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STEEL PRODUCTS MARKET DEMAND STUDY

DP/UGA/84/018

FINAL REPORT

KAMPALA - UGANDA

Based on the work of

Mr. Pál Narancsik, Metallurgical Engineer
and
dr. Péter Holczer, Industrial Economist

United Nations Industrial Development Organization

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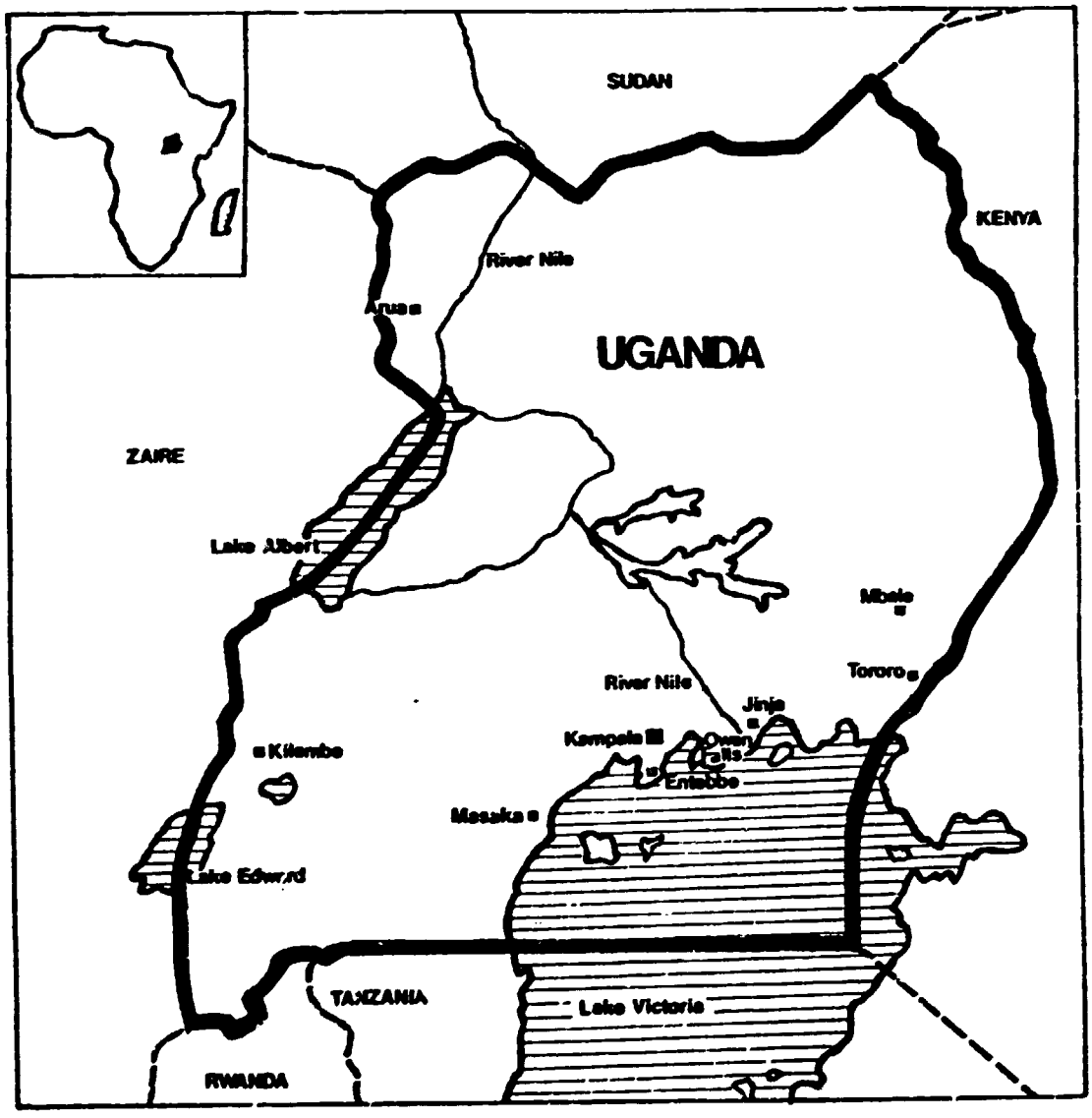


MAP OF UGANDA

ACKNOWLEDGEMENT

We are deeply grateful to the Ugandan counterparts, particularly to the Ministry of Industry and Technology, the Ministry of Commerce and the Ministry of Planning and Economic Development. We appreciate the support of all the representatives of the Ugandan enterprises and bodies visited.

