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FINAL REPORT ON

AUTOMOTIVE PARTS AND COMPONENTS

MANUFACTURING IN KENYA

PREPARED FOR

KENYA SUBCONTRACTING & PARTNERSHIP EXCHANGE

AND

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

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EXECUTIVE SUMMARY

Background:

The Motor Vehicle Industry in Kenya has achieved considerable growth during the last two decades emerging from a situation dependent fully on imported vehicles to one where vehicles are assembled locally with part of the component being sourced from local suppliers. This growth has been attained through private sector initiative combined with policy support from the Government.

The sector has considerable scope for subcontracting and it is in the light of this potential that it was selected for an indepth study to examine the current status and recommend the way forward in subcontracting and local component manufacture using the flexible approach (see chapter 1).

The main actors in the sector (see chapter 2) have been identified as being the vehicle assembly plants, motor vehicle dealers, component manufacturers, spare parts dealers, policy organs and sectoral associations/lobby groups.

SUBCONTRACTING IN THE MOTOR VEHICLE INDUSTRY

There already is some Subcontracting in the Motor Vehicle Industry though this is constrained by demand and unpredictability in the Industry. Two of the assembly plants are contract assemblers who are contracted by the franchise holders to assemble selected vehicles at a fee. The franchise holders also subcontract local auto-ancillary units for the manufacture of components which, by far, have to be purchased locally. Some of these component manufacturers do also subcontract others for supply of certain parts, jig, moulds etc. necessary for them to complete manufacture of the component.

The degree of Subcontracting has mainly, been limited by the unchecked importation of Completely Built Up Vehicles and the lack of adequate flexibility in the industry to cater for changes in vehicle, makes and models. Economies of scale have also been lacking due to the high proliferation in vehicle makes and models.

The basic findings are therefore as follows:

- Subcontracting in the manufacture of automotive parts in Kenya is not stable as it is characterised by divergent interests among the players, contrary to the situations existing in developed countries (chapter 3).

- Research inputs, backed by common goals, are lacking, resulting in technological stagnation, inefficient manufacturing methods and uncompetitive products (see section 3.2 to 3.4).

- Inconsistent government policies on imported parts, illegal imports, and unaccustomed spare parts, have rendered the Kenyan market insecure adversely affecting the subcontracting environment.

Automotive Parts Manufacturing Facilities in Kenya

- Manufacturing facilities for some automotive parts exist in Kenya, in some cases operating under franchises of overseas Manufacturers (appendices 3,7 and 8). Most of these facilities employ outdated technologies and the products cannot survive external competition without government protection. The facilities are thus relatively poor and inefficient and in the absence of some basic industries to produce the raw material inputs the sector continues to operate at a disadvantage as it has to rely on imports and is therefore susceptible to foreign currency shortages.

- Plastic and rubber moulding facilities are adequate but the moulds manufacturing facilities and skills to support them are inadequate. Reliance on imported moulds is not flexible enough to cope with the rapidly changing car models.

- Casting facilities are being modernised (appendix 8 and section 3.6.14) but may not be able to manufacture key automobile parts without forging facilities, and advanced heat treatment facilities.

Demand for Automobile Parts

- Importation data is too general and cannot be used for estimation of consumption. The distribution system is equally more complex and shared by many dealers and distributors who do not keep records (chapter 4).

- Consumption pattern of automotive parts has been estimated from motor vehicle population analysis, based on collected data from dealers, licencing and

registration records, and compiled data from Kenya Motor Industry (Chapter 4).

- Flexible manufacuturing system requires a well developed subcontracting structure, based on process specialisation in the areas of plastic and rubber moulding, metal forming, die and mould making, casting and forging and machining.

Despite the above it has been estimated that vehicle population in Kenya is currently 356,000 and is likely to increase to 455,000 by 1998. Based on the population and demand flexible manufacturing could be developed in the areas of metal forming, plastic moulding, rubber moulding, casting, forging, machining, die and mould making processes. Certain parts (see table 4.11) could then be manufactured locally with minimal modernisation of Industry but this is only viable if the local assembly is supported and strengthened to an extent that importation of Completely Build Up vehicles is minimal.

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ABBREVIATIONS/ACRONYMS

SKD	Semi Knocked Down
CKD	Completely Knocked Down
CBU	Completely Build Up
OE	Original Equipment
IDB	Industrial Development Bank
ICDC	Industrial and Commercial Development Corporation
KIE	Kenya Industrial Estates
KSPX	Kenya Subcontracting and Partnership Exchange
GM	General Motors
AVA	Associated Vehicle Assemblers
KVM	Kenya Vehicle Manufacturer
UK	United Kingdom
CMC	Cooper Motor Corporation
KBS	Kenya Bus Service
HP	Horse Power
ALC	Auto Liason Committee
KMI	Kenya Motor Industry Association

CHAPTER ONE: INTRODUCTION

1.1 Background

The Motor Vehicle Industry has over the last two decades received a lot of attention from the Kenya Government and has as a result made considerable growth especially in terms of range of activities. This concern and support is founded on the understanding of the potential that this sector offers in terms of employment generation, transfer & development of technology and foreign exchange savings. The very number of different components that go into the manufacture of a motor vehicle and the diverse nature of technologies involved in their manufacture is enough reason for policy makers to target the sector as a major avenue for industrial growth.

During the last two decades the sector has developed from one dependent purely upon imported Completely-Build-Up (CBU) vehicles to local assembly based on both imported and locally manufactured components. The imported components come in form of Completely Knocked Down (CKD) Kits less specified components which are supplied by the local auto ancillary industry. This development has resulted in three assembly plants which are unfortunately still heavily depedent upon imports and over 65 auto ancillary units supplying both the Original Equipment (OE) and Replacement markets. A less intentionally planned but related development is the growth of a few "Process Industries" which do not target the motor vehicle market specifically but are able to produce vehicle parts and components in addition to parts being used in other industrial sectors in view of similarities in the production technologies and techniques.

In all these developments the Government has, directly or indirectly, played a key role through policy formulation and re-formulation, foreign exchange allocation, import licensing, provision of investment capital etc. At the time of setting up the three operational assembly plants the Government played a key role in facilitation and as a direct investor in the share holding. In other areas the Government has indirectly invested in auto-ancillary units through its parastatal organisations such as the Industrial Development Bank (IDB), the Industrial and Commercial Development Corporation (ICDC) and the Kenya Industrial Estates (KIE). The most recent involvement by the government has been the development of a "Kenya Car" - the Nyayo Car - and subsequent formation of the Nyayo Motor Corporation which aims to sometimes in the undetermined future manufacture a car locally using local resources and materials. The success of the Project has yet to be made public but those familiar with economies of scale concept, the complexities of efficiently manufacturing some of the car parts and the lack of local basic industrial processes especially in metallurgy, foundry, forging, etc. cast doubt on its chances of succeeding as presently conceived.

Sub-contracting in the motor vehicle industry seems to have developed well especially given that it was totally non existent slightly over ten years ago. This subcontracting is in most cases at more than one level with the motor vehicle dealer or franchise holder subcontracting the assembler for assembly of the parts- imported & local - and also the local component manufacturer for the supply of the local content. In some instances the local component manufacturer also subcontracts for some of the parts necessary to complete manufacture of the component e.g. Battery

Manufacturer who sub-contracts for the supply of the plastic casing. Despite these developments most of the auto-ancillary industries other than those targetting the replacement market, stand on shaky ground as any negative developments in the assembly plants impact very adversely on these units and can easily lead to their closure. The approach has thus in most cases tended to be too dependent on the assemblers with little flexibility. This said, the potential for local manufacture of vehicle components and parts especially for the replacement market is still far from being fully exploited for reasons that will become apparent in the latter sections of this report.

1.2 OBJECTIVES AND SCOPE OF THE STUDY:

Conceptually the Motor Vehicle Industry offers a lot of potential for subcontracting and it is not suprising that this is one of the sectors selected for detailed study by Kenya Subcontracting & Partnership Exchange (KSPX) with emphasis on local component/parts manufacture. The study aims at identifying the potential scope and constraints in subcontracting within the Motor Industry and proposing strategies and new mechanisms to enhance subcontracting in the sector. The following considerations acted as a guide during the study:

(i) adequacy of production methods to market size and price levels

(ii) process flexibility to meet demand fluctuations in quantities, design changes, and product mix variations.

(iii) choice of technologies suitable to local conditions, industrial environment, availability of subcontractors, and raw materials.

(iv) quality assurance systems for parts of quality levels comparable to the imported ones.

(v) ability of economical manufacturing for a wide product range with a limited unit volume.

1.3 TERMS OF REFERENCE

The terms of reference for the study were as follows:

(a) DESKWORK

- A study of existing literature and researches on the subject.

- Collection of historical data, and statistics e.g. vehicle registration, imports of components/parts.

- Analysis of imports by value/number and their breakdown by technologies.

- forecast of demand by technologies

- Inventory of existing manufacturing facilities by technologies.

(b) FIELD RESEARCH

- Interviews with subcontractors, main contractors and dealers to identify constraints to parts production.

- Identification of most favourable areas for the development of new/upgraded subcontracting units using the flexible approach.

(c) ANALYSIS

- Preparation of a report, preliminary discussion of the results and refinement of findings.

- Organization of a presentation workshop.

1.4 METHODOLOGY & SURVEY INSTRUMENTS

The Consultants used the following approach during the survey:

(a) Desk research especially examining published and unpublished sectoral reports and research papers on the motor vehicle industry, Government policy documents, and statistical reports on imports, vehicle registration etc.

(b) Discussion with officials of KSPX and government departments associated with the sector.

(c) Interviewing key direct actors in the Motor Vehicle Industry.

The Consultants applied the following procedure in selecting those to be interviewed:

(i) Three lists provided by KSPX, Ministry of Commerce & Industry and Kenya Association of Manufacturers acted as a guide in identifying those involved in the manufacture and assembly of Motor vehicles and vehicle components.

(ii) Based on this list the following grouping was used to select those to be interviewed:

- all the three assembly plants
- all known dealers of tractors
- all major engineering workshops in Nairobi, Mombasa, Kisumu, Nakuru and Eldoret.

- for every type of component known as being locally manufactured, at least one manufacturer was interviewed.

- all significant vehicle dealers

- selected body builders, fleet owners nad spare parts dealers

- a few selected "process" plants including die casting, foundry, machine shops, rubber processing and plastics manufacture.

- sectoral associations.

(iii) In order to capture the pertinent details the Consultants developed questionnaires for the following:

(a) a questionnaire for the assembly plants (see appendix 1a)

(b) Two questionnaires for the Motor Vehicle dealers with one seeking information on past vehicle sales (see appendix 1b) and the other seeking a detailed breakdown of spare parts sales for selected "popular" vehicle models (see appendix 1c).

(c) One questionnaire for the component/parts manufacturers (see appendix 1d).

(d) A questionnaire for the tractor dealers (see appendix 1e).

Apart from the questionnaires, considerable information and insight was obtained in the process of discussions with representatives of various firms and from observations made during factory visits. For the engineering workshops no structured questionnaire was developed but in general the Consultants tried to assess the available facilities, their current use and the potential they have for manufacturing vehicle parts and components.

In several instances the questionnaires were not filled but simply acted as a guide to the Consultants during the interviews.

The survey team comprised of a Project Engineer/Economist and a Mechanical Engineer and in general the two conducted the interviews together.

1.5 LIMITATIONS

The Consultants faced the following major constraints:

(i) On further analysis of the sector, the main actors turned out to be much more than originally estimated. Time constraint was soon realised and raised with KSPX especially due to late commencement of the survey. Sampling of those to be interviewed was thereby applied considerably and where possible existing literature was relied upon.

(ii) Most of those interviewed, especially component manufacturers did not maintain data and the Consultants had to rely on estimates given by either the manufacturers or based on the Consultants own observations.

(iii) In a few cases those approached for interview did not co-operate and this was a major set back during the study.

(iv) The nature of information required especially spare parts sales turned out to be quite detailed and although in general the dealers were cooperative they required much more time than previously planned. "Return" trips to most organisations became a very common feature.

1.6 REPORT STRUCTURE

The report comprises of five chapters as follows:

Chapter 1 & 2 - This gives a background and attempts to put the subject matter namely the motor vehicle industry in Kenya, into perspective by disucssing its background, the main actors and their activities and the policy environment within which it operates.

Chapter 3 - 4 - This describes the status of manufacturing and subcontracting in this sector. It examines the key industries especially those with potential for further subcontracting.
It also attempts to establish the vehicle population and identify the potential demand for vehicles.

Chapter 5 - This summarises the data obtained and gives the conclusion and recommendations especially with regards to parts and components that can be manufactured using the flexible approach.

Appendix - Key data is appended as part of the report.

1.7 Acknowledgements

The Consultants wish to acknowledge the cooperation and support extended by the various organizations visited. In most cases these were visited without prior appointment and the consultants appreciate the flexibility shown by these various organisations. Further acknowledgement goes to the staff of KSPX for their assistance, support and guidance.

CHAPTER TWO: THE STRUCTURE AND STATUS OF THE MOTOR VEHICLE INDUSTRY IN KENYA

2.1 Introduction

The motor vehicle industry in Kenya has the following main actors:

(i) Motor Vehicle Assembly Plants.

(ii) Motor Vehicle dealers - (franchise holders).

(iii) Component/Parts Manufacturers.

(iv) Tractor Dealers

(v) Motor Vehicle related associations and policy organs

(vi) Others including spare parts dealers, fleet owners, etc.

The survival of each of these branches is closely interlinked and this survival is heavily dependent on the Government policies and regulations and the overall economic situation in the Country.

2.2 MOTOR VEHICLE ASSEMBLY PLANTS:

2.2.1 Background:

Motor vehicles were all imported as Completely Build Up (CBU) Units until 1977 when vehicle assembly plants commenced assembly of commercial vehicles from Completely Knocked Down (CKD) Kits. This was as a result of Government authority through notification E. A. Gazette Supplement in August 1975. As per this authority, the assemblers could select makes and models of vehicles of their own choice within specified limits. As a way of nursing the industry, Government prohibited importation of CBU commercial vehicles above 750 kg. carrying capacity. At the time it was not considered feasible to assemble passenger cars due to the high technology involved in body work, interior finish and external appearances.

As per the second schedule of this act, it was obligatory on the part of the assemblers to use some locally manufactured components as part of the input in the vehicle being assembled. In February 1980 the act was revised as per notification Motor Vehicle Order 198 prohibiting import of commercial vehicles in form of CBU or Semi Knocked Down (SKD) Kits while the list of locally manufactured components to be used by the assemblers was expanded. The minimum load carrying capacity of commercial vehicles was also later reduced from 750 kg to 250 kg. As the assemblers gained experience and confidence and as the vehicle users got used to the idea of buying locally assembled vehicles, the Government extended the authority of the vehicle assemblers to include assembly of Passenger Cars.

Todate there are three asssembly plants namely General Motors (K) Ltd. (GM) in Nairobi, Associated Vehicle Assemblers (AVA) in Mombasa and Kenya Vehicle Manufacturers (KVM) in Thika. In the past others who have assembled a few vehicles

include Fiat (K) Ltd. and Ziba Management Ltd. but these have since ceased their assembly operations. At present the combined installed capacity of the three assembly plants is estimated at 45,000 units per year based on two shifts.

2.2.2 GENERAL MOTORS (K) LTD.

General Motors (K) Ltd. was set up through notification E. A. Gazette in 1975 with the original ownership consisting of Government of Kenya (51%) and General Motors Corporation (49%) with an initial capital investment estimated at KShs.50.0 million. Of the three assembly plants, GM is unique in that it is **NOT** a contract assembler. GM therefore assembles its own vehicles under licence of its foreign associates and then passes on these vehicles to its 15 dealers throughout the Country. Because of the same reason, GM as a franchise holder, imports parts and components meant for servicing its range of vehicles and distributes these through various spare parts dealers throughout the Country.

