

1. The problems were identified by the ministry of agriculture, the Smallholders Tea Authority and the Tea Association of Malawi.
2. Small tea growers in Thyolo and Mulanje are likely to benefit most.

C. Preproject and End of Project Situation

1. Preproject

- Limited knowledge and skills on tea culture by small growers
- Poor tea extension services.
- Low income by tea growers

2. End of Project

- Good knowledge and skills on tea growing and handling by small producers
- Improved extension services
- More tea production
- Increased income among tea growers

D. Special Considerations

Both men and women participate in tea growing. Special approaches and methodology will have to be used as most growers have a low literacy rate. They live in typical rural environments with limited access to news papers and the radio. There is no television service.

E. Other Donor Projects: The EEC has pledged some support

F. Major Elements

1. Objectives

- To raise the level of knowledge and skills of tea extension staff
- To impart better tea culture methods to growers
- To eventually raise growers income

2. Activities

- Run courses for tea extension staff
- Produce and print material on improved tea culture
- In country and regional study tours
- Organise training seminars and workshops on tea production and handling for growers.

3. Output

- Acquisition of improved knowledge and skills by tea extension staff for dissemination to growers
- A better extension service to growers
- Better yields for growers and higher productivity and income.

G. Malawi Commitment

1. Government is highly interested as borne up by establishing the Smallholder Tea Authority

2. The Tea Association of Malawi which represents estate tea production is an obvious counterpart institution.

H. Risks - None forseen

I. Inputs

Skeleton Budget	UNIDO (US $)	National Share (MK in kind)
Personnel	-	2,000,000
Training	4,000,000	1,000,000
Materials	2,000,000	500,000
Miscellaneous	500,000	-
TOTAL	6,500,000	3,500,000

J. Work plan

Activity	Periods (years) 1	2	3	4	5
Courses for tea extension workers	---		---	---	---
Production and printing of material on tea culture	----------				
National and regional study tours	---		---		---
Workshops and seminars for tea growers	---	---		---	---

GENERAL PROJECTS

4. Title: A Study on Each Component of the Transportation System as Related to the Tea Industry in Malawi.

Estimated Duration: 3 months
UNIDO Contribution: US $ 30,000
Local Contribution: Nil

Project Description

A. Problems to be addressed

1. Sectoral level

- Inadequate and problematic transport system (road, railway and water ways).

2. Project Area

- Limited road, railway trasport fleet and rolling stock
- Poor supply of spares due to forex shortage
- Inadequate transport in tea estates and small producer areas.

B. Concerned Parties/beneficiaries

1. The ministries of Agriculture, Trade and Industry, the Tea Association of Malawi and the Smallholder Tea Authority.
2. All agents in the tea industry will benefit from the results of the study.

C. Preproject and End of Project Situation

1. Preproject

- Unclear picture on the situation on the transport requirements for the tea industry.

2. End of project situation

- Clarity on the transport situation on tea related transport system

D. Special Consideration

Since Malawi is land locked, the study should indicate regional linkages with neighbouring SADCC member states.

E. Other Donor Projects

The EEC is considering rendering some assistance to the Tea Authority.

F. Major Elements

1. Objectives

To acquire deep knowledge on the tea transportation system
To improve the transportation of tea

2. Output

A report report on the tea transportation system

3. Activities

Study in detail each component of the tea transport system with focus on smallholders and estates.

G. Host Country Commitment

The Tea Authority, the Tea Association of Malawi and the Malawi Government are interested.

H. **Risks: None forseen**

I. **Inputs**

Skeleton Budget	UNIDO Contribution	Local Inputs

J. **Work Plan**

Activities	**Period Months**		
	1	2	3
Field work study	---------		
Report writing			------

Title 5: Study on the Price Policy Markets + Structure and Credit Facilities with focus on the Tea System in Malawi

Estimated Duration: 3 months
UNIDO Contribution: US $ 30,000
Local Conrtibution: none

Brief Project Distribution

A. Problems to be addressed

1. **Sectoral level**

- Unstable low prices in the agroindustrial sector for raw materials and processed products
- Inadequate price policies
- Poor credit facilities

2. Project Area

- Unclear effects of trade liberalization
- Disincentive prices for green tea leaf and made tea
- Unattractive returns for tea growers
- Inadequate credit system for small tea growers

B. Concerned Parties/Beneficiaries

1. The ministries of Agriculture, Trade and Industry, the Tea Authority and the Tea Association of Malawi.

2. All tea producers stand to gain.

C. Preproject and End of Project Situation

1. Preproject

- Unattractive prices of green leaf paid to small growers
- Fluctuating world tea prices
- Low returns for tea producers

2. End of Project situation

- Understanding of the effects of trade liberalization and competition from other cash crops on local tea prices
- Policy recommendations
- Attractive tea prices paid to producers as an incentive

D. Special Consideration

Competition between cash and food crops for land and labour needs consideration.