We are also very thankful for the valuable contribution of all the officers, advisors and national co - unterparts of the United Nations Development Prog - ramme's Resident Representative's office in Kampala whose help enabled us to prepare the present study in a relatively short period.

1. SUMMARY

The present Steel Products Market Demand Study is carried out by TESCO Consulting Engineering Company - Budapest, Hungary based on the work of

Mr. Pál Narancsik, Metallurgical Engineer

and

dr. Péter Holczer, Industrial Economist

within the framework of UNIDO project No. DP/UGA/84/018 - Assistance to the Ministry of Industry and Technology - Iron and Steel Industry of the Republic of Uganda.

This Draft Final Report has been prepared in accordance with the Terms of Reference dated 25 November, 1986 for the preparation of a Steel Products Market Demand Study to the Government of the Republic of Uganda.

The duration of the field mission was 1,5 manmonths whilst 2,5 manmonths of work has been devoted to the home-work.

The purpose of the subject project was to prepare a market demand study for all finished steel products required in the country upto the year 2000.

The basic results, conclusions and recommendations are as follows :

- during the field mission pertinent data and personal experience was collected, which was elaborated and evaluated during the home - work

- the possibility exists for the future period for a gradual increase of steel consumption, demand and production, depending majorly on the stability of the overall macro - economic and socio - political development of the country

- the satisfaction of the local steel market demand till 2000 is impossible to foresee without a massive and diversified import of steel raw materials and products

- it is evident that the share of local production of steel and steel products will not surpass 40 - 50 % of the total local market

- the accumulated direct and indirect steel consumption will be increased upto 5 kg per capita in 2000 / co - unted with a population of 26 million / from the present level of less than 3 kg / these figures do not take into consideration the military steel consumtion/.

- to establish a well - balanced steel market in Uganda institutional reforms, managerial, financial and marketing capacities up-grading is needed, which firmly requires a " Plan of Action " of all government bodies concerned, whereto all major steel industrial enterprises should be associated.

The philosophy of the present study was to determine the market demand upto 2000 with distinction between the share, which can be satisfied with the present production capacities / with necessary rehabilitation / and the share, which cannot be satisfied from other than continuous imports.

In order to subsitude unnecessary and unwanted imports of semi - finished and/or finished steel products, the available foreign exchange should be directed towards those raw and auxiliary materials, which are suitable for ready - made goods with fabrication and manufacturing. This policy is to be up - dated on a regular basis in close connection with the starting - up of new production units. The rehabilitation programme of the Ugandan steel industry cannot be realized without a well - balanced import policy, which lays on the principle of selected production of those industrial products, which embody relatively high value, which are labour intensive and of which import raw material is steadily available and relatively cheap.

Eventhough the steel products market is far not satisfied in Uganda, due to several comparative advantages the export of certain articles, commodities - based on local production capacities and raw materials - must be considered in order to improve the terms of trade of the country.

2. INTRODUCTION

The development of iron and steel industry is a pre - requisite for the industrialization in a country. Being the least costly and readily available engineering material for construction and fabrication of equipment, machinery and plant, iron and steel are also used in various sizes and shapes in industrial construction, machine building, manufacturing, transportation, inf - rastructure, agriculture and other industries.

The iron and steel industry in Uganda is not well de - veloped due to various problems and contrains, but mainly to reliable pocessed steel raw materials base-and inadequate foreign exchange.

The country's facilities for the production of finished steel products are about 50,000 tons, including 30,000 tons of various merchant light and medium sections and 20,000 tons of galvanized sheets. Due to various reasons the actual production is under 10 % of the installed capacities.

During the field mission the East African Steel Corpo - ration was not in operation, therefore for the time being there is no indigenous steel production in Uganda. The rehabilitation and expansion of the steel works is of strategic importance to the country's Rehabilitation and Development Plan since it will provide a reliable source of steel products that would otherwise need to be imported / the production of this plant is to be 20,000 tons per annum by 1991 with the contribution

of the Italian government in a value of 12,8 million US dollars in the form of machinery, spares and accessories.