General Motors has misgivings on the quality of some of the locally manufactured items such as glass, filters, gaskets and shock absorbers but expressed satisfaction in the case of tyres, wiring harness, leafspring and batteries. Lack of Government control of illicit vehicle imports was indicated as a major set back for the industry.

The table below gives an indication of the number of vehicles assembled by GM in the past:

Table 2.1 Number of Vehicles assembled by GM

Year	No. of Vehicles Assembled
1978	2847 units
1982	1125 "
1983	1325 "
1984	2469 "

In more recent years the volume of vehicles assembled by GM has been declining as seen from the table below:

Table 2.2: Models of cars assembled by GM and their quantities

Vehicle Model	Engine Capacity	Petrol (P) or Diesel (D)	Quantity Assembled 1989	1990	1991	1992
Cars: Isuzu, Uhuru & Opel Astra	1400	P	500	196	20	261
Isuzu Trooper	2300	P	160	115	140	132
Pick-Up-1-Ton	1600	D	200	111	200	123
Pick-UP 1-Ton	2300/2500	D	162	175	245	161
Truck-3.5 Ton	3300	D	350	611	330	441
Truck 7-Ton	5785	D	210	243	195	103
Truck-9 Ton	8413	D	250	133	90	100
Truck-13 Ton	13741	D	236	250	75	23
Minibus	3300	D	273	211	220	356
Large Bus	13741	D	109	83	120	50
Total			2339	2128	1735	1750

The Company has about 400 employees and subcontracts other firms for the manufacture of jigs used in the vehicle assembly process. At present the vehicles being assembled are on franchise from Isuzu Corporation of Japan and Adam Opel of Germany.

2.2.3 ASSOCIATED VEHICLE ASSEMBLERS (AVA)

AVA was incorporated in April 1974 with an initial estimated investment of Shs.95 million. The company was set up following a joint venture agreement between the Treasury, Industrial Development Bank, Inchcape and Lonrho. It is an independent contract assembler making vehicles ranging from small passenger cars to prime mover trucks for Daihatsu, Fiat, Honda, Hino, Lada, Mitsubishi, Peugeot, Subaru, Tata, Toyota, VW and Volvo.

AVA feels that the major drawback on the development of the motor vehicle industry is the unchecked flooding of the market with cheap imported CBUs. They argue that CBU option offers no industrial growth of the sector and only benefits a handful of Kenyans with access to foreign exchange and able to manipulate the system to their advantage.

Regarding jigs used for vehicle assembly, these are required for each model and the cost of their manufacture (estimated at Shs.4 to 9 million) is met by the franchise holder. AVA has in-house capacity to make the jigs and has five assembly lines with three currently in use.

In the past AVA used to employ 600 people but has had to reduce to about 350 employees. According to the Company its share of the market is about 62% of all the vehicles assembled in the Country.

The table below shows the number of vehicles assembled for various motor vehicle dealers in the past.

Table 2.3: Number of Vehicles Assembled by AVA

	PERIOD TO SEP '77	YEAR TO SEP'78	YEAR TO SEP '79	15 MONTHS DEC '80	YEAR TO DEC '81	YEAR TO DEC '82	YEAR TO DEC '83	YEAR TO DEC '84	YEAR TO DEC '85	YEAR TO DEC '86	YEAR TO DEC '87	YEAR TO DEC '88	YEAR TO DEC '89	YEAR TO DEC '90	YEAR TO DEC '91	YEAR TO DEC '92	CUM TOTAL
Bruce Trucks & Eq.					48	72	48	216	138	280	222	358	360	396	328	124	2670
Kenya Motors													132	115	76	60	383
Toyota Kenya	13	388	942	1800	1380	1660	577	1283	1950	1970	2390	2380	2850	2560	1149	1050	24859
Marshalls (E.A.)	12	547	1290	1664	745		330	873	1302	1324	2352	2172	2383	2221	859	1049	20036
Doughty Ltd.										60	40			165	90	75	430
Data A. Ltd.										55	105	120	90	80	100	76	616
Hyco Motors Ltd.					226	296	256	280	188	300	300	260	240	240	180	240	3036
Simba Colt Motors										30	690	560	490	510	540	360	3130
(U.K.) Ltd.								96				80	25	111	48	24	384
Thika Motors Ltd.		10	40		60	20						64	44	31	57	20	346
Kenya Crane Ltd.													6	6	-	-	12
D.T. Dobie & Co.	37	1331	879	1617	2734	1684	593	1846	2309	1690	2716	2522	1250	132	-	-	21340
K.B.S. MSA) Ltd.							12	8	4	20					-	-	44
Lugnes Eastern	13	554	908	536	356	130	80								-	-	2924
Total	69	3330	4039	5617	5619	4855	1896	4602	5951	5729	8765	8516	7880	6567	3427	3078	80060

2.2.4 KENYA VEHICLE MANUFACTURERS LTD. (KVM)

The Company was incorporated in July 1974 as Leyland Kenya Ltd. with ownership divided amongst Treasury (35%), Cooper Motor Corporation (20%) and Leyland International (45%). Through a special resolution of the shareholders the company changed its name to KVM in May 1979 with the Government retaining its share (35%), and the other shareholders being CMC Holdings Ltd. (32½%) and D. T. Dobie & Co. (K) Ltd. (32½%).

The Company started production in 1976 and was originally designed to produce light and heavy commercial vehicles but over the years the vehicle model range has increased to 48 at present. The plant has an installed capacity of 6,600 vehicles per annum on single shift. Like AVA it is a contract assembler whereby the vehicle dealer imports and transports kits to the plant at Thika and provides all special jigs and tools required together with all locally sourced components except paint, fuel, oil and consumables.

An interesting aspect of the plant is its Land Rover Rehabilitation Project which was introduced in 1985. Under this project the Company strips, overhauls and rebuilds all Kenya Government Land Rovers using parts supplied from U.K. A total of 1133 Land Rovers have been rehabilitated under this scheme with a current production of two units per day.

The table below shows KVM's past vehicle assembly figures.

Table 2.4: Number of vehicles assembled by KVM

Year	Vehicles Assembled
1982	3015 units
1983	1214 "
1984	2015 "
1978	3990 "

2.2.5 ISSUES IN VEHICLE ASSEMBLY

(i) Declining Performance

In the recent past the Motor Vehicle Assembly Industry has been going through a crisis which if not solved could lead to its collapse. This is evident from the declining number of locally assembled vehicles as seen below:

Table 2.5: Total vehicle assembly in recent years

Year	Total Vehicle Assembled	Vehicle Registrations
1989	14,200 (app.)	N.A.
1990	13,582	18,023
1991	9,463	16,968
1992	8,365	N.A.

When compared with the total vehicles registered it is evident that the share of the locally assembled vehicles has been declining implying that CBUs are taking an increasing share of the market.

(ii) Allocation of Foreign Exchange

The assembly industry has been experiencing an acute shortage of CKD Kits which is a reflection of the overall shortage of foreign exchange in the Country. In terms of foreign exchange allocated to the Industry this has been declining as seen below:

Table 2.6: Allocation of foreign exchange for CKD imports

Year	Approximate Forex Issued for CKD Kits (Billions of Shs.)
1989	2.4
1990	2.1
1991	1.9
1992	0.6

(iii) **Importation of CBU Vehicles**

It was expected that with the assembly of vehicles locally, the need to spend foreign exchange for the importation of CBUs would be reduced. This has however not been the case. Whereas in the late 1970s and in 1980s restrictions on imports of CBU were a major discouragement to potential importers, the policy and procedures seem to have been relaxed. It is estimated for example that about 44% of vehicles registered in 1991 were **NOT** locally assembled as campared to only 25% in 1990. Indications are that the situation in 1992 and 1993 is much worse.

Estimates of CBU imports over the past years are given below:

Table 2.7: Estimated CBU imports

Year	CBU Import (Units)
1989	3200
1990	4300
1991	6000
1992	9000

(iv) **Employment**

With the shortage of CKD Kits and the competition from CBU imports, the employment in the sector has been declining. KMI estimates that while the industry used to employ (direct & indirect) a total of 30,000 persons during 1987-1991 this has decreased to less than 18,000 persons by 1993. Other estimates show that the three assembly plants provide direct employment for 1630 people while the auto-ancillary manufacturers employ 3,500 people but that this employment is in jeopardy. GM for example has recently advertised in the local press offering a comprehensive package to those of its employees who opt for early retirement - an indication of its inability to sustain its present level of employment.

(v) **Local Content**

The assemblers have expressed misgivings on the competitiveness of local content both in terms of price and quality. The cost of locally sourced components vis-a-vis the deletion allowance provided by the CKD Kits source manufacturers is seen as penalising the industry especially in view of the ongoing competition from CBU imports.

(vi) **Proliferation**

The increasing types and models of vehicles fragment the market and forces assemblers to produce small batches which tend to be uneconomical. It should be noted that due to the small production runs, time and money is spent in the re-tooling for the next different model. Proliferation has also meant tying up of capital in slow moving stocks of parts and spares for vehicle servicing. Currently it is estimated that there are 117 vehicle models assembled locally for both commercial and passenger vehicles. If CBUs are included then the vehicle model range becomes much bigger.

(vii) **Inconsistency in Policies**

The growth of the motor vehicle industry calls for long term planning by the investors for it to develop. This can only be done where the investors see consistency in government policies without punitive back pedalling. Whereas in the past the Government seemed to have put in place policies, procedures and regulations which used to deter importation of CBUs for example, this position seems to have been reversed.

(viii) **Vehicle Costs**

It has been argued by vehicle customers that the locally assembled vehicles are more expensive than CBU imports. The assemblers however argue that while this may be true for the passenger cars (approximately 5% more expensive) it is not so for the commercial vehicles which are 8-15% cheaper. Furthermore when compared with the overseas competition the local assembly plants are small and do not enjoy the same level of economies of sale. The cost of locally sourced components is relatively high when compared to the deletion allowance provided which is out of proportion. The assembly charge perse is very low and accounts for 5-10% of total cost of the vehicle which is considered competitive internationally. AVA for example reports the following vehicle assembly costs:

Table 2.8: AVA's Per-Unit vehicle assembly costs

Average Assembly Charge for	1989 KShs.	1990 KShs.	1991 KShs.	1992 KShs.
Heavy Commercial Vehicles	24,000	27,000	32,000	35,000
Light Commercial Vehicles	11,600	13,500	16,000	18,500
Medium Passenger Cars	13,600	15,000	17,000	20,000

The Assembly charge includes:

(i) the cost of all consumable materials e.g. paints, primers, sealers, adhesives, welding materials, pretreament chemicals etc.

(ii) labour and related overhead costs.

(iii) utilities e.g. power, water, industrial fuels, and

(iv) warranty provision.

2.3 COMPONENTS/PARTS MANUFACTURERS

2.3.1 Role of Component Manufacturers

The auto-ancillary industry has generally grown out of its own steam and in some cases with encouragement by Government through favourable legal enactments. Local assembly of vehicles from CKD Kits alone is not an effective contributor to a Country's industrial growth or saving in net foreign exchange. For it to warrant strong Government support, there must be well planned component manufacturing programme so that over time there is a national integration of the Motor Vehicle Industry in the Country.

The integration of the industry could be seen as following a sequence of steps:

(i) Manufacture of spare parts for the replacement market. These are generally the fast moving components such as silencers, radiators, rubber tyres, batteries, rubber matting, leaf springs etc. In terms of cost in the original vehicle, these form a very small percentage.

(ii) Manufacture of components that can also be used by other industries. Most of the components in this category are in form of forgings, castings and machined parts. They are manufactured using a flexible technology which is similar to the components used by other industries. This generally calls for an industrial infrastructure which has good forge shops, press shops, precision foundries and machine shops.

(iii) Manufacture of highly specialised items involving advanced technology and high capital outlay. Some of these include engine and gear box parts, axles, suspension, brake assembly, steering unit etc. whose level of technological needs require external collaboration.

(iv) Manufacture of mass production items such as ball bearings, caburaters, instruments etc. whose local production is not likely in the near future.

With this background one of the original intentions of the Government in establishing the vehicle assembly plants was that they would act as a nucleus for the establishment of various auto-ancillary firms to supply the automotive components for both the replacement market and as original equipment used by the assemblers and vehicle maintenance workshops.

Consequently from the very beginning the concept of "local content" was coined and it was expected that the local content of locally assembled vehicles would gradually increase. Indeed various firms have been set up as a result and each vehicle assembled locally today has some degree of local content by way of locally manufactured components.

Progress in local content has however been slow and is on average estimated at 15% in passenger cars and 17% in commercial vehicles which is far below the target levels of 40% and 50% respectively which was to have been achieved by now.

The vehicle assemblers tended to favour imported components as the deletion allowance offered at the source for eliminating certain components from the CKD Kits was by far less than the cost of sourcing the component from the local manufacturers. Furthermore the local components were seen to be of lower quality and not meeting the specifications required by the Motor Industry. Despite these sentiments, the Government was determined to nurse local auto ancillary units and consequently came up with Legal Notices which spelt out components that were not allowed for importation and had to be deleted from the CKD Kits.

The Restricted items under these Legal Notices are shown in appendix 2 while a list of some of the component manufacturers is given under appendix 3.

2.3.2 Issues in Component Manufacturing

Some of the problems facing the auto-ancillary industries are mentioned below:

(i) Unfair competition from imported components. There still is massive importation of components available from local manufacturers and through manipulations these are able to reach the market at a much lower price than the locally manufactured items either through underquoting for duty payment purposes, through damping, or through other deals which are generally not clean. Components which are banned also find their way into the market through the same illicit deals sometimes under the guise of other products allowed for importation.

(ii) Unfavourable tariff structure. In certain instances the tariff structure is unfavourable to local manufacturing. The gap between the import duty charged on raw materials inputs and imported finished components is too narrow to effectively protect the industry and in some cases it directly favours the latter.

(iii) Inadequate cooperation from the assemblers. For the component manufactures to plan their production, cooperation from the assemblers is necessary. Instances have been cited where this cooperation has not been forthcoming. Assemblers should provide drawings of parts to be manufactured and give indication of quantities as well giving fore warning in case of phasing out an existing model or introducing a new one.

(iv) Proliferation in vehicles assembled locally and the rate of model changes also introduces lack of economies of scale and uncertainty in long term planning.

2. 4 MOTOR VEHICLE DEALERS

2.4.1 Role of Vehicle Dealers

There are presently about 13 franchise holders in the Country (see appendix 4). They play a very crucial role in the motor trade in the following ways:

(i) Being the franchise holders they are responsible for the distribution and sales of designated vehicle makes and models. Their main investment is in the vehicles (those in showroom, under assembly, and under shipment as CKD) and in motor vehicle spare parts.

(ii) They contract the assembly plants i.e the contract assemblers, namely AVA and KVM and pay an assembly fee. They are responsible for importing the CKD Kits from the source supply, organising for the purchase of local components and delivering all these to the assembly plants. They also meet the cost of developing the jigs and toolings needed in the assembly of vehicles. It is them who decide which vehicle models to introduce for local assembly and which to phase out based normally on developments at the original source of their supplies.

(iii) Due to their implied interest in satisfactory assembly of vehicles some of them have taken investment interest in the local assembly plants - Marshalls (E.A.) Ltd. in AVA and CMC & D.T. Dobie in KVM.

(iv) Since the bulk of vehicle traders are simply involved in sale of vehicles, they stand to lose less in the event of the local assembly plants collapsing as they would most certainly revert to CBU imports where profit margins could be even higher.

2.4.2 **Issues in Vehicle Dealerships**

(i) **Foreign Exchange Allocation**

As they are basically traders the main issue raised has to do with allocation of foreign exchange for CKD and spare parts imports and the decline in the value of the Shilling thereby eroding the vehicle purchasing power. The fluctuation in the currency and unstable financial markets, make their forward planning difficult and the market trend unpredictable.