E. Other Donor Projects: None identified so far

F. Major Elements

1. Objectives

- To clarify policy and price structure in the tea industry
- To improve tea prices paid to growers
- To sustain the tea industry as world prices fluctuate
- To achieve an attractive price and policy package

2. Output

- A report on the policy and price structure in the tea industry and relevant credit facilities

3. Activities

A consultancy and report on the policy and price structure and credit in the tea industry.

G. Country commitment

The Ministries of Agriculture, Trade and Industry as well as the Tea Association and Tea Authority are very much concerned.

H. Risks: None identified

I. Inputs

Skeleton budget	**UNIDO Contribution US $**	**Local Contribution MK**
Consultancy	20,000	Nil

J. **Work Plan**

Activities	Period (years) 1	2	3
Field Work	----------		
Report writing		--------	

SPECIFIC PROJECTS

6 **Title: Rehabilitation of Components of the Malawi Tea Factory**

Estimated Duration: 12 months
UNIDO Contribution: US $ 860,000
Local Contribution: MK 250,000

Brief Project Description

A. Problems to be addressed

- Limited withering area and shade
- Strain on drying system
- Unsatisfactory tea fermentation system.

B. Concerned Parties/Target Beneficiaries

1. The smallholder Tea Authority and the Malawi Tea Factory Co. Ltd.
2. Small tea producers will gain through better returns for higher quality made tea.

C. Preproject and End of Project Situation

1. Preproject

- Limited leaf withering space and shade
- Unsatisfactory fermentation process
- Dusty and unhealthy situation in the drying chamber due to lack of a cyclone
- Inadequate factory record keeping
- Shortage of spare parts

2. End of Project Situation

- More withering space and capacity to match installed processing capacity
- Satisfactory tea fermentation
- Clean healthy atmosphere in the factory
- Adequate computerized record keeping of factory operations
- Availability of local spare parts

D. Special Considerations

- Results from the modifications introduced at the Malawi Tea Factory could be passed on to neighbouring countries in the region
- Involvement of the local Small Industries Organization (SIDO)

E. Other donors Project None directly addressing the situation

F. Major Elements

1. Objectives

- To increase the withering capacity at the Malawi Tea Factory Co. Ltd.
- To modify the tea fermentation system in order to achieve higher quality made tea
- To clean the atmosphere in the drying chamber at the factory by recycling hot air
- To save fuel wood and energy
- To train technicians on tea machinery operation and maintenance
- To facilitate local parts fabrication

2. Output

- Increased withering capacity at the factory
- Higher production of made tea
- Better quality tea
- Cleaner working atmosphere
- Higher efficiency and reduction in energy losses
- Trained technicians
- Local spare parts

3. Activities

- Expand the withering capacity at the factory
- Modify the fermentation system
- Establish a cyclone system for recycling hot air
- Train technicians
- Set up facilities and make spare parts

G. Host Country Commitment

The Malawi Tea Factory management regard this project as a high priority.

H. Risks: There are no risks involved

I. Inputs

Skeleton Budget	UNIDO (US $)	Local (MK)
Training	150.000	60.000
Materials	-	140.000
Equipment + troughs	650.000	-
Making spare parts	60,000	50.000
Total:-	860.000	250.000

J. Workplan

Activities	Periods (months			
	1-3	4-6	7-8	9-12
Establish withering troughs and shade	----			
Training technicians		----	-----	
Modification of fermentation units		----		--------
Spare pars fabrication		----------		
Establishment of cyclone systems in the drying chamber	-----			
Provision of computer facilities	----		-----	

7: Title: Support to the Tea Research Foundation

Estimated duration: 5 years
UNIDO Contribution: US $ 4 million
Local Contribution: MK. 1.7 million

Brief Project Description

A. Problems to be addressed

1. Sectoral level

Limited research and development activities in the sector

2. Project Area

- Insufficient funds for research development on tea
- Inadequate training for some of the scientific personnel
- Insufficient level of performance

B. Concerned Parties/Beneficiaries

The Ministry of Agriculture, the Tea Association of Malawi, the Smallholder Tea Authority and the Tea Research Foundation are fully involved. In the long run, the research foundation, the tea authority and tea growers will benefit by applying new research findings.