During the plant visit to the Casement Steel Rolling Co. Ltd. located in Jinja we have witnessed conside - rable performance in assembling the rolling mill with an installed capacity of 30,000 tons per annum utilizing the locally available, indigenous scrap. The putting into operation of this latter plant will contribute to the improvement of the agricultural hand tools supply of the country being one of the key problems in the recovery process.

The sources of iron and steel materials can be sorted as follows:

a/ Mining

For the time being three ore deposits are of interest for the iron and steel industry, namely : Muko in Kigezi District, Sukulu near Tororo and Kilembe near Kasese. Only Muko iron ore is rich and pure. The deposits have not been fully inves - tigated and the reserves are not proven. Taking into consideration the immense capital investment and infrastructure / road, energy, water, trans - portation, etc. / needed one can see no real chance to utilize the potential iron ore deposits upto the year 2000.

b/ Scrap

The collection of the generated steel scrap in the country is unorganized. There is scrap, may be not so much, but it is scattered and there is no organization, transport and equipment for its collection and preparation. Previous studies estimated the quantity of available iron and steel scrap some 300,000 tonnes. The detailed elaboration of a bankable feasibility study on the collection, preparation and recycling of the available steel scrap is the subject of another element of the subject UNIDO project to be implemented soon.

c/ Import

During the preparation of the study there was no steel mill in operation in the country, therefore the whole fabrication industry had to rely on imported raw material. Due to the prevailing shortage of foreign exchange the import of steel materials and products faced severe difficulties, which caused a very low - some 10-15 % of installed capacities utilization. Attributable to the civil war during the last few years the composition of the steel import has been changed substantially. Hopefully, two steel plants / East African Steel Corporation Ltd. and Casement / will be in operation early next year in the country, till that time the country must rely totally in import.

There are some pre-requisites and opportunities for expansion and development of the steel market, consumption, demand and production, simultaneously with the

growth of the overall economy and industrialization of the country. As the per capita steel consumption is a well- orienting figure it is important to mention that the direct steel consumption is under one kg, while the indirect plus the direct consumtion is under three kg for the time being.

In the study considerable emphasis is put on the fact that the growth of the engineering sector has a major impact for basic steel demand. That was the reason why visits were paid to almost all major steel manufacturing and steel construction industrial enterprises / for example UGMA, TULIPECO, LARCO, ROKO Construction etc. /.

When studying the available pertinent publications and statistics, it was found that reliable figures in a standard form were not available for the period 1983 - 1986, therefore in the study we had to rely on our data colected and experience gained.

It was found, that up to now the emphasis of the recovery programme has been on restoring the industrial structure existing before the military take-over, with little thinking on whether a restructuring of the industrial sector under different basis would better suit today's changed conditions in Uganda. In the Ugandan environment, however, a restructuring process cannot be decided nor carried out by administrative means. The market mechanism should provide the signals that ultimately determine the future shape of Uganda's industry, including steel industry.

3. JUSTIFICATION

In the economic life of all countries, the iron and steel industry plays an important role. Its smooth and continuous operation - based upon well selected development trends, available local raw materials and other facilities and realistic market trends and demand - is a pre-requisite to the overall economic growth and development of any country.

Uganda is in need for her own production of iron and steel but heavy problems and considerable difficul - ties are to be overcome, most of them connected with the financial support and technical assistance.

In the framework of UNIDO project No. DP/UGA/84/018 the government has requested industrial technical assistance in the field of development of the iron and steel industry.

Uganda has comperatively small indigenous steel market. In the recent years the local demand has increased and some projections have indicated its further continuous growth. In the East African region there are also no large manufacturing capacities and the steel demand and market are under-developed. There are existing conditions and pre - requisites in Uganda for further development of the iron and steel industry.

The national production of iron and steel in Uganda is required both at present as well as in the future. This phenomenon is reflected in the " Rehabilitation and Development Plan " of Uganda for the period 1987/88 - 1990/91 under code no. IT-01, title : The Steel Industry, published in March 1987.

It is evident that no realistic development plan of the iron and steel sector of the country is immaginable without a detailed market demand study based on real survey and estimation.

It is hoped that the present study can contribute to industrial policy - makers to elaborate a well - selected and diversified development plan.