(ii) **Cost of Local Components**

Vehicle dealers also complain of expensive local components although generally the price is passed over to the customer. Due to the very low deletion allowance provided by original suppliers, they see this as penalising the industry.

(iii) **Proliferation**

Unlike most of the other actors in the sector the motor vehicle dealers argue that the Motor Industry is already rationalised and need no further intervention in this regard. According to a KMI report 30 car models are being assembled locally as compared to approximately 3000 models in the world. They argue and probably with some good reason, that proliferation is not being introduced by the assemblers but by the importers of CBUs. The cost of developing assembly jigs and tools is very high and before a car is introduced for local assembly the franchise holder will have examined the market to ensure that adequate production will be realised in order to profitably cover the initial investment in jigs, tools and fixtures.

(iv) **Declining Sales**

Due to the increasing cost of vehicles as a result of the currency devaluation and the overall inadequacy of foreign exchange allocation, sales of vehicles have been going down. Appendix 5 shows the overall vehicle sales figures and those for three vehicle dealers during the last four years. For trend comparison purposes the sales figures for the period 1974-1978 are also shown (Appendix 6). The following trend is noted:

Table 2.9: Vehicle Sales 1974-1992

Year	1974	1975	1976	1977	1978	1990	1991	1992
No of Vehicles sold	13201	12944	12136	17840	18686	13582	9463	8365

It is apparent that vehicle sales through the official licenced channels is on the decrease.

Part of the explanation is the increasing influx of imported CBUs which are entering the market as competitors to locally assembled vehicles.

2.5 TRACTOR DISTRIBUTION IN KENYA

2.5.1 Main Dealers

The use of tractors in the country for farming purposes goes back many years and it is no wonder that the companies with the biggest share of agricultural tractor market in the country started operating over 60 years ago, with a few others having joined the market later. In general these companies sell tractors, together with agricultural motorised equipments and their implements with tractor sales constituting more than 75% of the business in agricultural machinery.

All the tractors are currently being imported and in the distant past a proliferation of tractors was a major issue as these were being imported from all corners of the world with little consideration of the available back-up services and their sustainability to the local farming terrains. Over time the situation seems to have improved and there are now only a handful of tractor models being imported into the country. The tractors are imported in form of Semi Knocked Down Kits and then assembled locally. Agricultural tractors are distributed by eight dealers with almost similar capacity range as seen below:

	Dealer	Tractor Trade Name	Capacity Range (HP)
(i)	Farm Machinery Distributors	Massey Ferguson	47 to 165
(ii)	Hughes, Agric. Division	Ford	16 to 385
(iii)	Sametract	Same	38 to 165
(iv)	Lima Limited	Case International	46 to 330
(v)	Holman Brothers	John Deere	53 to 120
(vi)	Fiat Agri (K)	Fiat Ltd.	25 to 180
(vii)	Shamba Machines	Steyr	-
(viii)	Gailey & Roberts	John Deere/Caterpillar	-

For the models, the most popular tractors are in the range of 60 to 80 HP which seem to be the ideal tractors for farming situation in Kenya.

The tractor dealers are represented in most parts of the Country and where they do not have a branch they have agents. Tractor sales are however mainly concentrated in Rift Valley Province and parts of Central Province such as Kieni and Makuyu where there is a concentration of large farms. The tractor dealer branches are ideally located in such places in Nakuru, Eldoret, Meru, Nanyuki, etc.

2.5.2 Tractor sales

In the international market, it is estimated that 65-85% of all tractors sold are used in agriculture. In this country about 75% of the tractors sold are involved in agriculture, but this seems to be declining.

During the last three years sales of tractors has been declining as seen from the table below.

Table 2.10 :HISTORICAL TRACTOR MARKET PENETRATION 1978-1991

YEAR	MASSEY		FORD		SAME		CASE IN		FIAT		OTHERS		TOTAL
	NO	%	NO	%	NO	%	NO	%	NO	%	NO	%	NO
1978	481	28	419	24	291	17	332	19	112	7	85	5	1720
1979	311	25	236	19	184	15	380	30	94	7	57	5	1262
1980	302	30	239	24	206	21	124	12	81	8	45	5	997
1981	254	25	213	21	207	20	174	17	117	12	52	5	1017
1982	136	18	186	25	169	22	109	14	118	16	40	5	758
1983	127	25	150	29	90	18	68	13	51	10	24	5	510
1984	204	28	222	31	163	23	46	6	44	6	32	5	709
1985	277	27	285	28	259	26	74	7	62	6	51	5	1008
1986	428	30	300	27	221	20	39	4	80	7	52	5	1112
1987	500	45	241	22	174	16	60	5	72	7	52	5	1099
1988	445	34	371	29	188	15	210	16	12	1	67	5	1293
1989	478	38	257	20	220	18	185	15	55	4	62	5	1257
1990	381	35	229	28	150	14	126	12	72	7	52	5	1080
1991	262	36	198	27	114	16	68	9	56	8	23	3	721
TOT	4576	31	3616	25	2636	18	1995	14	1026	7	694	5	14543

Source: Kenya Motor Industry Association

It is estimated that about 500-600 units were sold in 1992. This decline in tractor sales is mainly attributed to increasing price of tractor (making them increasingly unaffordable to farmers), foreign exchange unavailability and sub-division of land making the need for a tractor unviable.

In comparison to sales the table below shows the number of tractors actually registered in the Country during the period 1980-1988.

Table 2.11: Tractor Registration

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
No of Tractors	13000	13500	13500	13600	14000	14100	14100	16500	17000

The individual tractor dealers and agents are discussed below:

2.5.3 C.M.C. Hughes (Agricultural Division)

The Company has been in the business of selling Ford Tractors in Kenya for 67 years. It has now become a public company with a direct Government share of 35%. The Company is well rooted in Kenya and enjoys considerable patronage from the farmers. The distribution infrastructure is also well established, in the form of branch offices and coordinated back-up service.

The Ford tractors are imported from United Kingdom and the current capacity range is from 16HP to 385HP. This wide capacity range serves many applications both in service industry and agriculture. According to the company 75%

of the tractors sold are for agricultural application and the capacity ranges from 65HP to 385HP. The company enjoys a market share of between 22 to 25% of the national tractor sales and has offices in Meru, Nanyuki, Nakuru, Eldoret, Kisumu and Nairobi.

2.5.4 Sametract

This is a private company operating in Kenya for the last 40 years selling SAME tractors from Italy. It is the third biggest in terms of tractor market share (about 15%) in Kenya. The tractors capacity range from 38HP to 165HP which serves both small, medium and large scale farmers.

Its sales figures show that the popular models are in the range 66HP to 88HP which they consider the ideal capacity range for farmers in Kenya. The high capacity tractors are sold mainly to the large scale farmers in Rift Valley and also farmers in the the sugar belt. It has offices in Eldoret, Nakuru, Kisumu and Nairobi.

2.5.5 Farm Machinery Distributors Ltd. (FMD)

The company started selling Massey Ferguson tractors in Kenya 66 years ago. It is one of the Motor Mart Group of Companies owned by Lonhro (E.A.) with headquarters in Nakuru. The tractors are imported from U.K. and France with a current stocked capacity range from 47HP to 165HP.

According to their sales figures this company has become the leader in tractor sales with a market share of about 34% of the national market but the sales have been on the decline. The company has offices in Nakuru, Mombasa and Nairobi and agents in Nakuru, Kisumu, Nanyuki and Meru.

2.5.6 Fiatagri (K) Ltd.

This company used to sell fiat tractors under FIAT (K) Limited but now the dealership has been taken over by Lonhro under the new name Fiatagri (K) Ltd. The tractors are imported from Italy and the capacity range is between 55HP to 180HP with a market share of about 5% as per recent sales figures.

Despite the rising cost of tractors the sales have been stable. The tractors are relatively cheaper than the equivalent competing models and the popular capacity range is 65HP to 80HP.

2.5.7 Lima Ltd.

The company started selling Case International tractors in 1975. The tractors are imported from Britain, Germany and America. From the information available the company has an average market share of 11.1% of national tractor sales. It has offices in Nairobi, Nakuru and Eldoret.

2.5.8 Holman Brothers (E.A.) Ltd.

The company started selling John Deere tractors in Kenya in 1974. It is a private company and imports the tractors from Germany. The dealership of these tractors has now been taken over by M/S Gailey & Roberts Ltd. The tractor range is from 53HP to 120HP with a market share of approximately 9%.

2.5.9 Shamba Machines

The company started selling Steyr tractors in 1984. It is a subsidiary of Boghals garage and is the sole agent of Steyr tractors from Austria.

The company uses Bhogal's garage branches in Nakuru, Eldoret, Kisumu, Nairobi and Mombasa as their agents. M/s Alfa Motors of Nairobi are also their agents and stockists.

2.5.10 Issues in Tractor Distribution

Based on the survey the following issues seem to be the main ones in tractor distribution:

(a) **Prices and Financing**

Tractor prices have been increasing very fast to an extent that they are no longer affordable to the typical farmer. The impact of price increase becomes even more pronounced when the farm produce prices do not follow the same trend. The tractor dealers blame the price increase on the foreign currency fluctuations since all the tractors are being imported. Thus there is little that can be done on the actual price as this depends on external forces.

The solution seems to be in identifying cheaper sources of tractors or in the financing arrangements. To date the dealers except for the Motor Mart group do not have any inhouse financing arrangements and farmers have to rely on the normal financing institutions. It is argued that these finances are normally at terms unaffordable to the farmer.

(b) **Ownership and Control**

Mergers and takeover are taking place in the tractor business. The Motor Mart group for example markets the Fiat and MF tractors which make over 40% of the tractor business.

With its advantage of having an internal financing facility the group is easily able to dictate terms to the farmer.

(c) **Import Licensing**

This seems to be a major complain by the importers and it touches not just on lack of import licences but also on the bureaucracy and delays in the system.

(d) **Assembly & Local Manufacture**

There have been discussions on the possibility of assembling and even "manufacturing" tractors locally. This seems a very attractive proposition except that tractor demand may not be adequate to warrant the investment. Furthermore local assembly or "manufacture" will not necessarily lead to cheaper products and could even lead to price increases. Essentially therefore if the price is the problem, local assembly is not an automatic solution. It should also be recognised that the potential for local manufacture of tractor parts is minimal as we are basically looking at a gear box, engine, canopy and tyres. With these products and given the level of our industrial activity, the local value added is bound to be negligible for a long time.

However local manufacturing has the positive result of creating employment, and saving foreign exchange and resulting to transfer of technology. Thus while the viability of assembly can be explored, especially in collaboration with a developing country, the above factors need to be taken into consideration.

A long term strategy which can be adopted is to modernise the local manufacturing workshop to a position where they can make targeted spare parts for tractors. With the right raw materials and pricing these will form the nucleus for making tractor parts by challenging the importers resulting in subcontracting.

2.6 POLICY ENVIRONMENT

2.6.1 Role of Government

In terms of policy there has been no evidence of a well planned strategy for the development of the Motor Vehicle Industry in the Country. Even during the era when Government intervention was thought a crucial driving force in industrial development, there seems to have been no plan for progressive manufacture of simple and sophisticated vehicle components or for the development of key industrial facilities to feed the sector such as metallurgical industries, forging plants, press shops, precision casting plants etc. What may have appeared in the Development Plans, was not implemented and recommendations made in various Government reports were not pursued. As a result the little that has happened in practical terms has been a result of private sector intiatives.

The role that the government has been excepted to play include:

(i) application of judicious pressure on the local assembler to increase the local content.

(ii) facilitate through incentives production of components locally.

(iii) facilitate development of key industries for supply of raw steel, castings, forgings, pressings and toolings and where the local production is not feasible allow easy access through importation.

(iv) limit models and types of vehicles in order to avoid diseconomy of scale and allow for local integration.

(v) provide uniformity in policies so as to facilitate long term planning in the industry.

2.6.2 Ploriferation of Vehicle Types and Models

One of the policy issues that has been under discussion within the Government is the need (or not) to reduce the number of vehicle models and makes in the Country. The argument has been that whereas such a reduction could interfere with choice and wish of the potential car owner, it would nevertheless create economies of scale for assembly and component manufacture and also minimise problems of unserviceable vehicles and high cost of maintenance of vehicles generally. Gradually this would lead to a transfer of technology and eventually to full local integration of the vehicle manufacturing industry in the Country.

A study done in 1975-77 showed that the newly registered vehicles included 60 different makes of passenger cars with 180 different models, 76 models of 44 makes of utility vehicles and commercial vehicles and 26 models of 19 different makes of buses.

Some of the issues discussed in government reports and memoranda on this subject are highlighted below:

(i) the present model proliferation has introduced inefficiency in the operation of industries in this sector.

(ii) if the Government is to introduce measures to curb increase in vehicle models and makes then this should be coupled with the growth of auto ancillary industries to supply components to assembly plants since production runs will now be higher and it will be more feasible to manufacture additional parts.

2.6.3 Local Content

Right from the time of authorising the setting up of the assembly plants, the Government had the intention of seeing the local content of the assembled vehicles increase gradually. However whereas targets may have been set, the

mechanisms for implementation were not adequately put in place. The Government has nevertheless anacted various Legal Notices (see appendix 2) restricting importation of certain items. The effect of these Legal Notices has been that the imported CKDs exclude the specified components unless such components are not available at all or at the desired specification and quality.

2.6.4 Auto Liason Committee

The implementation of the legal notices on local content have potential grounds of conflict between the suppliers and the assemblers/dealers. Under the circumstances, the key actors in the motor trade agreed to set up an Auto Liason Committee (ALC) under the auspices of the Kenya Association of Manufacturers. The Committee had the task of reviewing the various applications for imports to ensure that where parts covered under the legal notices are being imported, then there are good grounds to do so. Furthermore the Committee was responsible under its technical committee to review the status of additional parts being proposed for inclusion in the list of restricted items. In effect the committee enforces the use of locally manufactured parts as defined in the Legal Notices and it does this with the blessings and support of the whole motor industry.

2.6.5 Kenya Motor Industry Association (KMI)

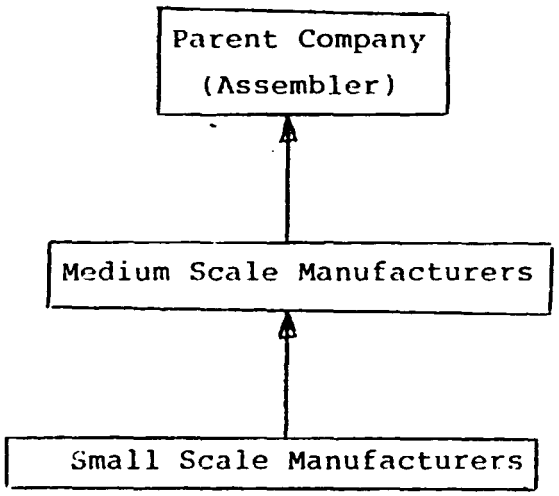
KMI was formed in 1989 as a lobby organization for the Motor Vehicle Industry and performs most of the public relations activities for the sector. It has been very active in raising issues in local newspapers, with Government Departments and others who are in a position to assist the Motor Industry. The basic argument put forward by the association is that importation of CBUs can only kill the industry and despite whatever shortcomings local assembly may have it at least offers some potential to the Country in terms of employment, technological growth etc. whereas CBUs offer none. KMI also argues that through local assembly rationalisation of vehicle makes and models will be automatic and requires no further Government intervention.

CHAPTER 3

SUBCONTRACTING IN AUTOMOTIVE INDUSTRY IN KENYA

In developed countries, such as Japan, the structure of subcontracting in automotive manufacturing industry is pyramidal, with the parent company (assembler) at the peak and the smallest manufacturer at the base, see figure 1.