C. Preproject and Expected End of Project Situation

1. Preproject

- Undertrained scientific research staff
- Inadequate output
- Limited access to up to date scientific information

2. End of Project Situation

- Well trained research staff
- Better research output
- A wealth of information on tea research

D. Special Consideration

The effects of using fertilizers, pesticides and other chemicals in tea production on the evironment and human health need special attention.

E. Other Donor Projects

The UNDP is helping the Tea Research Foundation with research facilities, study tours for staff and transport for 5 years. The British Government is providing technical assistance on computer/engineering services for 3 years. The EEC is helping the foundation on tea processing facilities.

The proposed project here addresses gaps left by the above mentioned benefactors.

F. Major Elements

1. Objectives

- To raise the performance of the Tea Research Foundation
- To facilitate better extension services to growers
- Provide improved planting material for tea producers

2. Activities

- Provision of scholarships for advanced training on tea research
- Support to the laboratory in the form of research facilities
- Facilitate more study tours and attendance at regional scientific meetings
- Support production of extension liaison material
- Fund subscriptions for international relevant literature.

3. Output

- Better trained staff to serve the tea industry
- More research findings on tea
- Material for dissemination to growers

G. Malawi Commitment

The government is very much interested. Counterpart institutions exist in the region i.e. the Zimbabwe Tea Association. The Tanzania Tea Authority. tea growers in Mozambique and Zambia all of which have links with the Tea Research Foundation.

H. Risks - None have been identified

I. Inputs

Skeleton Budget	UNIDO (US $)	National (MK)
Personell	-	1,000,000
Training	2,000,000	500,000
Equipment (Laboratory)	1,500,000	-
Miscellaneous	500,000	200,000
Total	4,000,000	1,700,000

J. WorkPlan

Activities	Period (years) 1	2	3	4	5
Scholarships	----------			----------	
Study Tours	----	-----		---	
Laboratory Support	-------				
Production of extension liasion material	----------				
Journals	----------				

8. Title: A study on the feasibility of Producing Oil from Tea Seed

Estimated duration: **4 months**
UNIDO Contribution: **50,000**
Local Contribution: **MK 20,000**

Brief Project Description

A. Problems to be addressed

1. Sectoral level
   - Limited national development in agro food industries

2. Project Area

   - Wastage of tea seed
   - Limited availability of vegetable oils

B. Concerned Parties/Beneficiaries

1. The Tea Association of Malawi and the Smallholder Tea Authority contributed in identifying the problems
2. The Tea Research Foundation is particularly interested
3. Tea growers and oil consumers will benefit directly

C. Preproject and End of Project Situation

1. Preproject

   Wasted tea seed
   Limited vegetable oil supply

2. End of Project

   - Clarity on potential of tea seed to provide oil

D. Special Consideration

Apart from oil, tea seed cake could be used for livestock feed

E. Other donor projects

UNDP is now funding support to the Tea Research Foundation but the aspects of tea seed oil has not been addressed effectively.

F. Major Elements

1. Objectives
   - To diversify into alternative sources of income from tea
   - To supply vegetable oil to supplement other local sources

2. Output

Feasibility study on tea seed oil

3. Activities

- Review previous attempts at the Tea Research Foundation
- Assess availability of tea seed and future potential
- Use available pilot facilities for extracting and purifying tea seed oil and by products using facilities at the Tea Research Foundation centre.
- Evaluate existing local oil seed facilities for processing tea seed oil and produce a report

G. Host Country Commitment

This is high as shown by the Tea Association of Malawi, the Tea Research Foundation and the Smallholder Tea Authority.