4. BACKGROUND INFORMATION

Uganda is a landlocked equatorial country with a total area of 93,000 square miles / 248,000 square kilometres/ and with a population of 15,2 million. Uganda became an indipendent republic within the Commonwealth in 1962.

The 1960s was a period of rapid economic growth and rising incomes for Uganda, as the country successfully exploited its agricultural potential. During this period a number of industries were established by local and foreign industrialists encouraged by rising domestic demand and government support. The Government itself established several industries in the form of joint ventures or on its own, through the Uganda Development Corporation. By the end of the 1960s, the medium and large scale industrial sector / i.e. firms with 10 workers or more / including agro-industries, accounted for over 12 percent of monetary GDP and employed over 47,000 people, 17 percent of total monetary employment. The sector produced a wide range of consumer and intermediate goods for domestic consumption.

In 1970, the Government of Uganda had started expanding its participation in the industrial sector by acquiring controlling interests in a number of private enterprises. The taking over of the military regime was followed by a decade of administrative, social and economic deterioration. Industrial production during the military regime declined through a combination of mismanagement, equipment failures due to lack of technical personnel and maintenancen and scarcity of foreign exchange to import spare parts and raw materials.

By 1978 the industrial production was down to about half the 1971 level. By 1980 GNP per capita was US Dollar 263, less than half its 1970 level. In June 1981, the Government adopted a package of policy measures which led to a relatively strong recovery between 1981 and 1984, going from less than 15 percent of capacity utilization in 1981 to some 30 percent capacity utilization in 1984.

During the civil war the economic situation of the country was on the way of continuous deterioration. Due to this negative progress the industrial performance declined further; some of the companies closed down totally, while others were operating on a very low capacity utilization due to the lack of raw materials, energy, finance and security.

After restoring peace, the Government of Uganda has launched an economic recovery programme in which the industrial sector has been given to priority, only second to the agriculture sector. In this context, the existing iron and steel industry has been given considerable importance. However, the industry needs assistance to sustain the economic growth and partial self-reliance in iron and steel products used in engineering, construction and agriculture implements industry.

Uganda was producing and marketing around 50,000 M.T. of rolled merchant products and galvanized sheets prior to 1972, which amount has been reduced to around 3,000 M.T. in 1986.

The steel consumption and demand in Uganda is featured with a very low level and irregularity. The domestic steel market is too small and limited by volume and product - mix. Low effective demand is still an

important constrain for many industries in Uganda. The increase in purchasing - power generated by higher rural incomes, has not translated into higher demand for many urban - based industries, like steel industry. It is tipical of Uganda, however, that the problem is not so much the lack of effective demand, but low quality or a mismatch between what the consumers want and what the enterprises produce or what can be imported.

The Custom Department of the Ministry of Finance do not possesses a comprehensive, reliable data base since 1972, the ad-hoc statistics prepared during this period are of partial, sectoral interest, which spot-lights the actual need for an overall statistical system. Such a system is the basic pre-requisite of industrial and commercial decision - making towards the rehabilitation of the industry. Nowadaysthere are only ad-hoc statistical surveys in the country and even the customs authorities can only registre the flow of commodities afterwards, therefore the flow of raw materials and products cannot be identified to a great extend.