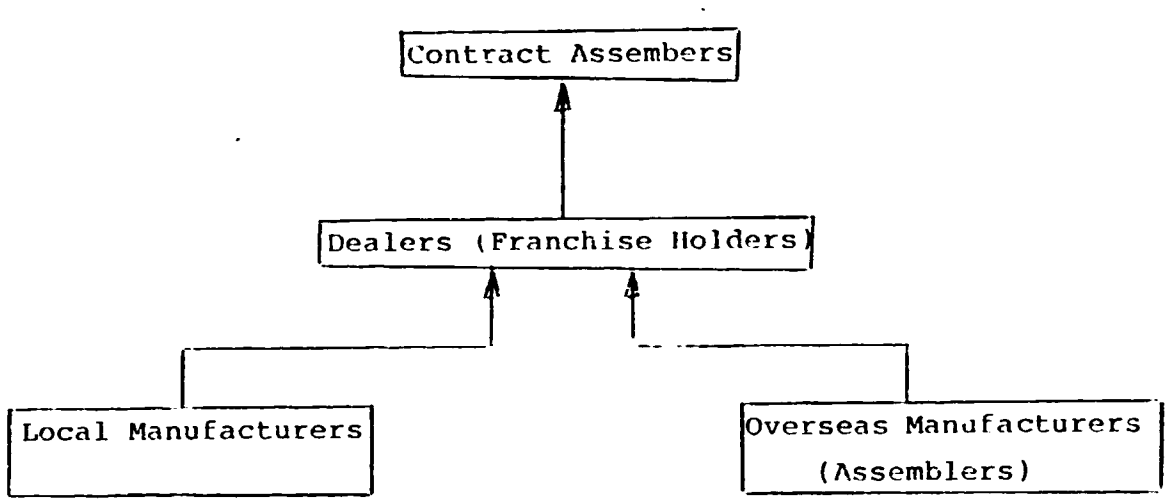
Fig. 1



The above structure is based on mutual interdependence, competitiveness, backed by research and development. In most cases the parent company offers technological assistance as well as lending manufacturing facilities to the subcontractors.

In Kenya the general situation is different, mainly centered on the dealers (franchise holders) and well controlled by the interests of the overseas manufacturer (assembler). The general structure is per figure 2.

Fig. 2: **Subcontracting Structure in Kenya**



The structure in figure 2 is characterised by divergency of interests with the overseas manufacturers and dealers trying to make CKDs as complete as possible, thereby discouraging local manufacturing of parts. In other words, the structure in figure 2 is not stable.

The structure is stabilised by government policies on importation of CKDs, by designating the parts that can be adequately manufactured locally. However, the subcontracting structure is enlarged if the replacement market is included. Figure 3 is the enlarged structure.

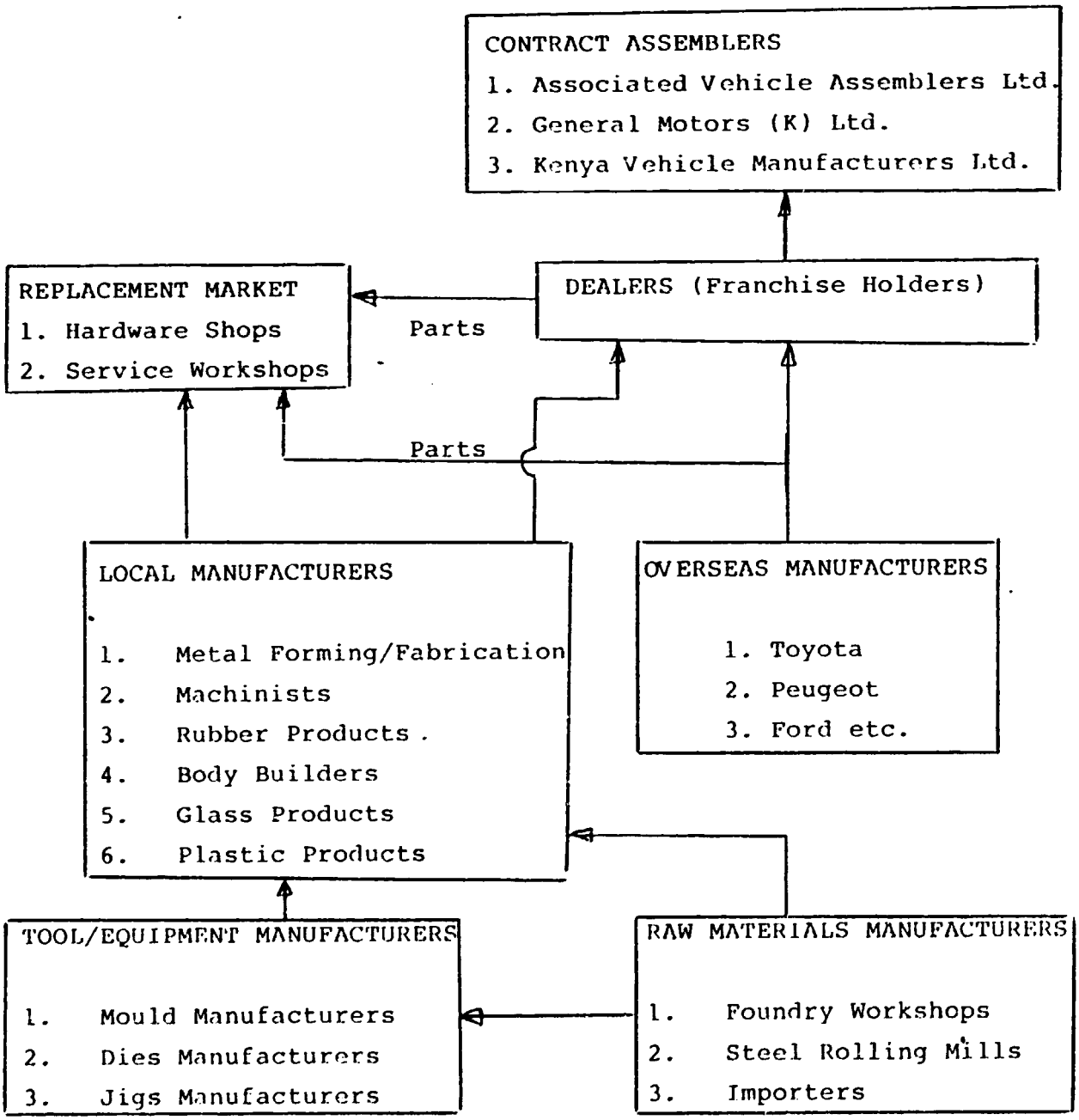
The structure is highly sensitive to:

(a) changes in government policies on importation of CKDs and spare parts.

(b) changes in importation tariffs on raw materials.

(c) changes in motor vehicle models.

Fig 3 : Subcontracting Structure in Kenya Automotive Industry



The key players as seen from the structure in Figure 3 are:

- Contract assemblers
- Dealers (Franchise Holders)
- Replacement market
- Overseas manufacturers (assemblers)
- Local manufacturers
- Tools and equipment manufacturers
- Raw materials manufacturers

3.1 Contract Assembers

They assemble motor vehicles from Completely Knocked Down Kits and Parts they receive from the Dealers. In this kind of situation the contract assemblers have very little influence on the development of the automotive parts manufacturing subcontracting in Kenya. Their only role is to vet the qualities of locally manufactured parts as supplied by the dealers.

It is very clear that the collaborative effort for search of technological excellence, and competitiveness, as seen in developed countries, is missing.

3.2 Dealers

These are the people who import the Completely Knocked Down Kits, and for sure they represent the interests of the overseas motor vehicle manufacturers. The trading emphasis for the overseas manufacturers is to maximise profits by exporting Completely Knocked Down Kits with nothing for local manufacturing. This means that the dealers have negative incentives to the development of subcontracting in Motor Vehicle Industry.

3.3 Replacement Market

The replacement market has the most promising potential for enhancing automotive parts manufacturing, subcontracting in the Country. The actors in the replacement market are

spare parts businessmen and private customers who are motivated by quality and price of products. They obtain their goods from the import market and the local manufacturers. On the Kenyan scene the contribution of the sector to subcontracting has been negatively influenced by:

- Unaccustomed goods brought into the Country through corruption.

- Unjustified preference attitudes for imported products by the customers.

3.4 Local Manufacturers

The manufacturing sector is the core for subcontracting. In Kenyan Motor Industry Manufacturing Subcontracting has not been fully developed as a result of:

- Almost closed dealers market

- High frequency of changing Motor Vehicle Models

- Economies of scale Production Units

- Lack of research inputs and technological assistance from the overseas manufacturers.

- Illegal imports.

The above negative factors make the Kenya Motor Vehicle Market insecure to the investors and hence:

- Modern spare parts manufacturing industries are lacking.

- Utilization of inferior manufacturing methods leads to poor quality, high prices and uncompetitiveness.

3.5 Summary and Conclusions

- Subcontracting in Kenya Motor Vehicle Industry is not cohesive with the negative incentives largely out-weighing the positive incentives.

- Negative government policies and corruption in handling spare parts imports has rendered the Kenyan Market insecure to the manufacturing investors resulting in lack of modernisation. Locally manufactured spare parts are of poor quality and uncompetitive, thereby tilting the market in favour of importation.

- Manufacturing flexibility capacities to cope with the rapidly changing motor vehicle industry and to deal positively with the regular problems of economies of scale in production units, has been lacking.

3.6 Automotive Parts Manufacturing Facilities in Kenya

It has been established that the automotive parts manufacturing facilities in Kenya are relatively poor and inefficient. A brief discussion and understanding of these facilities is necessary as a basis for the establishment of flexible parts manufacturing approach. The facilities that are directly involved in the manufacture of automobile parts have been categorised as follows:

- Rubber products manufacturing facilities
- Plastic parts manufacturing facilities
- Glass manufacturers
- Brake lining and pads manufacturing facilities
- Gasket and seals manufacturing facilities
- Automotive filters manufacturing facilities
- Radiators manufacturing
- Shock absorbers and jack manufacturing facilities
- Leaf spring manufacturing facilities
- Body building facilities

- Exhaust systems manufacturing facilities
- Manufacturers of seals, soft trim and upholstery
- Manufacturing facilities for electrical products
- Moulds and die manufacturing facilities
- Casting facilities and service workshops.

3.6.1 Rubber Products Manufacturing Facilities

The facilities in Kenya can adequately manufacture tyres, radiator hoses, engine mounting, and rubber bushes. The manufacturing is adequately supported by internal or external (sub-contractors) mould manufacturers. Appendix 3(a) gives the details of the current manufacturers. Although the dealers have not accepted the local products the replacement market is distributing the products.

The basic technology for rubber manufacturing is:

- milling capacity

- Ability to blend synthetic rubber with natural rubber.

- Quality control laboratory.

M/s Car & General and Plastic & Rubber Industries Ltd. have the facilities and skills.

3.6.2 Plastic Parts Manufacturing Facilities

As per appendix 3(b) the Country has adequate manufacturing capacities for, rear light housing, grills, dash boards, indicator and parking lights glasses, steering and kits. However, the investments in dies, the changing car models, and competition from imported products make local manufacturing unviable.

In case of complex shapes, local manufacturing is handicapped by the non availability of CNC Machining centres for manufacture of the appropriate moulds.

Importation of moulds is cumbersome, as the local manufacturer has to ship the product specimen to the overseas mould manufacturer for mould manufacturing. The availability of adequate mould manufacturing capacity is therefore necessary for flexible manufacturing of plastic parts.

It was also noted that the plastic metallising plants especially for indicator lights housing are not available in Kenya.

3.6.3 Glass Manufacturing Facilities

The manufacturers of automotive windscreen glass and door glasses are shown in appendix 3(c). Comptetitive and flexibility levels have been achieved by the two manufacturers. The glass products have already been accepted by the assemblers and the replacement market.

3.6.4 Brake Lining and Pads Manufacturing Facilities

The vital manufacturers are shown in appendix 3(d). As already noted local manufacturing is carried out under the franchises of overseas manufacturers. Except for manufacture of raw materials, local manufacturing facilities are adequate. Pressure moulding, bonding, grinding and riveting operations are all carried out in Kenya. The brake linings and pads have been accepted by the assemblers and the replacement market.

3.6.5 Gasket and Seals Manufacturers

Gaskets are manufactured in Kenya under the Franchise of overseas manufacturers. Manufacturing under franchise ensures maintenance of standards set out by the parent manufacturer.

In Kenya all raw materials are supplied by the parent company. The manufacturers shown in appendix 3(e) utilise conventional machines for manufacturing. The operations are simple and include; tracing, cutting, punching metal lining and packing. Gaskets are manufactured for replacement market.

3.6.6 Automotive Filters Manufacturing Facilities

Appendix 3(f) gives the list of the main manufacturers. The manufacture of filter elements has been adequately achieved. However, deep drawing of cartridges has not been achieved as most manufacturers prefer to import the metal casing instead of raw materials and dies. The filters are consumed by the replacement market.

3.6.7. Radiator Manufacturing Facilities

There are three manufacturers shown in appendix 3(g). Local manufacturing of radiators satisfies the local demand. Although the manufacturing line is labour intensive the facilities are flexible enough to the changing needs of the Motor Industry. The two manufacturers M/s Burns & Blane Engineering Ltd and City Radiators Ltd. have automatic tooling machine for top, bottom and side frames. Development of a new radiator takes about one week.

The local manufacturers do not have the skills for manufacturing radiator caps because of the required precise thermal and machanical characteristics.

The radiators are consumed by the assembly plants and the replacement market.

3.6.8 Shock Absorbers Manufacturing Facilities

As per appendix 3(h) there is only one manufacturer holding the franchise of Monroe of Europe. About 75% of the materials are imported, including pistons, valves, springs.

The Local manufacturing is basically an assembling operation. Although the company is unable to compromise the franchise agreement future manufacturing of shock absorbers should include pistons, valves and springs.

The manufacturing flexibility is good except when the shock absorbers have complicated outer brackets and shapes, as common with modern cars. In such cases the company has to invest in dies which must be supported by demand.

3.6.9 Leaf Spring Manufacturing Facilities

The leaf spring manufacturers are shown in appendix 3(i). The manufacturing of leaf spring and accessories has been adequately achieved. The springs are consumed by both the assemblers and the replacement market.

Facilities for manufacture of coiled spring have not been installed because there is no demand by the replacement market and the demand from the dealers is inadequate to support the investment.

3.6.10 Body Building Facilities

The facilities employed are sheet metal forming and cutting machines, in addition to general fabrication. There are many body builders in the Country and the demand is adequately satisfied. Appendix 3(j) gives the names of some of the builders.

However, M/s Auto Spring Manufacturers Ltd. have planned to manufacture Pickup Body Pannels for assembling by General Motors Ltd. This kind of investment is not very flexible and is expensive, requiring the rationalisation of the pickup bodies. CNC machining centres have been installed although the rationalisation has not been effected.

3.6.11 Exhaust Manufacturing Systems

Although only the three main manufacturers are shown in appendix 3(k), there are many small scale exhaust manufacturers in Kenya. All manufacturers use conventional machines i.e. forming machines, migwelding, pressing, rolling and seaming. Initial production is based on copying the original exhaust system. The consumers have complained about the price and short life compared to the imported products. The manufacturing capacities are adequate.

3.6.12 Manufacturing Facilities for Soft Trim and Upholstery

The main manufacturers are shown in appendix 3(l). The manufacturers have the machinery and the casting moulds. They have the flexibility of manufacturing the moulds internally.

The assemblers are the only consumers because the seats are rarely replaced for the whole life of the vehicle.

3.6.13 Electrical Parts Manufacturing Facilities

The manufacturers are shown in appendix 3(m). The manufacturing of batteries, although under various franchises, is basically carried out using local materials and skills.

Manufacturing of batteries with rubber casing is being abandoned in favour of plastic casing because the rubber casing is heavier and more expensive.

There is adequate capacity and flexibility in the manufacture of batteries in Kenya.