H. Risks- None have been identified

I. Inputs

Skeleton Budget	UNIDO (US $)	Local (MK)
Personnel (Food Scientist Technologist)	40,000	-
Equipment & materials	10,000	20,000
Total	50,000	20,000

J: Workplan

	Months			
	1	2	3	4
Review of previous work and assessment	----------			
Pilot runs		---------		
Report writing				-----

12. Title: Study on the Feasibility for a new Factory for the Smallholder Tea Authority

Estimated Duration - 2 months
UNIDO Contribution- US $ 20,000

Brief Project Description

A. Problems to be addressed

1. Sectoral level

- Poor agroindustrial development

2. Project Area

- Insufficient tea processing capacity by the Smallholders Tea Authority in Thyolo district
- High transport costs of green leaf to contract private factories or to Mulanje district for processing.

B. Concerned Parties/Target Beneficiaries

1. The problems were identified in collaboration with the ministry of Trade and Industry and the Smallholders Tea Authority.
2. Small tea growers are likely to benefit directly in the form of higher returns from well processed good quality tea.

C. Preproject and End of Project Situation

1. Preproject
- Unplanted potential tea areas in the district
- Some smallholders leaf contracted to private factories, under unfavourable terms
- Leaf transported long distances to factories

End of Project Situation

- Clarity on the need for a new factory for STA

D. Special Considerations

- Unemployment in Thyolo district is high so women could be considered preferentially in order to integrate them more into the industry
- In order to involve more interested parties, NGOs and overseas partners should be invited to participate as a joint venture

E. Other projects by donors. None identified in the tea industry

F. Major elements

1. Objectives

To establish the need for a new tea factory in Thyolo district

2. Output

A report on the feasibility of a new tea factory in Thyolo district.

3. Activities

- Feasibility study on establishing a new tea factory and recommendations.

G. Assumption

The assumption is that the Tea Authority is very much interested in this venture and their interest will not wane.

The Tea Association of Malawi is an obvious counterpart institution but most owners are overseas multinational companies whose interests may differ.

H. Risks- None

I. Inputs

1. Skeleton Budget	UNIDO (US $)	National Partner
Personnel (Consultant)	20,000	None

J. Work Plan

Activity	Period (Months)	
	1	2
Feasibility Study	------	
Report writing		----

9. **Title: Feasibility Study on the Production of Caffeine from Tea Waste**

Estimated Duration: 2 months
UNIDO Contribution: US $ 27,000
National Contribution: None

Brief Project Description

A. Problems to be addressed

1. **Sectoral Level**

Underdeveloped agroindustry in the country

2. **Project Area**

Unutilized tea waste (stalk and pickings, dust and fluff from tea factories).

B. Concerned parties/Beneficiaries

The Tea Association of Malawi and the Smallholder Tea Authority

C. Preproject and End of Project Situation

1. **Preproject**

Wasted tea waste

2. **End of Project**

Awareness of the feasibility or otherwise of economic production of caffeine from tea waste.

D. **Special Considerations: None are obvious**

E. Donors! No similar projects are underway or planned by donors.

F. **Major Eleme ;**

1. **Objectives**

- To access the feasibility of producing caffeine from tea waste in Malawi.
- To raise returns from tea

2. **Output**

Study report on the feasibility of producing caffeine from tea waste

3. **Activities**

- Assess the quantities of tea waste from tea factories in Malawi
- Determine the caffeine content
- Work out the economics of industrial extraction
- Make recommendations

G. **Host Country Commitment.** The Tea Association of Malawi is interested.

H. **Risks:** None identified so far

I. Inputs

Skeleton Budget	UNIDO (US $)	Local (MK)
Consultancy	27,000	-
Miscellaneous	-	-
TOTAL	27,000	-

J. Workplan

Activities	Periods (Months) 1	2	3
Assess quantities of tea waste by consultant	----		
Determine caffeine content		-----	
Economics and feasibility report			-----

OTHER PROJECTS

10. Title: Rehabilitation of Factories in the Private Sector Tea Industry

Estimated duration: 8 years in phases
UNIDO Contribution: US $ 21 million
Local Contribution: MK 9.6 million

Brief Project Description

A. Problems to be addressed

1. Sectoral Level

- Aging machinery and equipment in the industrial sector
- Inadequate maintenance and repair due to shortage of foreign exchange.