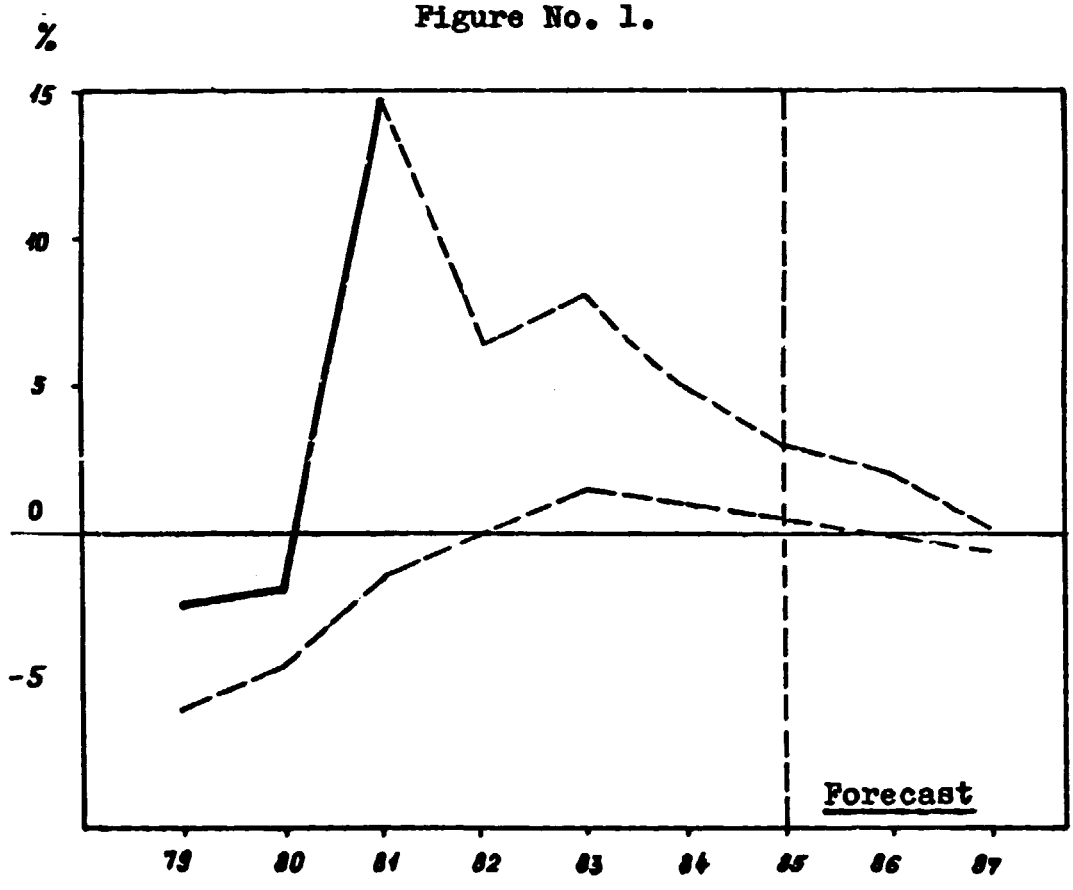
As to the expatriate capital investments and joint ventures, one can say that they are merely closed down or rather out of work. The reason of such situation is - according to representatives of such companies - the recession due to the civil war, the inflation and the monetary contrains in the country, first of all the shortage of foreign exchange. The decreased foreign exchange earnings cause themselves a very wide gap in the support of industrial rehabilitation.

In order to give a comprehensive picture on the above tendencies the trends of the GDP per capita and the MVA / Manufacturing Value Added / in the country for the recent decade are illustrated in Figure No.1,2 and 3.

Annual growth rates of GDP and MVA in Uganda

/ constant prices in 1975 dollars /

Figure No. 1.



Source: Industry and Development, Global Report 1986
UNIDO

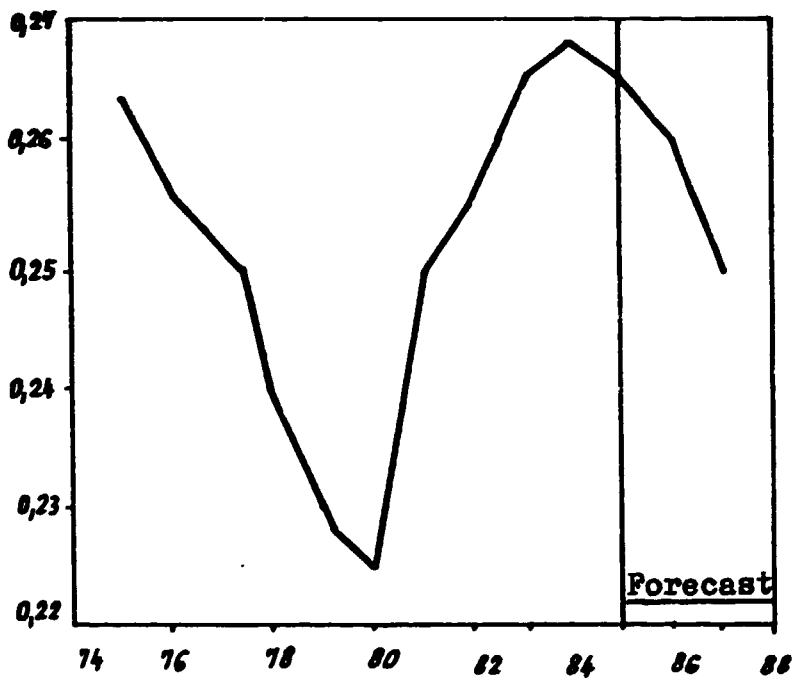
The above diagram shows clearly the tendency of GDP and MVA which is self - explanatory. From the present political situation in the country, the government's economic policy / for example the introduction of the new monetary system. / one may draw the conclusion that the country will brake the