3.6.14 Moulds and Dies Manufacturing Facilities

In addition to the manufacturers shown in appendix 7, many plastic and rubber products manufacturers have facilities for internal manufacturing of simple injection moulds. Most manufacturers in Kenya have dies sinking machines (spark erosion), simple copy milling machines backed by conventional machine tools. These facilities are adequate for production of simple injection moulds and small blow moulding moulds.

Facilities for manufacture of complex shapes such as rear lights reflectors and complex blow moulds are not adequate in Kenya.

The same applies for die making facilities. M/s Auto Spring Manufacturers Ltd. have established a vertical CNC Milling Centre and have the capacity to manufacture large forming dies and moulds.

The manufacturing skills are also scarce and usually undertaken by Asian expatriates.

3.6.15 Casting Facilities and Service Workshops

The Companies involved in foundry work are shown in appendix 8. In the past few years foundry sector has realised some modernisation in the area of alloy casting and die casting. With the establishment of E. A. Foundry Works Ltd. the manufacturers of moulds are able to obtain their raw materials locally. The CNC Vertical Milling Centre would be useless without the casting facilities at E. A. Foundry Works. The casting facilities, although not fully developed, can produce alloy steels for drive shafts, crankshafts, stabilizer bars, stub axles, gearbox housings etc. However, these cast items need to be supported by modern forging plants for grain fining to enhance strength. These forging plants are not available in these casting shops. The gear grinding facilities, for noise-free running, are also not available.

Pressure die casting is only carried out by Kensmetal Industries Ltd. Currently they have steered away from the automobile industry because the market is insecure.

The service workshops specialise in engine reconditioning services such as crankshaft grinding, reboring and cylinder head resurfacing. These facilities could easily be modernised to manufacture crankshafts from semi-finished materials from Europe by installing induction hardening facilities and dynamic balancing equipment.

3.6.16 SUMMARY OF FINDINGS AND CONCLUSIONS

The findings and conclusions of this survey concurs with the findings of the earlier survey conducted by the Ministry as follows:

- Since the country does not have a Primary Iron and Steel processing plant, modern Foundry and Machine Industries facilities, the existing motor vehicle industry is operating at a disadvantage because the manufacturers/assemblers have to import practically all the inputs they need. Consequently, the supply of inputs is constrained by delivery time, foreign exchange availability and quality of the product.

- The quality and pricing of the local components are affected by the state of technology obtained in the factories and there is lack of specialization because auto ancillary industry is called upon to produce many and varied components on short run basis to cater for the numerous makes and models of vehicles being assembled in the Country. Consequently, the auto-ancillary industry produce components which are often rejected by the assembers on account of poor quality even though this is sometimes exaggerated. This inefficient manufacturing of components leads to high operating costs resulting in components which are more expensive than similar imports.

- The proportion of local components in the assembled motor vehicle is very low. This is 15% in passenger cars 17% in commercial vehicles compared to the targeted levels of 40% and 50% respectively which was to have been achieved todate. The Government has so far gazetted some 29 components that must be procured locally for the motor vehicle assembly (Legal Notices No. 22 of 1980 and 124 of 1986 refers), which has not been fully implemented. Other components which have been perfected should also be covered by gazettement on recommendation by the KEBS.

- Negative government tariff policies on importation of spare parts and flooding of unaccustomed spare parts in the industry has made the market insecure to the potential investors.

CHAPTER 4

MOTOR VEHICLE POPULATION IN KENYA

4.1 Background Information

In the previous chapter the nature and level of Industrial Subcontracting has been examined and analysed, including the installed manufacturing capacities. It has been shown that the manufacturing facilities are inadequate, and where available, they apply out dated technologies resulting in poor qualities and uncompetitiveness in price. Economy of scale of production, car model changes and illegal imports, are factors that have made the Kenyan Market insecure to the potential modernisation investors. The interests of the overseas car manufacturers have inhibited the growth of automotive Subcontracting in Kenya.

The solutions to the above problems can be achieved through increased Industrial Subcontracting to be developed by:

- Installation of conducive subcontracting environment

- Setting up and modernising of manufacturing facilities, to include flexible manufacturing capacities for wide range of automotive products.

- Installation of sustainable Government policies on:

  (i) Importation of spare parts.

  (ii) Importation of Completely Knocked Down (CKD) Kits and fully Built Units (FBU).

  (iii) Local assembling plants regarding vehicle models rationalisation.

The above objectives can only be realised by:

(a) estimating the past, the current and the future motor vehicle population in Kenya.

(b) analysis of motor vehicles composition by types.

(c) estimation of spare parts demand and their classification according to their manufacturing process.

4.2 The Market

4.2.1 Motor Vehicle Supply

According to the report on automotive spare parts and components Industry in Zimbambwe and other PTA Countries, prepared by United Nations Industrial Development Organisation (UNIDO) in 1992, the Motor Vehicles Population in Kenya was estimated to be 365,000 in 1989.

The estimate was given by Kenya Motor Indsutry (KMI) Association. The same report quotes another estimate of 280,000 for 1989 by UK's Society of Manufacturers and Traders (SMMT).

The estimation of Motor Vehicle Population in Kenya is difficult because the distribution structure is comples. Some vehicles are locally assembled while others are imported fully built by dealers, individuals, deplomatic missions and Non-Governmental Organisations. In such circumstances, a fair estimate could be obtained from teh Motor Vehicle Licencing statistics.

Table 4.1 shows the number of motor vehicles with current licences, by type and market share for the years 1981 to 1989. This table excludes tractors, motor cycles, trailers and Government vehicles. It is noted that the vehicle population increased from 201,554 in 1981 to 277,807 in 1989.

If 17,000 tractors (table 2.11), about 15,000 government vehicles and motor cycles are added to the figure of 277,897 in 1989, the vehicle population closes to 360,000 in 1989.

The vehicle population growth is shown in table 4.2. Except for 1982 and 1985 the average growth in population is 5% giving the five year projection as per table 4.3.

TABLE 4.1 VEHICLES WITH CURRENT LICENCES AND MARKET SHARE BY TYPE

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Motor cars	114,197	115,316	116,852	122,300	126,188	127,351	133,335	141,791	150,681
(Market share)	56.6	56.5	56.8	55.9	54.9	55.3	54.6	54.4	54.2
Pick-Ups & Vans	57,969	59,358	59,618	64,805	69,441	69,457	73,718	78,501	83,348
(Market share)	28.8	29.1	29	29.6	30.2	30.2	30.2	30.1	30.0
Lorries & Trucks	23,956	23,634	23,335	24,769	26,186	25,190	27,916	29,706	31,528
(Market share)	11.9	11.6	11.3	11.3	11.4	10.9	11.4	11.4	11.3
Buses & Mini buses	5,432	5,724	5,959	7,001	8,217	8,218	9,172	10,756	12,340
(Market share)	2.7	2.8	2.9	3.2	3.5	3.6	3.8	4.1	4.5
Total	201,554	204,032	205,764	218,875	230,032	230,215	244,141	260,754	277,897
(Full Market)	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Statistical Abstract 1990

TABLE 4.2 VEHICLES POPULATION GROWTH BASED ON CURRENT LICENCES

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Current Licences (All)	201554	204032	205764	218875	230,032	230,215	244,141	260,754	277,897	291,700	306,380	3216
Growth %		1.2	0.84	6.4	5.1	0	6	6.8	6.5	5	5	5

Notes

- The average growth rate is 5% p.a.

- In 1982 the Country had civil strife and vehicle population stagnated

- In 1985 there was economic recession and draught in 1984 had contributed to stagnation.

TABLE 4.3

PROJECTED MOTOR VEHICLE POPULATION (Excluding Tractors and Motor cycles)

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
292,987	307,541	322,918	339,064	356,018	373,819	392,509	412,135	432,712	454,379

The above projection does not take into account of the effects of the current structural adjustment, and future changes in public transport.

4.2.2 Motor Vehicles Composition Analysis by Type

Table 4.1 classifies the motor vehicles into:

(i) Motor cars - includes passenger cars, 4WD estates

(ii) Pick-ups - includes half ton and one tone models

(iii) Lorries & trucks - includes light trucks (from 3 tons to 5 tons) seven ton lorries and heavy trucks.

(iv) Buses and Minibuses - includes 18-seater 25 seater built from light trucks and standard buses.

According to Table 4.1 the market share for each class has been constant with averages values as follows:

Motor cars	- 55% market share
Pick-ups	- 30% " "
Lorries & trucks	- 11.5% " "
buses and minibuses	- 3.5% " "

Classification by Kenya Motor Industry (KMI) association is slightly different, breaking motor cars into passenger cars and 4WD estates, as given in appendix 5(v). The market share by type based on sales of locally assembled vehicles is as follows:-

- Passenger cars	- 29.61% market share
- 4WD Estates	- 9.05% " "
- Pick-ups	- 31.12% " "
- Light trucks	- 14.40% " "
- Heavy trucks	- 5.93% " "
- Minibuses	- 5.91 " "
- Other buses	- 3.98% " "

TABLE 4.4 NEW VEHICLE REGISTRATIONS AND MARKET SHARE

Source: Statistical Abstract 1990

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Motor cars (Units)	4,513	4,545	4,995	5,448	3,917	6,321	7,922	8,456	8,890
Market Share (%)	31.8	38	44	41.6	34.9	45.1	50.4	50.9	51.9
Pick-ups (Units)	6,808	5,447	4,415	5,187	4,652	4,751	4,720	4,783	4,847
Market share (%)	48	45.5	38.9	39.5	41.5	33.9	30	28.8	28.3
Buses & Minibuses (Units)	711	625	584	1,042	1,217	1,048	1,330	1,584	1,584
Market share (%)	5	5.2	5.2	8	10.9	7.4	8.4	9.5	9.2
Lorries and trucks	2,165	1,355	1,355	1,434	1,421	1,906	1,759	1,790	1,822
Market share (%)	15.2	11.3	11.9	10.9	12.7	13.6	11.2	10.8	10.6
Total Registration	14,197	11,972	11,349	13,111	11,207	14,026	15,731	16,613	17,143
Total share (%)	100%	100%	100	100	100	100	100	100	100

The Motor Vehicle Market share by type for new registrations for the 1981 to 1989 is shown in Table 4.4. Except for 1982 and 1985 the market share for motor cars shows a steady increase from 31.8% in 1982 to 51.9% in 1989, while that of pick-up shows a steady decline from 48% in 1981 to 28.3 in 1989.

Comparing table 4.1 and table 4.4 the Market Share structure for new registrations tend to stablilise towards the market share structure for current licences (for motor vehicle population).

Table 4.5 gives the motor vehicle sales for the locally assembled vehicles for the years 1989 to 1992, as compiled by various dealers and assemblers. The summary of the sales and the market share structure by type is shown in table 4.6. The figures are slightly different from KMI figure in apendix 5(v) probably due to human error.

Table 4.6 shows that although the sales have been declining since 1989, the market share for each type has been steady at the following average levels.

- Passenger cars	- 30% market share
- 4WD Estates	- 9.5% " "
- Pick-ups	- 30% " "
- Light trucks/light buses	- 12.5% " "
- Lorries and trucks	- 9% " "
- Minibuses	- 7% " "
- Buses	- 2% " "

TABLE 4.5: MOTOR VEHICLE SALES BY DEALERS

Source: Dealers and Assemblers

		Passenger Cars	Pick -ups	Mini- buses	LT Trucks L/Buses	Buses	4WT Estate	Trucks	TOTAL
Cooper Motor Corporation	1989	154	71	53	-	221	660	174	1,333
	1990	117	98	57	-	148	77	114	1,211
	1991	109	139	10	-	60	642	195	1,155
	1992	206	222	19	81	77	651	196	1,472
General Motors	1989	500	362	-	623	109	160	696	2,481
	1990	196	296	-	602	93	115	626	2,128
	1991	20	575	-	550	120	140	360	1,865
	1992	261	602	-	797	50	132	226	2,068
DT Dobie & Co	1989	901	1296	542	40	-	-	14	2,823
	1990	820	1127	541	23	-	-	20	2,531
	1991	471	695	387	19	-	-	2	1,573
	1992	637	692	436	-	-	-	-	1,765
Toyota (K) Ltd	1989	720	1340	480	80	-	240	30	2,890
	1990	720	1280	240	80	-	220	20	2,561
	1991	340	549	160	20	-	80	-	1,149
	1992	359	431	140	-	-	120	-	1,050
Fiat Kenya Motors	1989	104	-	-	-	-	-	4	108
	1990	94	-	-	-	-	-	14	108
	1991	64	-	-	-	-	-	13	77
	1992	54	-	-	-	-	-	7	61

		Passenger Cars	Pick-ups	Mini-buses	L/Trucks L/Buses	Buses	4WD Estate	Trucks	TOTAL
Fuso Bruce Trucks									
	1989	-	-	-	-	-	-	360	360
	1990	-	-	-	-	4	-	332	336
	1991	-	-	-	-	8	-	320	328
									124
Marshalls	1989	1320	1056	-	-	-	-	7	2,383
	1990	1485	888	-	-	-	-	16	2,389
	1991	606	312	-	-	-	-	31	949
	1992	781	312	-	-	-	-	31	1,124
ECTA (Subaru)	1989	80	-	-	-	-	-	-	80
	1990	-	80	-	-	-	-	-	80
	1991	40	60	-	-	-	-	-	100
	1992	56	20	-	-	-	-	-	76
Mitsubishi	1989	320	170	16	400	-	-	-	906
	1990	290	220	16	-	-	-	-	948
	1991	340	200	14	480	-	-	-	1,034
	1992	280	60	8	300	-	-	-	648
Daihatsu	1989	200	-	-	40	-	-	-	241
	1990	200	-	-	40	-	-	-	240
	1991	190	-	-	-	-	-	-	190
	1992	190	-	-	60	-	-	-	250

TABLE 4.6: LOCALLY ASSEMBLED VEHICLE SALES AND MARKET SHARE

Source: Dealers and Assemblers

	1989		1990		1991		1992	
	Sales	Share %	Sales	Share %	Sales	Share %	Sales	Share %
Passenger cars	4,329	31.9	3,922	30.9	2,406	28.3	2,646	33
Pick-ups	4,295	31.6	3,969	31.3	2,600	30.1	2,319	27.1
Minibuses	1,091	8	854	6.7	571	6.6	605	7
Light Trucks/ Light Buses	1,133	8.7	1,388	11	1,069	12.3	1,238	14.3
4WD Estates	1,060	7.8	1,106	8.7	862	9.9	903	10.5
Buses	330	2.4	235	1.9	198	2.2	127	1.5
Trucks	1,305	9.6	1,199	9.5	921	10.6	574	6.6
Total	13 537	100%	12,673	100%	8,707	100%	8,628	100%

The Market Share Structure is almost the same as the one given by KMI.

The four Market Share Structures need to be harmonised and develop an average Market Share Structure as per Table 4.7.

TABLE 4.7: MARKET SHARE STRUCTURES BY VEHICLE TYPE

VEHICLE TYPE	Market Share Structure-By Licensing %	Market Share Structure-By Locally ass. KMI %	Market Share Structure-By Locally ass. Dealers %	Market Share Structure-By Registration (1989) %	Recommended Market Share Structure %
Passenger cars	)	29.61	30	)	40
4WD Estates	) 55	9.05	9.5	) 51.9	10
Pick-ups	30	31.12	30	28.3	30
Heavy Trucks	)	5.93	9	)	4
Light Trucks	) 11.5	14.40	12.5	) 10.6	7
Minibuses	)	5.91	7	)	6
Other Buses	) 3.5	3.99	2	) 9.2	3
	100%	100%	100%	100%	100%

In developing the current Market Share Structure it has been noted that current registration of motor cars exceeds 50% of all the registered vehicles while the same type account for 40% of the locally assembled vehicles. This means that additional passenger cars are imported into the country. The Market Share by pick-ups has been steady at 30%.

From Table 4.3 the projected Motor Vehicle population statistics will be as per Table 4.8.