2. Project Area

- Old machinery and equipment especially in old tea factories
- Subnormal maintenance and repair in tea factories and related facilities

B. Concerned Parties/Beneficiaries

The Ministries of Agriculture and Industries, the Tea Association of Malawi and the Smallholder Tea Authority; all expressed concern. The factory owners, operators and tea producers will benefit directly from this project.

C. Preproject and End of Project Situation

1. Preproject

- Largely unrehabilitated factory machinery and equipment
- Under capacity utilization
- Inadequate maintenance and repair

2. End of Project Situation

- Well rehabilitated tea factories
- Better capacity utilization
- Good maintenance and repair situation

D. Special Considerations

1. The effects of burning wood or coal in factories, on atmospheric pollution require special consideration while carrying out the rehabilitation work.

E. Other donor projects - None directly related to this project

F. Major Elements

1. Objectives

- To rehabilitate equipment and machinery in the tea industry
- To provide needed spare parts or new kits.

2. Activities

- A study of rehabilitation needs
- Carry out effective rehabilitation
- Build up stock of spare parts over the project period
- Balance out withering and processing unit operations for optimum tea quality

3. Output

- Rehabilitated equipment and machinery
- Stock of needed spare parts

- Improved regular maintenance
- Increased capacity utilization and balanced withering and drying conditions
- Higher productivity
- Better tea quality

G. Malawi Commitment

The government is very much interested as expressed in official encouragement to improve agroprocessing.

H. Risks

Unpredictable tea prices might adversely affect the project, but the same could be said about the weather in the short and long term.

I. Inputs

Skeleton Budget	UNIDO Contribution US $	Local Funds MK
Personnel	500,000	2,000,000
Subcontractors	5,000,000	3,000,000
Rehabilitation	15,000,000	4,000,000
Miscellaneous	500,000	600,000
Total	21,000,000	9,600,000

J. **Work Plan**

Activities	Period (years)							
	1	2	3	4	5	6	7	8
Study rehabilitation needs	---							
Carry out rehabilitation		----------						
Build up stock of spares for regular use		--		---		---		---

11.Title: **Strengthening Management and Support staff in the Tea Industry**

Estimated duration: **5 years**
UNIDO Contribution: **US $ 1.585 million**
National contribution: **MK 1.3 million**

Brief Project Description

A. 1. **Sectoral level**

- Limited management and operational skills
- Subnormal performance in the industrial sector in management and financial operations

2. **Project Area**

- Insufficient management and operational skills among staff in the tea industry.
- Limited good financial handling procedures

B. Concerned Parties and target beneficiaries

1. The problems were identified in collaboration with government officials, the Tea Association of Malawi and the Smallholders Tea Authority.
2. Staff in management, operations, administration and financial departments will benefit directly.

C. Preproject and End of Project Situation

1. Preproject

- Inadequate skills in management, operations administration and financial control

2. End of Project Situation

- High level skills in management and operation in the tea industry
- Good financial management and control.

D. Special Considerations

Women are under represented in management and administration so they should be considered sympathetically

E. Other donor projects None identified

F. Major Elements

1. Objectives

- To improve management and operational skills for personnel in the tea industry
- To raise financial handling skills by accounts sections.

2. Activities

- Identify training needs
- Organise training seminars for management and administrative personnel
- Fund refresher courses for relevant staff
- Organize study tours for managers from the STHA and the Malawi tea industry
- Provide desk top commuters for the tea authority and other needy factories.

3. Output

- Better management and financial handling knowledge by staff
- Better control of operations in tea factories and related institutions.

G. Country Commitment

The government, the Tea Association of Malawi and The Smallholder Tea Authority are interested.

H. Risks- None seem to exist

I. Inputs

Skeleton Budget	UNIDO (US $)	National (MK)
Personnel	480.000	800,000
Training	900.000	500,000
Equipment	200.000	-
Miscellaneous	5.000	30,000
TOTAL	1,585.000	1,330,000

J. Workplan

Activities	Period (years) 1	2	3	4	5
Identification of Training Needs	----				
Provision of computers etc	----------				
Training seminars	------		------		------
Refresher courses					
Study Tours	------		------		------

3.5 IMPLEMENTATION MODALITIES

In preparing these tentative modalities for implementation it is assumed that all standard United Nations Agency procedures in dealing with the Malawi Government and cooperating institutions will be followed.

3.5.1 Implementation Objective

The major implementation objective is to establish and run an integrated programme for the tea industry in Malawi. This will be done following the strategy already described involving increasing greenleaf tea production and improving the tea manufacturing sector.

3.5.2 Institutional Arrangements and Coordination

It is presumed that the smallholder tea growers are the main target beneficiaries followed by tea estates under the Tea Association of Malawi. The Ministry of Agriculture would be the main implementing agency through the Smallholder Tea Authority

Since the Tea Association is involved, overall coordination would then be provided by the Ministry of Agriculture in close collaboration with the Ministry of Trade and Industry. Details of the individual projects are summarized in Table 10.

Table 10 Institutional Arrangements Summary

Projects	Responsibility and Cooperating Institutions
1. Support to expansion of small tea growers	- Min. of Agriculture, Smallholder Tea Authority - FAO
2. Training smallholders in tea industry	- Ministy of Agriculture - Smallholder Tea Authority - Tea Research Foundation - FAO
3. Strengthening tea extension services	- Ministry of Agriculture - Smallholder Tea Authority - Tea Association of Malawi - Tea Research Foundation - FAO
4. Study on tea transport system	- Ministry of Communication & transport - UNIDO
5. Price policy & marketing & Credit study	- Ministry of Agriculture - Ministry of Trade & Industry - Smallholder Tea Authority - Tea Association of Malawi - UNIDO and FAO
6. Rehabilitation of the Malawi Tea Factory	- Ministry of Agriculture - Ministry of Trade & Industry - UNIDO - Private Sector
7. Support to tea Research Foundation	- Malawi Tea Association - FAO- agronomy - UNIDO-engineering aspects

8.	Oil from tea seed study	- Malawi Tea Association - UNIDO
9.	Caffein from tea waste study	- Malawi tea Association - UNIDO
10.	Tea factories Rehabilitation in Malawi	- Ministry of Trade & Industry - Private sector - Malawi Tea Association - UNIDO
11.	Management and staff strengthening	- Ministry of Agriculture - Tea Authority and Association - Ministry of Trade Industry - UNIDO
12.	New Tea factory feasibility study	- Ministry of Agriculture - Ministry of Trade & Industry - Smallholder Tea Authority - UNIDO - Joint venture groups

3.5.3 Time Schedule (Phasing)

Project	Period – years									
	1	2	3	4	5	6	7	8	9	10
1. Smallholder tea expansion	----------									
	----------									
2. Smallholder tea Training	----------									
	----------									
3. Tea extension strengthening	----------									
	----------									
4. Transport study	--									
	--									
5. Price/Credit study	--									
	--									
6. Malawi tea Factory	----									
	----									
7. Tea Research Foundation Support		----------								
		----------								
8. Tea Seed Oil study	---									
	---									
9. Caffeine from tea study	--									
	--									
10. Tea Factories Rehabilitation		----------						---	----	
		----------						----	----	
11. Management & Staff support	---					----			---	
	---				-	----			----	
12. New factory feasibility	--									
	--									

The individual project activities specifically address the objectives. The training related activities will involve formal lectures or teaching methods, workshops, seminars, practical demonstrations, visits to tea gardens and the Tea Research Foundation. Community mobilization and mass media such as the Radio Malawi and the local press including local vernaculars for rural communities.

Rehabilitation activities will involve contracting, subcontracting and joint ventures between government, parastatals and joint venture partners as suggested in the strategy outlined in this programme.

Monitoring and Evaluation

The projects phased out in this section will all embody monitoring and evaluation components so as to ensure effective implementation. This would involve implementing, coordinating institutions and those providing technical assistance such as United Nation agencies or joint venture partners.

3.5.4 Recommendation and Conclusions

In retrospect, the tea industrial system in Malawi has developed reasonably well and has potential to grow through growing more tea and improving the effeciency and capacity utilization in the processing and marketing components as set out in the suggested strategies and programme.

Tea is the second most important export crop and provides valuable foreign exchange, income and employment. The major constraints especially among smallholder growers include inadequate crop husbandry, processing systems and marketing, credit facilities. The Tea Association of Malawi and the Smallholder Tea Authority along with the ministries of Agriculture, Trade and Industry as well as the private sector are eager in cooperating institutions who welcome joint venture partners.