TABLE 4.8: PROJECTED MOTOR VEHICLE POPULATION STRUCTURE

	Market Share %	1993	1994	1995	1996	1997	1998
Passenger cars	40	142,407	149,528	157,003	164,854	173,096	181,752
4WD Estates	10	35,602	37,382	39,251	41,214	43,274	45,438
Pick-ups	30	106,805	112,145	117,752	123,640	129,823	136,314
Light Trucks	7	24,921	26,167	27,476	28,849	30,292	31,806
Heavy Trucks	4	14,241	14,953	15,700	16,485	17,310	18,175
Minibuses	6	21,361	22,429	23,551	24,728	25,964	27,262
Other Buses	3	10,681	11,215	11,775	12,364	12,982	13,631
Total	100%	356,018	373,819	392,509	412,135	432,742	454,379

From Table 4.4 on registration of new vehicles the current and future demand for vehicles can be estimated.

	1986	1987	1988	1989
Registered Vehicles	14,026	15,731	16,613	17,143
Growth rate %		12.1	5.6	3.2

However the above rates of growth cannot be conclusive because the demand for Motor Vehicles is influenced by many economic factors. The average annual demand of 4.6% p.a. has been derived over a period of eight years.

TABLE 4.9 DEMAND FOR NEW VEHICLES.

	1989	1990	1991	1992	1993	1994	1995	1996
New Vehicles	17,143	17,932	18,756	19,619	20,521	21,465	22,453	23,486

CHAPTER 5

AUTOMOTIVE PARTS FOR FLEXIBLE MANUFACTURING SYSTEM

5.1 Past and Present Consumption and Supply

The range of automotive spare parts is very wide making it impossible to determine analytical consumption and supply. Imports are only classified as automotive spare parts and accessories without further specification. The task is even complicated by the existence of many small, medium and large scale importers most of whom do not keep records. Even for those who keep records, and are adequately computerised, the motor vehicle model range is so wide that they will take months to extract specific spare parts consumption data. Such exercise would definitely disrupt their operations and as such they are tempted to fake the information.

Experience in Kenya shows that the supply of spare parts is not controlled by the franchise holders (dealers) but by small and medium scale importers because the dealer prices are 150% to 200% of the small business prices. The small and medium scale spare parts shops are also the only ones who support and have the potential to facilitate the development of local manufacturing.

5.2 Demand Analysis

Demand for motor vehicle spare parts can be estimated from the known motor vehicle population structure. However this is not easy bacause of parts wide range and varying replacement characteristics. There are also other factors, such as accidents and environmental conditions which influence the replacement frequency. The market is divided into assemblying market and replacement market.

5.3 Assemblying Market

The demand for parts is directly proportional to the number of locally assembled motor vehicles. Table 4.9 gives the demand for new cars in 1993 as 20,521 units. These units, if assembled, would utilise imported CKD units and locally manufactured parts.

5.4 The Replacement Market

This is the biggest consumer and most important for Kenya as regards foreign exchange saving and development of automotive parts manufacturing sector. The import bill for spare parts and accessories as compiled in the statistical Abstract 1990 is as follows:

	1984	1985	1986	1987	1988	1989
Billions of KSh.	0.8	0.92	1.32	1.3	1.72	1.87

The spare parts are required for maintenance of motor vehicle population in Kenya as per Table 4.8. The demand is therefore proportional to the total fleet in the Country. Traffic accidents increase the demand, for some parts, especially those located in the front and rear of the car such as headlights, grills, radiators, fans, bumper etc. Traffic accidents reported to the police are shown in Table 4.10.

TABLE 4.10: VEHICLE POPULATION BASED ON CURRENT LICENCES AND TRAFFIC ACCIDENTS

Source: STATISTICAL ABSTRACT 1990 (Excludes Government Vehicles)

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Vehicle Population	201,554	204,032	205,764	218,875	230,032	230,215	244,141	260,754	277,897
No. of accidents	7,250	7,524	8,023	8,229	8,474	9,066	9,783	9,783	10,106
No of accidents ---------- X 100% vehicle population	3.6	3.7	3.9	3.8	3.7	3.9	4	3.7	3.6

The analysis shown in Table 4.10 show that the number of traffic accidents reported to the police is proportional to the vehicle population, averaging 3.8% of all licenced vehicles. It is also worth to note that only major accidents are reported to the police for legal problems, otherwise the majority of minor accidents, probably double the number reported, are never reported to the police. These minor accidents involve headlamps, grills, radiators, rear lights, windcreens etc.

Replacement of worn out parts depend on road conditions and servicing. Bad roads will increase the replacement frequency for springs, shock absorbers, tie rods, bearings, rims, bushes, tyres, etc. However, there are other parts which could last the life of the motor vehicles if proper servicing is carried out. These parts include crankshaft, engine block, sump, cylinder head, connecting rods, flywheel, carburator, locks, steering wheel, etc.

Taking into account of the above information and table 4.8 the demand for automotive parts can be roughly estimated. Regarding the Kenyan Motor Industry several parts could be adequately manufactured after modernising the facilities and improvement of the subcontracting system.

The estimated demand will be based on 1993 vehicle population of 356,000 and new vehicles of 20,000 as per table 4.8 and 4.9.

It is also important to note the following factors:

- Passenger cars, 4WD Estates, pick-ups and minibuses are basically petrol powered.

- Passenger cars and 4WD Estates, mostly use coiled springs.

- Except for the body, light trucks, heavy trucks buses have common features of construction.

The motor vehicle population (rounded to nearing thousand) for 1993 is as follows:

Passenger cars and 4WD Estates	178,000
Pick-ups	107,000
Light trucks	25,000
Heavy trucks	14,000
Minibuses	21,000
Buses	11,000
Total	356,000

The estimated major accidents will be 13,000.

The automotive parts listed in table 4.11 could easily be manufactured in Kenya with minimal modernisation. However the estimated quantities could only be achieved if all the vehicles are assembled locally. In practice only 80% of the vehicles may be assembled. It is also important to note that some parts will be imported and local manufacturing may at most achieve 50% of the market share depending on the government policies and economic situation.

5.5 Manufacturing Processes

Six manufacturing processes have been identified to support flexible manufacturing based on subcontracting. The processes are:

- rubber moulding
- plastic mulding
- metal forming
- casting and forging
- machining process
- dies and mould making.

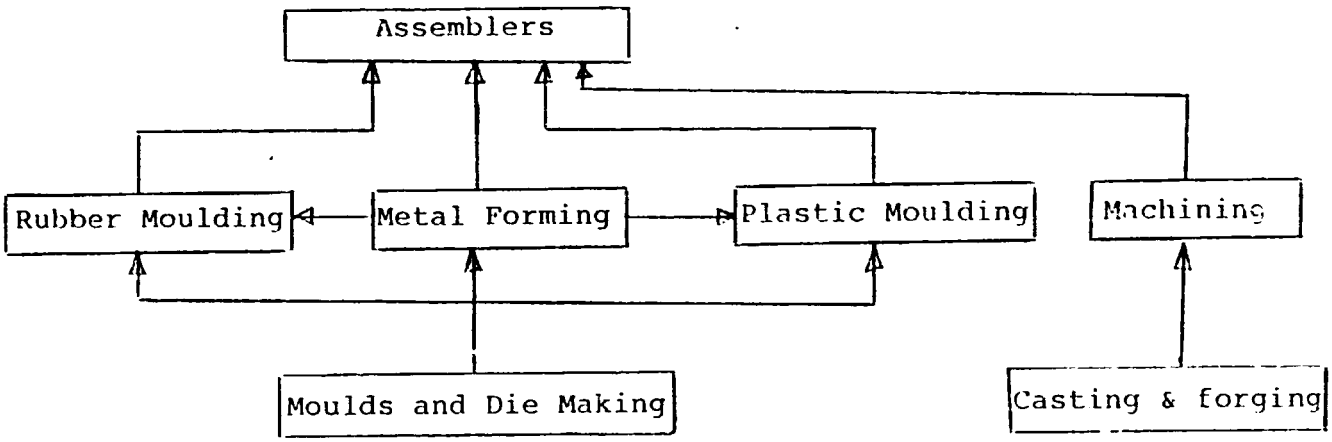
In the perception of the expected flexible manufacturing the subcontracting structure will assume the shape of fig. 4.

TABLE 4.11: ESTIMATED SPARE PARTS CONSUMPTION IN 1993

: VEHICLE POPULATION = 356,000
: NEW VEHICLES = 20,000

	REPLACEMENT MARKET			ASSEMBLY	TOTAL
	Wear and Tear		Accidents	MARKET	DEMAND
	Frequency	No of Parts	Replacements	UNITS	UNITS
1. Radiators	0	0	13,000	20,000	33,000
2. Radiator hoses (set)	0	0	13,000	20,000	33,000
3. Cooling fan	0	0	13,000	20,000	33,000
4. Water pump	0	0	-	20,000	20,000
5. Battery (2 year life)	0.5	178,000	6,500	20,000	204,500
6. Exhaust system (sets)	0.3	106,000	-	20,000	126,000
7. Plugs (cars,pick-ups Minibuses)	2	2,400,000	-	80,000	3,200,000
8. Contact Points	2	600,000	-	20,000	620,000
9. Distributor cap	0.25	76,000	-	20,000	960,000
10. Wiring Harnesses	0	0	0	20,000	20,000
11. Windscreens (front & rear)	0	0	13,000	40,000	53,000
12. Front & rear lights housing (set)	0.2	71,000	26,000	20,000	116,000
13. Soft trim and upholstery (sets)	0	0	0	20,000	20,000
14. Seat frames (buses, cars)	0	0	0	1,541,000	1,541,000
15. Hydraulic and scissor jacks	0.2	71,000	0	20,000	91,000
16. Shock Absorbers (4)	0.3	424,000	0	80,000	504,000
17. Speedometer cables	0.3	106,000	0	20,000	126,000
18. Handbrake cables (cars, pickups, mini buses)	0.2	66,000	0	17,000	83,000
19. Accelerator cables	0.2	66,000	0	17,000	83,000
20. Oil filters	3	1,068,000	0	20,000	1,088,000
21. Air filters	1	356,000	0	20,000	376,000
22. Leaf Springs (pick-ups,trucks,buses)	0.2	35,000	3,000	10,000	48,000
23. Shackle pins	0.5	280,000	0	40,000	320,000
24. U-Bolts	0.2	35,000	0	10,000	45,000
25. Engine Mounting	0.3	212,000	0	40,000	252,000
26. Rubber bushes (set)	2	712,000	6,000	20,000	738,000
27. Windscreen rubber moulding	0	0	0	40,000	40,000
28. Rims	0.2	71,000	13,000	120,000	204,000
29. Wheel drums	0.2	71,000	0	100,000	171,000
30. Flywheel	0	0	0	20,000	20,000
31. Master cylinder	0.1	35,000	0	20,000	55,000
32. Wheel cylinder	0.1	229,000	0	80,000	309,000

	REPLACEMENT MARKET			ASSEMBLY MARKET UNITS	TOTAL DEMAND UNITS
	Wear and Tear		Accidents Replacements		
	Frequency	No of Parts			
33. Clutch cylinder	0.1	35,000	0	20,000	55,000
34. Engine sleeves	0.2	142,000	0	0	142,000
35. Wheel disc hubs	0.1	10,000	0	3,000	13,000
36. Fuel tank	0	0	0	20,000	20,000
37. Oil pump	0	0	0	20,000	20,000
38. Rocker arm assembly cover	0	0	0	20,000	20,000
39. Rocker arms	0.1	284,000	0	160,000	444,000
40. Push rods	0.1	284,000	0	160,000	444,000
41. Hinges (average 3 doors)	0.1	106,000	13,000	60,000	179,000
42. Door winders (3 doors)	0.1	106,000	13,000	60,000	179,000
43. Front grills	0.3	106,000	26,000	20,000	152,000
44. Windscreen washer bottle	0.3	106,000	-	20,000	126,000



In the structure in fig 4 metal forming processes will supply metal parts to be bonded with rubber or plastic material as well as supply formed metal parts to the assemblers. Cast and forged parts will be finished by machining and then supplied to assemblers. Moulds and die makers will obtain raw materials from casting shops and support rubber moulding, metal forming and plastic moulding. The structure in fig. 4 is existing but requires modernisation and support in terms of policy environment.

Some automotive parts that can be considered for manufacturing under the subcontracting structure in fig. 4 are shown in Table 4.12.

TABLE 4.12: SELECTED PRODUCTS FOR FLEXIBLE MANUFACTURING

PLASTIC INJECTION MOULDED PRODUCTS	BLOW MOULDED PLASTIC PRODUCTS	RUBBER MOULDED PRODUCTS
-distributor cap -fuse boxes -cut-out boxes -grills -oil cap -radiator fan rear lights assembly -door openers -internal lights housing -dash board -side mirror housing -side mouldings -steering wheel	-master reserve bottle -clutch reserve bottle -fuel filter -windscreen washer radiator reserve tank ASSEMBLING PROCESS -accelerator cables -handbrake cables -clutch cables speedometer cables	-radiator hoses -engine mounting -steering coupling rubber heating system hoses -pedals -steering bushes -leaf spring bushes -stabilizer bushes -drive shaft boots -bumper rubbers -seals -windscreen rubber moulding
ELECTRO MECHANICAL PROCESS -contact points -cut-out relays -lighting relays indicator relays		DIE CASTING PROCESS -carburator -oil pump -side mirror housing -door openers door locks

TABLE 4.12 (CONTINUED)

METAL FORMING PROCESS	CASTING, TEMPERING MACHINING PROCESS	CASTING FORGED TEMPERED AND MACHINING PROCESS
-radiators pedal levers -air cleaning element housing -booster housing bonnet brackets (hinges) -bonnet -oil sump -chassis cross members -door winders -hinges -door locks -seat frames -rims -timing chain housing -boot door -boot brackets -oil filter cartridges -rocker arm assembly cover -chassis -fuel tank -brackets for shock absorbers -brake shoes -springs	-master cylinder -wheel cylinder -clutch cylinder -wheel drums -steering box housing -flywheel bell housing -fly wheel -gear box housing -engine block -cylinder head -engine sleeves -water pump -stub axles -wheel disc hubs -differential housing cover	-crankshaft -connecting rods -valves -camrod bearing housing -main bearing housing -cam shaft -drive shafts -half shafts -steering shaft -stabilizer bars -tie bars -tie rods steering arm -king pin -rocker arms -universal joints -push rods -gears

5.6 SUMMARY OF FINDINGS AND CONCLUSIONS

Under the past and current distribution structure of automotive spare parts it is impossible to estimate the specific consumption from import data and equally difficult from the dealers and spares shops. Rough estimates could only be computed from motor vehicle population.

The motor vehicle population has been obtained from licencing statistics and registration data, which has been analysed together with data from the sales of locally assembled vehicles, compiled by Kenya Motor Industry (KMI) and dealers. From the analysis the motor vehicle market share structure by type has been obtained.

The motor vehicle population by type has been obtained and projections for the next five years obtained, using past growth rates.

The demand for spare parts has been estimated from motor vehicle population structure, accidents records and replacement patterns.

Flexible manufacturing could be developed through manufacturing process specialisation in the key areas of:

- metal forming
- plastic moulding
- rubber moulding
- casting and forging
- machining
- dies and moulds making

The manufacturing process specialisation forms a subcontracting structure which is reliable and efficient. In order to strengthen the reality of this approach several automotive parts have been selected and classified according to the key manufacturing processes.

This kind of subcontracting exists in Kenya but it is handicapped by:

- low level of specialisation
- outdated technologies
- improper policy environment.

APPENDICES

1. Questionnaire
2. Legal Notices
3. Component Manufacturers
4. Main Franchise Holders
5. Sales for locally assembled vehicles
6. Vehicle sales for 12 selected models (1974-1978)
7. Moulds die manufacturers
8. Casting facilities and service workshops

QUESTIONAIRE

DATED.....