It is therefore strongly recommended that UNIDO supports the keen interest shown by the Malawi Government and institutions in the country concerning the proposed programme and means are found to launch this programme.

APPENDIX 1: Tea Manufacturing Industries in Operation (1986

	Name of Industry	Product(s)	Estimated Initial Total Investiment MK (000)	Estimated No. of Employees
1.	Makadi Estate Ltd	Tea & Coffee	5,270	7,695
2.	Satemwa Tea Estate	Tea & Coffee	5,484	4,118
3.	Tea Blenders + Packers	Tea	150	43
4.	Malawi Tea Factory Co	Tea	1,390	209
5.	Liteaco Ltd	Tea	50	20
6.	Ruo Estates	Tea & Coffee	8,040	3,000
7.	Naminoomba Estate	Tea, Coffee + Nuts	107	20
8.	Chombe	Tea	245	680
9.	Chitakali	Tea	1,166	871
10.	Chisambo	Tea	6,000	3,470
11.	Gotha	Tea	662	1,399
12.	British Africa Tea Estate	Tea	1,702	1,988
13.	Vankees	Tea Blending	600	6
14.	Nchima	Tea	5,040	208
15.	Bandanga Estate Ltd	Tea & Coffee	2,365	1,515
16.	L. Contorzi Ltd.	Tea & Coffee	5,300	4,037
17.	Savama	Tea & Coffee	2,300	2,805
18.	Lujeri	Tea & Coffee	2,500	4,950
19.	Blantyre EA. Ltd	Tea	611	141
20.	Zoa Tea	Tea	369	486

Source: UNIDO (1987) "Industrial Development Review series"

APPENXI II: TERMS OF REFERENCE

Title: Indicative Programme for the development of agro-industrial systems in selected African countries

I. BACKGROUND

The Programme Development Support Unit has been established at UNIDO to promote the application of the programme approach to project identification and formulation. In 1989 the Unit's efforts were being directed mainly to the preparation of the 1990/91 Industrial Development Decade for Africa (IDDA) programme, which will concentrate on the development and rehabilitation of agro-related industries in Africa.

The programme approach is applied at three levels. The first level, which provides the basis for the following work, is the classification of countries according to patterns of development of specific industrial systems. In order to prepare the 1990/91 IDDA programme, PDSU is classifying 50 African countries according to development patterns in the agro-food related sectors (agro-food industries, fertilizers and pesticides and agricultural machinery). The methodology being used for this work is based on and adapted from the methodology that was developed for the classification of 64 developing countries according to the patterns of development of their fisheries industrial systems (FIS).

The objective of the classification work is the identification of countries with similar development patterns in specific agro-related industrial sectors in order to facilitate the cost-effective design of integrated development programmes of technical assistance, investments and policies.

Building and expanding upon the preliminary results of the classification in Africa, the preparation of indicative programme for groups of countries to promote the development of specific agro-industrial systems.

II: OBJECTIVE OF THE CONSULTANCY SERVICES

To assist PDSU in the preration of indicative programmes for a group of African countries. Building and expanding on the classification of African countries according to the patterns of development of their agricultural production, processing and consumption systems, each indicative programme will include a package of technical assistance and investment projects and policy advice that can serve as a basis for designing integrated development programmes for the specific country studied and can also be useful in the analysis and programming of technical assistance for countries with similar agro-industrial development patterns.

III: SCOPE OF THE WORK

This assignment will involve an analysis of the agro-industrial systems of Malawi and Zimbabwe.

It is important that the expert has experience directly relating to the development of agro-industries in Africa. The assignment will last eight weeks, including one initial week at UNIDO headquarters, three weeks in Malawi, two weeks in Zimbabwe, and the remaining three weeks at h.q. The expert will prepare and submit two complete typed reports, preferably prepared on a word processor and submitted on diskette.

IV: ACTIVITIES

The work assignment will include:

A. Pre-assignment preparation:

1. Review of documents describing the programme approach and the results obtained to date in the classification of African countries according to the patterns of development of agro-related industrial systems.

2. Collection of information available to the expert on the countries and specific agro-industrial systems selected for study.