UNIDO PROJECT - MOTOR VEHICLE ASSEMBLERS

NAME AND ADDRESS: .....

.....

.....

BRANDS OF VEHICLES ASSEMBLED

	BRANDS	ENGINE CAP.cc	POWER		QUANTIES ASSEMBLED				ASSEMBLY COST
			PETROL	DIESEL	1989	1990	1991	1992	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									

LOCALLY MANUFACTURED COMPONENTS/PARTS

COMPONENTS/ PART	VEHICLE BRAND	SUPPLIER	PRICE	QUANTITIES SUPPLIED				MAIN MATERIAL
				1989	1990	1991	1992	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								

S=Steel, C=Cast Iron B=Brass+Bronze, R=Rubber, P=Plastic, O=Others

COMPONENTS/PARTS WITH POTENTIAL FOR LOCAL MANUFACTURING

COMPONENT/PART	VEHICLE BRAND	PRICE	ESTIMATED DEMAND	MATERIAL
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

QUALITY CONTROL

Standards: .....

Quarantees: .....

Franchises: .....

ASSEMBLY LINE: Average Capacity: .....

Equipment:

(a) (f)

(b) (g)

(c) (h)

(d) (i)

(e) (j)

Internally Manufactured Components/Parts

(a) (f)

(b) (g)

(c) (h)

(d) (i)

(e) (j)

PROBLEMS: .....

.....

FUTURE PLANS:

New Models: .....

Manufacturing Contracts:.....

Others: .....

.....

QUESTIONNAIRE DATE: .....

UNIDO PROJECT : MOTOR VEHICLE DEALERS

COMPANY NAME : ----------

ADDRESS : ----------

Vehicles Sold

MAKE	MODEL	ENGINE		ORIGIN		UNITS SOLD			
		CAPACITY CC	POWER	LOCAL	IMPORT	1989	1990	1991	1992
1)									
2)									
3)									
4)									
5)									
6)									
7)									
8)									
9)									
10)									
11)									
12)									
13)									
14)									
15)									
16)									

ORIGIN : LA: for Locally Assembled
I: for imported

QUESTIONNAIRE

DATE: .....

UNIDO PROJECT : SPARE PARTS DEALERS

POPULAR MODEL .....

PART/COMPONENT	LOCAL SUPPLIER	PRICE KSH	MAIN MATERIAL	UNITS PURCHASED 1991	1992
ENGINE					
Crankshaft					
Cylinder head					
Sleeves					
Piston					
Sump					
Block					
Seals					
Gasket kit					
Oil filter					
GEAR BOX					
Gearbox housing					
Clutch Plate					
Pressure Plate					
FINAL DRIVE					
Differential housing					
Seals					
SUSPENSION SYSTEM					
Spring					
Clamps					
Spring bushes					
Stabilizer					
U-bolts					
Shock Absorbers					
Kits					

.../.

PART/COMPONENT	LOCAL SUPPLIER	PRICE KSH	MAIN MATERIAL	UNITS PURCHASED 1991	1992
FUEL SYSTEM					
Fuel Tank					
Pump					
Carburator					
Nozzles					
Air Cleaner					
STEERING SYSTEM					
Hand Wheel					
Steering box/rack					
Tie rods					
Ball Joints					
Bushes					
Kits					
BRAKING SYSTEM					
Drums					
Hub					
Shoes/Pads					
Master Cylinder					
Wheel Cylinder					
Wheel Cylinder Kit					
Buaster					
COOLING SYSTEM					
Radiator					
Fan					
Water Pump					
Hoses					
ELECTRICAL SYSTEM					
Indicator bulbs					
Head light bulbs					
Alternator					
Startors					
IGNITION SYSTEM					
Spark Plugs					
Points					
Coils					

APPENDIX 1(d)

QUESTIONAIRE

DATE: .....

UNIDO PROJECT - MOTOR VEHICLE COMPONENTS/PARTS MANUFACTURERS

NAME AND ADDRESS .....

.....

.....

COMPONENTS/PARTS MANUFACTURED

	COMPONENTS/PART	VEHICLE BRAND	CUSTOMER	PRICE	QUANTITIES PRODUCED				MAIN MATERIAL
					1989	1990	1991	1992	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

PRODUCTION

	RAW MATERIAL	LOCAL MATERIALS			IMPORTED MATERIALS		
		SUPPLIER	QUANT.	PRICE	ORIGIN	QUANT.	L. COST
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							

MACHINERY AND EQUIPMENT	CAPACITY
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

FLEXIBILITY

Products on the same line:

(a)	(f)
(b)	(g)
(c)	(h)
(d)	(i)
(e)	(j)

Can the Production Line be easily modified to manufacture othe products?

.....

.....

.....

QUALITY CONTROL:

Standard Observed: .....

.....

Franchises held: (a) .....

(b) .....

(c) .....

Guarantees: .....

.....

Sub-Contractors/Collaborators:

(a)

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

Future Plans: .....

.....

.....

.....

PROBLEMS:

.....

.....

.....

.....

APPENDIX 2 (i)

RESTRICTED ITEMS UNDER LEGAL NOTICES

A. LEGAL NOTICE NO. 22 OF 1980

1. Oils
2. Greases
3. Fuels
4. Hydraulic fluids
5. Sealers
6. Adhesives
7. Batteries
8. Tyres
9. Tubes
10. Paint
11. Toughened flat glass
12. Canvas hoods, covers and screens
13. Soft trim and upholstery
14. Sound deadning material
15. Radiators
16. Exhaust
17. Leaf springs
18. Spare wheel carriers
19. Seat frames
20. Wiring harness
21. Brake linings

B. LEGAL NOTICE NO. 124 OF 1986

1. U bolt nuts and U bolts
2. Disk brake pads
3. Hydraulic dampers/shock absorbers
4. Premixed metal, pre-treatment chemicals
5. Windscreen, side and rear glass
6. Radio and cassettee players
7. Hydraulic jacks
8. Spark plugs.

APPENDIX 2 (ii)

C. LEGAL NOTICE NO. 245 OF 1991

1. Disc pad backing plate
2. Battery cables
3. Scissor jacks
4. Speedometer cables
5. Engine air filters
6. Shackle pins for leaf springs
7. Safety belts
8. Tool kits.

AUTOMOTIVE PARTS MANUFACTURERS AND FACILITIES:

APPENDIX 3(a): RUBBER PRODUCTS MANUFACTURERS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Car & General (K) Ltd PO Box 20001 NAIROBI	Tyre retreads, radiator hoses, bushes, mountings window frame rubber, precured retreads and all types of rubber products.	Both synthetic and natural rubber is imported. Milling and blending is carried out to achieve the required qualities. The capacity for retreaded tyres is 5000 units per month. Retread moulds are imported. Radiator hoses are manufactured for replacement market. The production is flexible and supported by testing laboratory.
2.	Plastic and Rubber Industries Ltd PO Box 46957 NAIROBI	Plastic and rubber products, including window frame rubber.	The production is highly flexible. Products manufactured according to customer specifications and the moulds supplied.
3.	Umoja Rubber Industries Ltd PO Box 87398 MOMBASA	Bushes, Car mats and all rubber products.	Bushes are the main products. The company has 4 presses: 20"x20"x400 psi. Plans to setting up new plant with Chinese collaboration are at advanced stage. 16 new rubber presses will be installed.
4.	Avon Rubber Co. Ltd PO Box 18270 NAIROBI	Tyre retreads, bushes, mountings and nearly all rubber products.	The production is flexible according to customers specification. The manufacture of moulds is sub-contracted.
5.	Firestone (K) Ltd PO Box 30429 NAIROBI	Tyres, tubes nearly all sizes.	The flexibility of the plant depends on the availability of moulds. The moulds are imported.
6.	Vacu-Lug Traction Tyres Co Ltd PO Box 45041 NAIROBI	Tyre retreads, bushes,mountings and various rubber products.	Retreading moulds are imported. Mould manufacturing is sub-contracted.

APPENDIX 3(b): PLASTIC PARTS MANUFACTURING FACILITIES

	MANUFACTURER	PRODUCTS	REMARKS
1.	MAC Plastics Ltd PO Box 18170 NAIROBI	Battery casings, battery plugs, etc.	Product diversification and flexibility depend on the availability of moulds and order quantities.
2.	Plastic Products (K) Ltd PO Box 78039 NAIROBI	Battery plugs, etc.	Mould manufacturing is sub-contracted locally.
3.	Polyman Ltd PO Box MOMBASA	Injection and blow mouldings products	The company has injection capacity of [illegible] cm. The blow moulding capacity of 1.2 Kg. Other products that can be manufactured are: windscreen water containers, radiator water reservoirs.
4.	Coast Plastics Ltd MOMBASA	Blow and injection moulding products	The injection capacity is 2 Kg and blow moulding of 10 Kg. The plant has the capacity to manufacture all the automotive plastic parts, including bumpers, grills, rear light housing.
5.	Polythene Industries Ltd PO Box 17931 NAIROBI	Blow and injection moulding products	The plant has adequate capacity to manufacture automotive plastic parts. Moulds are imported and others (simpler) sub-contracted locally.
6.	ACME Containers Ltd PO Box 11092 NAIROBI	Large scale blow and injection moulding products	Depending on the economies of scale the company can manufacture all the automotive parts.

APPENDIX 3(c): GLASS MANUFACTURERS

	MANUFACTURER	PRODUCT	REMARKS
1.	Triplex Glass Industries Ltd PO Box 13003 NAIROBI	Laminated and toughened glass for windscreen, side doors and rear.	The quality is despite. The products have been accepted by the assembly and the replacement market.
2.	Pan African Glass Industries PO Box 13003 NAIROBI	Laminated and toughened Glass for windscreen, side doors and rear.	The manufacturing quality is adequate.

APPENDIX 3(d): BRAKE LINING AND PADS MANUFACTURERS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Car & General (K) Ltd PO Box 18136 NAIROBI	Ferodo brake pads and lining	The manufacturing is under the franchise of UK Ferodo. The production is a pressure moulding process. Product flexibility is achieved by internal manufacture of moulds. Backing plates for pads are sub-contracted.
2.	Varsani Brake Linings Ltd PO Box 69737 NAIROBI	Brake pads and Lining	Pads backing plate are sub-contracted locally.
3.	E.R. Shaw Ltd PO Box 43617 NAIROBI	Brake pads and Lining.	In this process the linings are glued to the shoes instead of riveting. The products are manufactured under the franchise of Crossland of UK. The plant has shut down due to economic hardships.

APPENDIX 3(e): GASKET AND SEALS MANUFACTURERS

	MANUFACTURER	PRODUCT	REMARKS
1.	Car & General (K) Ltd PO Box 18126 NAIROBI	Payen Gaskets for all car models	Manufacturing is under the franchise of Payen of UK. Monthly turnover is over KShs.2 million. Gasket sheets are imported and the production process is mainly cutting and punching holes. The sales are targeted at the replacement market. The production is highly flexible.
2.	Associated Gasket Manufacturers Ltd PO Box 60056 NAIROBI	Gaskets for all car models	Raw materials in form of sheets are imported. Production process is mainly trading, cutting, punching, metal lining and packing. This production is flexible using Conventional Equipment. As a result of high number of models in the country, the company keeps high stocks of Gaskets for the replacement market.

APPENDIX 3(f): MANUFACTURERS OF AUTOMOTIVE FILTERS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Unifilters (K) Ltd PO Box 78637 NAIROBI	Air filters, fuel filters, oil filters	Production is for replacement market. Installed capacity is 20,000 units per month. Paper and cartridges (metal casings) are imported. Rubber seals are made internally as well as the moulds. Except for the metal casing, flexibility to car models is good.
2.	Power Filters Ltd PO Box 78001 NAIROBI	Air filters, fuel filters, oil filters	The company is relatively small. Imports paper and sub-contracts mould and die making.
3.	Motor World Spares PO Box 17214 NAIROBI	Air filters, fuel filters, oil filters	Imports paper and cartridges. Sub-contracts mould making and die making. Rubber seals are manufactured internally
4.	Auto Filters Ltd PO Box 43617 NAIROBI	Air filter, fuel filters and oil filters	The manufacturing is done under the franchise of Crossland Filters of UK. The plant is owned by D.T. Dobie (K) Ltd. Manufacturing has stopped due to the bad economic situation in the country.

APPENDIX 3(a): RADIATOR MANUFACTURERS

	MANUFACTURER	PRODUCTS	REMARKS
	City Radiators Ltd PO Box 75010 NAIROBI	Radiators, cores and Radiator servicing	The company has the installed capacity of 12,000 radiators per month. The radiators are distributed to vehicle dealers and the replacement market. Currently 20 types of radiators for most popular models are being manufactured. The company is capable of developing new radiators at a short notice so long as the minimum order quantity of 1,000 units is realised. Copper rolls are imported.
2.	Burns & Blane Engineering Ltd PO Box 45010 NAIROBI	Radiators, cores Radiator servicing and truck bodies, trailers	The radiators are supplied to Motor Mart Group of Companies. Development of new models is dictated by the order quantities. Part of tooling is sub-contracted to the local workshops.
3.	Sagoo Radiators Ltd PO Box 40371 NAIROBI	Radiators, cores radiator servicing	Some of the radiators are distributed to the dealers and rest to the replacement market. Unlike the other manufacturers, the manufacturing of dies are sub-contracted to the local workshops.

APPENDIX 3(b): MANUFACTURERS OF SHOCK ABSORBERS & JACKS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Hill Products (E) Ltd PO Box 78113 NAIROBI	Various types of shock absorbers	Manufacturing is under the franchise of Monroe of Europe with installed capacity of 200 shock absorbers per day. Currently 500 types of shock absorber can be manufactured, representing 80% of the models in Kenya. About 75% of the raw materials (piston rod, valves, tubes, piston, springs,etc) are imported. The consumers of the product are the dealers and the replacement market. Development of a new shock absorber takes one week. However, shock absorbers for modern cars are too complex, with high investments in tooling.
2.	Burton Metal Engineers PO Box 74074 NAIROBI	Hydraulic Jacks, seat frames and spare wheel carriers.	The products are distributed to both replacement market and assembly plants.
3.	Pipe Manufacturers (K) Ltd PO Box 72240 NAIROBI	Brake Pipes, adapters, fuel pipes and accessories, hydraulic pipes	Electroplated pipes are imported, the diameters ranging from 3mm to 30mm. About 90 sizes are manufactured. The annual consumption per size is 300 metres. Production is supported by fully automatic turret lathes. Electroplating is sub-contracted.

APPENDIX 3(i): MANUFACTURERS OF LEAF SPRINGS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Auto Spring Manufacturers Ltd PO Box 53677 NAIROBI (Factory at Athi River)	Leaf springs, U-bolts, centre bolts, eye-bushes shackle pins, brake pads, backing plates.	This is a complete leafspring manufacturing plant with a capacity of 200 tons per month. The plant includes hot forming machinery, heat treatment plants and quality control equipment. Spring steel is imported. The products are distributed to assembly plants and the replacement market.
2.	Auto Ancillaries Ltd PO Box 58055 NAIROBI	Leaf Sprints, U-bolts, centre bolts, eye-bushes shackle pins	This is also a complete leafspring manufacturing plant with a capacity of 90 tons per month. The products are mainly distributed to the replacement market.
3.	Kens Metal Industries PO Box 18583 NAIROBI	Eye-bushes	The products are for the replacement market.

APPENDIX 3(j): BODY BUILDERS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Manak Body Builders PO Box 43912 NAIROBI	Bodies for buses and trucks	They are specialists in bus bodies. Electroplating work is sub-contracted.
2.	Choda Fabricators Ltd PO Box 18868 NAIROBI	Bodies of buses and trucks	Specialists in bus bodies.
3.	Three H Body Builders Ltd PO Box 61439 NAIROBI	Coaches, minibus bodies, enclosed cargo bodies	They are specialists in luxury mini-bus bodies.
4.	Labh Singh Harnam Singh Ltd PO Box 45569 NAIROBI	Bodies for buses and trucks, commercial vehicles	Specialists in bus coaches.
5.	Autospring Manufacturers Ltd PO Box 53677 NAIROBI	Pick-up bodies, seat frames	They have planned the manufacture of Pick-up body parts to be supplied to the assemblers. The installed equipment to this manufacturing are: - vertical CNC milling centre - CNC bending machine - 500 ton press - 300 ton press - seam welder This investment was based on rationalisation of the pick-up model.

APPENDIX 3(k): EXHAUST MANUFACTURERS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Mann Manufacturing Co Ltd PO Box 18193 NAIROBI	Exhaust systems for all vehicles	The products are distributed to the assembly plants as well as the replacement market. Conventional forming machines are used for production, supported by Jig. For new car models, the overseas exhaust system is copied. The installed capacity is 1000 pieces per month. All materials are obtained locally.
2.	Silent Flow Ex-haust Manufacturers PO Box 41360 NAIROBI	Exhaust systems for all vehicles	Conventional forming machines are employed supported by Jigs.
3.	E.A. Motor Industries Ltd PO Box 81004 MOMBASA	Exhaust systems for all vehicles and Wiring Harness	The company has installed capacity of 2000 pieces per month, about 60% going to assembly plants. Production utilises conventional machines, mainly forming, rolling, seaming, punching and Mig welding. Production of Wiring Harness has stopped due to competition.

APPENDIX 3(1): MANUFACTURERS OF SOFT TRIM AND UPHOLSTERY

	MANUFACTURER	PRODUCTS	REMARKS
1.	Mogh Cushion Industries Ltd PO Box 19523 NAIROBI	Interior soft trim and upholstery, moulded carpets and seat frames	Production involves casting and moulding of imported materials. The moulds are manufactured internally. The seat frames are manufactured by forming and fabrication method. The consumers are the motor vehicle dealers and few quantities to the replacement market.
2.	[illegible] (K) Ltd PO Box 47623 NAIROBI	Motor vehicle seats and interior soft trim	The consumers are motor vehicle assemblers/dealers.

APPENDIX 3(m): MANUFACTURERS OF ELECTRICAL EQUIPMENT & CABLES

	MANUFACTURER	PRODUCTS	REMARKS
1.	Associated Battery Manufacturers Ltd	Automotive Batteries for all models	The company holds franchise for Exide, Bosc, Lucas, Oldam, Dagenite and Unpower. The plant has the installed capacity of 200,000 batteries per annum representing 70% of the market share. The company has a rubber milling plant for moulding rubber casings. Plastic casings are sub-contracted.
2.	Thomas White Batteries Ltd PO Box 42707 NAIROBI	Automotive Batteries	This is a small manufacturer. The products are manufactured for the replacement market.
3.	Added Performance (K) Ltd PO Box 61327 NAIROBI	Automotive Batteries.	The products are manufactured for the replacement market.
4.	East African Cables Ltd PO Box 18273 NAIROBI	Insulated electric cables of various sizes and colours, connectors	Supplies the raw materials to manufacturers of wiring harness.
5.	Car & General (K) Ltd PO Box 18126 NAIROBI	Champion spark plugs	They are manufactured under the franchise of Champion UK. It is essentially an assembling plant with very little value added.
6.	Autospring Manufacturers Ltd PO Box 53677 NAIROBI (Factory in Athi River)	Wiring Harness for all locally assembled vehicles.	The harnesses are assembled in well designed wiring boards (Jigs), supported by quality control testing section. There is no replacement market for the wiring harnesses.

APPENDIX 4

MAIN FRANCHISE HOLDERS

Franchise Holder	Commercial Vehicle	Passenger Cars
General Motors (K) Ltd.	1 tonne pick-up 1 mini bus 1 bus 2 trucks	Tropper Opel
CMC (K) Ltd.	1 Land Rover 1 DAF bus 1 DAF truck 2 Nissan truck & bus 1 Volkswagen Kombi	1 Suzuki 1 Pajero
Hughes Ltd.	1 tonne pick-up ¾ tonne pick-up 1 truck	1 Mazda -saloon -station wagon
D. T. Dobie (K) Ltd.	Nissan minibus 1 tonne pick-up 2 mercedes trucks ½ tonne pick-up Nissan cab	1 Nissan Sunny -saloon -station wagon
Simba Colt	1 Canter 1 tonne pick-up	Mitsubishi
Ryce Motors		Rock 4WD
Kenya Motors	Fiat Iveco DAF Bw	
Ecta (K) Ltd.		Subaru
Bruce Trucks & Equipment	Mitsubishi Trucks & Buses	
Taifa Motor	Hino Truck	Niva UNO
Marshalls (EA) Ltd.	1 tonne pick-up Volvo truck	Peugeot 205,504, 505, 405
Toyota (K) Ltd.	Land Cruiser 1 tonne Pick-up Hiace Mini bus 3 tonne truck	Corolla

APPENDIX 5(i)

LOCAL VEHICLE SALES

A. BY TYPES

	UNITS SOLD			MARKET SHARE (%)		
TYPE:	1990	1991	1992	1990	1991	1992
Passenger Cars	3719	2802	2743	27	30	33
Pick-ups	4586	2945	2328	34	31	28
Light Trucks	1130	1363	1044	8	14	12
4WD Estates	1364	856	688	10	9	12
Minibuses	894	559	601	7	6	7
Other buses	472	377	484	3	4	6
Heavy trucks	1417	561	477	10	6	6
Total	13582	9463	8365	100	100	100

APPENDIX 5 (ii)

B. BY MAKE	UNITS SOLD			SHARE (%)		
	1990	1991	1992	1990	1991	1992
Nissan-Datsun	2511	1848	1767	18	20	21
Isuzu	2109	1582	1559	16	17	19
Toyota	2596	1273	1108	19	13	13
Mitsubishi	1558	1711	1052	11	18	13
Peugeot	1919	1085	955	14	11	11
Mazda	814	597	449	6	6	5
Suzuki	339	390	267	2	4	3
Daihatsu	223	213	222	2	2	3
Nissan UD	239	185	210	2	2	3
Opel	-	24	199	-	-	2
Land Rover	689	100	152	5	1	2
Honda	112	105	95	1	1	1
Subaru	106	90	89	1	1	1
Fiat Auto	125	67	60	1	1	1
Volkswagen	73	33	44	1	1	1
Leyland DAF	31	41	39	-	-	-
Tata	-	3	36	-	-	-
Hino	49	15	20	-	-	-
Mini-Moke	8	5	16	-	-	-
Fiat Iveco	22	26	11	-	-	-
Volvo	10	17	6	-	-	-
Niva	10	16	5	-	-	-
Bedford	-	5	2	-	-	-
Mercedes	39	32	65			
Total	13582	9463	8365	100	100	100

APPENDIX 5 (iii)

VEHICLE SALES BY SELECTED DEALERS

A. D. T. DOBIE & CO. (K) LTD.

MAKE	MODEL	ENGINE CAPACITY	PETROL (P) DIESEL (D)	UNITS SOLD 1989	1990	1991	1992
Nissan	½ ton	1171 cc	P	758	726	429	384
"	Saloon	1270 "	P	711	639	606	518
"	S/Wagon	1270 "	P	220	181	141	119
"	1 ton	1600 "	P	438	344	230	265
"	1 ton 4X4	2400 "	P	100	57	36	43
"	Minibus	2400 "	P	372	342	257	281
"	Minubus	2500 "	D	170	199	130	157
"	Cabstar	3489 "	D	40	23	19	-
Mercedes	1313	5675 "	D	19	19	30	2
"	Over 1.5 ton	11580 "	D	-	5	-	-
"	Prime Mover	11580 "	D	14	15	2	-
Total				2842	2550	1880	1769

B. C.M.C. MOTORS GROUP

Mazda	1.3 P/Up	-	27	72	103
"	1.5 Saloon S/Wagon	94	66	54	178
"	1.6 P/Up	70	61	67	100
"	2.2 P/UP	1	-	-	19
"	T4100	-	-	-	62
L/Rover	2.5 (4X4)	318	247	128	112
"	3.5 (4X4)	22	9	12	4
Mitsubishi	1.8 Minibus	53	33	10	19
"	2.6 Pajero	111	220	172	207
"	3.0 Rosa Bus	-	-	-	19
Suzuki	1.1 (4X4)	161	171	198	239
"	1.3 (4X4)	48	124	132	89
"	0.8	60	40	15	-
Nissan-D	Trucks	149	93	170	170
"	Buses	64	112	42	52
L/Land DAF	Trucks	25	31	25	16
"	Buses	86	36	18	25
V/Wagen	1.6	55	27	52	47
"	20.0 W/Bus	17	24	11	-
Minicab	0.8	-	11	8	11
Total		1334	1332	1186	1472

APPENDIX 5 (iv)

C. KENYA MOTORS

				1989	1990	1991	1992
Fiat	UNO 60	1116 "	P	104	94	-	-
"	UNO 60s	1108 "	P	-	-	64	56
Iveco	135.14	5861 "	D	1	-	2	5
"	135.17	5861 "	D	2	12	13	5
"	330.30	13798 "	D	1	2	-	2
Total				108	108	79	68

APPENDIX 6

VEHICLE SALES FOR 12 SELECTED MODELS (1974-1978)

MODEL	ANNUAL SALES				
	1974	1975	1976	1977	1978
Datsun	1999	2030	2120	2472	2287
Toyota	1634	1448	1968	2463	2098
Peugeot	2229	1593	1339	1891	2019
Land Rover	759	928	694	834	1292
Mazda	138	679	1047	1465	1159
Chevrolet			201	1441	1110
Isuzu				988	978
Colt	377	526	362	732	965
B.L.M.c	501	771	622	598	882
Bedford Vauxhall	621	425	419	513	857
Ford	793	901	530	635	688
Fiat	558	503	495	546	624
Others	___	1243	2049	2560	3727
Total	13201	12944	12136	17840	18686

APPENDIX 7: MOULDS AND DIE MAKERS

	MANUFACTURER	PRODUCTS	REMARKS
1.	Kenya Industrial Research Devp Institute PO Box 30650 NAIROBI	Moulds, Dies. Grinding services Tool sharpening	The workshop has modern tooling machines including numerical controlled vertical grinding machine, NC vertical drilling machine etc. The company has the capacity to manufacture all types of dies. It is a state corporation with low efficiency.
2.	Kenya Industrial Estates Ltd PO Box 72029 NAIROBI	Dies, grinding services, moulds	Although the machines are not modern the workshop has excellent skills in Die making.
3	Kenapen Industries Ltd PO Box 46707 NAIROBI	Injection moulding moulds	They are specialists in moulds for plastic injection. They have copy milling machines.
4.	Wali Mohamed Hamid Ltd PO Box 18760 NAIROBI	Die sinking, engraving	They are mould specialists and famous for engraving. They possess copy milling machine, spark erosion machines.
5.	Standard Engineering Works Industrial Area, NAIROBI	Moulds and dies	They manufacture injection moulds for most of the plastic companies in Nairobi.
6.	Batmose Technical Services (K) Ltd PO Box 57364 NAIROBI	Dies and Moulds	They are specialists in Die making.

APPENDIX 8: CASTING FACILITIES AND SERVICE WORKSHOP

	WORKSHOP	PRODUCT/SERVICE	REMARKS
1.	E.A. Foundry Works Ltd PO Box 48684 NAIROBI	Cast iron products, cast iron raw material casting of special steels: - EN8 - EN9 - EN14 - EN19 Stainless steel casting, non-ferrous casting die-casting plant. Machined spare parts: - Gears - Shafts - Bushes Machine tools: Centre lathes, shaping machines.	The cast iron foundry workshop has a capacity of two tons. The Induction furnace has a capacity of 800 kg. The manufacturing is supported by quality control laboratory. Most mould makers and Gear makers obtain their raw materials from this workshop. The basic raw material is scrap cast iron and steel obtained locally, while the alloying elements such as Manganese, Chrome, Silicon are imported.
2.	All Parts Casting Ltd PO Athi River NAIROBI	Engine sleeves, Wheel drums, Wheel discs. Special steel casting. Machined Parts.	This is a newly established workshop which has the perfected manufacture of engine sleeves which are also being exported to PTA countries. The Company has induction furnices capacity 500 Kg and a finishing machine shop.
3.	Kens Metal Industries Ltd PO Box 18583 NAIROBI	Cast iron raw materials and products, extruded brass and aluminium shafts and rods, Pressure die cast products. Machined parts.	The induction furnace, capacity 100 kg is mainly used for brass casting. The extrusion capacity is 02 inches. There are four die casting machines capacity half kg. The daily capacity is 2 tons per day. They have spark erosion machine and finishing machine shop.

4.	Kenya Railways Workshop PO Box 30121 NAIROBI	Machined parts for railway transport system, cast iron spare parts, steel alloy cast products.	This workshop is owned by a state corporation, Kenya Railways Corporation. It has a high capacity machine shop, cast iron foundry workshop (10 tons), induction furnace (2.5 tons), materials analysis laboratory, and forging shop with hammers and furnaces. The workshop has low utilisation capacity as common with state corporations.
5.	Dubai Engineering Works Ltd PO Box 40439 NAIROBI	Machined parts, Gearbox housing, pump housing	This is a high capacity workshop with conventional machines. They have casting facilities for cast iron, bronze, brass and aluminium.
6.	Hartz & Bell (1963) Ltd PO Box 40185 NAIROBI	Machined and fabricated parts, cast products including gearbox housing and pump housing.	The workshop has capacity for heavy duty lathe work. They are known for casting and machining of pump housings, gearbox housing, and general fabrication.
7.	African Marine & General Engineering Ltd PO Box 90462 NAIROBI	Machined parts, Reconditioning works, cast iron products	This is a heavy engineering workshop with capacities for handling and servicing of ships on dry dock. They also provide the following services to other customers: - balancing of turbo charges - metal locking - white metal filling for Journal Bearing - engine block reboring - crankshaft grinding They have casting facilities supported by highly skilled pattern shop.
8.	Bhogals Garage PO Box 294 NAKURU	- Crankshaft grinding - engine reboring - cylinder head grinding - honing services	The workshop is an agent for Massey Fergusson tractors, and Styer tractors. The workshop gives maintenance support services to the tractor population in Rift Valley.

9.	Rift Valley Engineering Works Ltd PO Box 306 NAKURU	Machined parts, -Crankshaft grinding -Engine reboring -Small cast products	The workshop has the best facilities in Nakuru. Included are: - Planning Machine - Six high capacity lathes - Slotting Machine - Crankshaft grinder - Reboring machines - Milling machines etc The workshop is geared towards maintenance support to tractor population in Rift Valley.
10.	Rafiki Engineering Works PO Box 1448 NAKURU	Machined parts, Engine reconditioning	Oriented to maintenance support to tractor population in Rift Valley.
11.	Eldoret Farm Machinery PO ELDORET	Trailers, Engine reconditioning	The workshop is well equipped for engine reconditioning operations such as crankshaft grinding, reboring, surface grinding.
12.	Kalsi Engineering Works PO Box 497 ELDORET	Machined Parts and Engine reconditioning	The workshop has conventional machine tools and engine reconditioning machines.
13.	Singh Engineering Works	Engine reconditioning services	The workshop has engine reconditioning machines.
14.	Best Engineering Works	Engine Reconditioning	The workshop has adequate machinery for engine reconditioning.
15.	Bridge Motors PO Box 209 KERICHO	Engine reconditioning	The workshop has machine tools for engine reconditioning.
16.	Duplex Engineering PO Box 179 KERICHO	Engine reconditioning	Equipped with engine reconditioning machinery.
17.	Kisumu Engineering Works PO BOX 229 KISUMU	Machined parts, engine reconditioning	Equipped with conventional machine tools and engine reconditioning machinery.

KMI

Kenya Vehicle Sales By Type 1991