B. At UNIDO Headquarters

1. Together with the other experts preparing indicate programmes, the expert will take part in a meeting that will provide him/her with an introduction to the programme approach, a review of the work of PDSU and IDDA completed so far on the analysis and programming of agro-related industrial systems, an explanation of the methodology to be used in carrying out the country studies and a detailed description of the report he is expected to prepare. He will be provided with a kit of materials to help collect information.

2. Using the information material available at UNIDO and other sources, the expert will prepare desk studies of the two countries and agro-industrial systems he is going to report on.

In each study he will include a preliminary description of the agro-industrial system in the country, a base diagram showing all main components of the system and their linkages, and preliminary disaggregation of components and assessment of the system. These studies will be reviewed by PDSU and discussed before the expert leaves for the field, thus enabling him to make more efficient use of his time in the countries and helping to ensure that all experts follow a common approach in preparing the indicative programmes.

C. In the field

1. The expert will visit two countries for a period of approximately three weeks each. On the basis of the work done at (UNIDO) headquarters, and the attached outline, he will study a dominant agro-industrial system in each of the countries he visits. The purpose of the study is to identify qualitative and quantitative parameters for all major components of the system and the linkages between them.

2. The expert will discuss the development of the agro-industrial system with the relevant authorities in Government, institutes and industries in order to identify the Government's development objectives with relation to the system.

D. At home

1. The expert will prepare indicative programmes for each of the two countries. Each indicative programme will include a description of the agro-industrial system, all its main components and the linkages between them the evolution and constraints hindering the further development of the system, as well as the resources and enhancements that can promote its development.

It will include an identification of various options to overcome the bottlenecks and constraints and the selection of the best options to achieve the Government's objectives in relation to the development of the system. A group of complementary options will constitute a development strategy. Each strategy will be assessed against the Government objectives and one be selected as the most appropriate. Finally, the indicative programme will include a package of technical assistance and investment projects as well as policy advice to implement the selected strategy.

2. After the indicative programmes have been reviewed by UNIDO, the expert will make whatever revisions considered necessary before they are accepted by UNIDO as completed.

V. CONDITIONS OF THE AGREEMENT

The consultant may be required to work in a team, together with other PDSU staff and/or staff or other organizations. In addition to carrying out the above tasks to the best of his/her abilities, the consultant should:

a) Maintain close contact with PDSU to permit continuous monitoring and discussion of the work;
b) Agree that any changes, deletion or additions to the scope of work or programme plan must be approved by the UNIDO
c) Not disclose the results, intermediate or otherwise, of any part of the project without prior permission of the UNIDO back stopping officer;
d) Include appropriate credits to UNIDO, Programme development Support Unit in respect to references to project results.

The UNIDO back stopping officer for this work is Ms. Teresa Salazar de Buckle, Chief, Programme Development Support Unit, Special Measures and Activities Division.

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APPENDIX IV: PEOPLE AND INSTITUTIONS CONTACTED

Brown and Clapperton Group Blantyre

R. M. Wrixon: Group Chief Executive

The European Economic

Community Office-Lilongwe

Dr. K. Schmidt. Economic Advisor

Ministry of Agriculture - Lilongwe

Mr. Nowira-for Chief Research Officer

W. Kumwenda - Agric. Engineer

Chitedze Research Station

Ministry of Trade and Industry

Mrs. Chirambo - Trade Officer- Blantyre

M.J. Tsilizani - Principal Industrial Officer

C.C. Kachuza - Industrial Development Officer

Namingomba Tea Estate - Thyolo

Mr. Emot- General Manager

Mr. L. Latham - Manager

The Malawi Tea Factory

J. J Chikago, Factory Manager

The Tea Research Foundation - Mulanje

W. Grice - Director

The Smallholder Tea Authority-Thyolo

K.D. Masangano-General Manager

The Tea Association of Malawi

G. Banda - Executive Secretary

Mr. A. Schwartz- Chairman

Chairman

United Nations Development Office Malawi

The Deputy Resident Representative

Mr. J. Graves Programme Officer

UNICEF - Lilongwe

Ken Williams - Country Representative

M. Khonje - Asst. Programme Officer

Food and Agriculture - Lilongwe

Maria Paris - Ketting. Programme Officer

P. De Roover - Technical Advisor

UNIDO Project Office - Lilongwe

K.K. Kamatak- JPO

A. Jacobs - Chief Technical Advisor - Blantyre

G. Lamb - Consultant