present stale - mate and start to go on an upward tendency. This is reflected in the market forecast detailed in quantities and qualities in Chapter No. 6.4. upto 2000.

GDP per capita in Uganda

/ in 1,000 USD/c /

Figure No. 2.



Source: Industry and Development, Global Report 1986 UNIDO

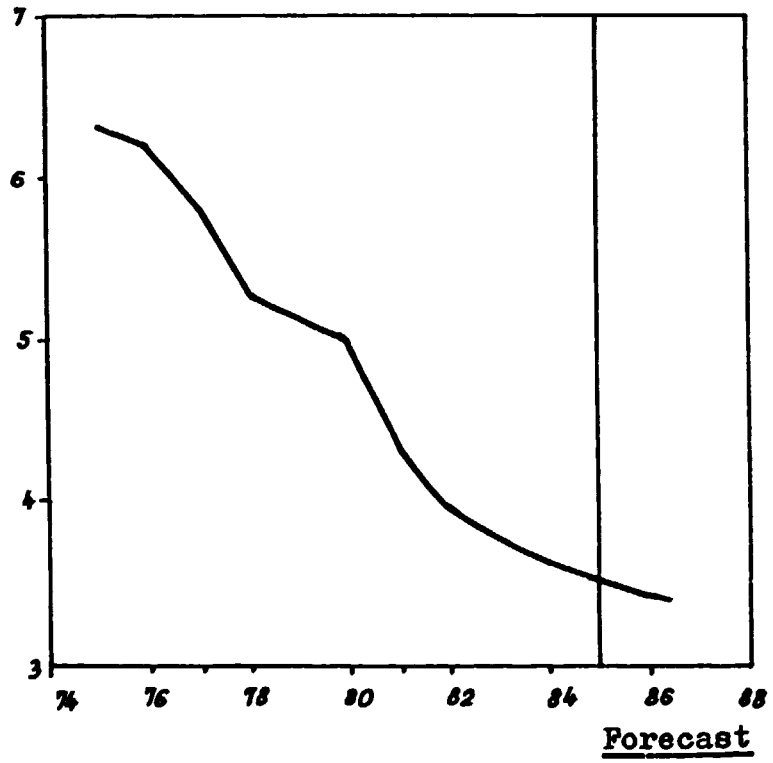
The actual political situation / civil war / deeply influenced the GDP per capita in the country. Between 1980 and 1984 an upward tendency can be witnessed which is followed by a rather negative trend which is

explained by the following diagram on the manufacturing share in the GDP.

Manufacturing share in GDP

/%/ / c

Figure No. 3.



Source: Industry and Development, Global Report 1986
UNIDO

The continuous lack of raw materials, electricity, management, skilled labour led to the deteriorating of the manufacturing share in the GDP, whereas the

steel industry followed the same tendency. The deterioration of the balance of payments and the continuous shortcoming of foreign exchange contributed to the downward tendency substantially.

It is worth mentioning that all the three diagrams are strongly influenced by the rapidly growing population which plays a dominating role in the market demand.

5. METHODOLOGY AND APPROACH TO THE MARKET SURVEY

When launching the project implementation all related documents, publications and statistics available and pertinent to the subject were thoroughfully studied. It was found that data and figures are either not available or not reliable due to the fact that they are based on rough estimations.

Therefore the way of project execution was basically through studying new materials published recently, discussions with the most significant iron and steel producers and manufacturers and joint work with the UNDP and Ugandan counterpart staff.

Due to the lack of reliable and up-to-date statistical data base it was considered imperative to obtain personal experience and impressions on the existing facilities. Talks were carried on with responsible persons and representatives of the government bodies and industrial enterprises collecting partly their verbal, partly their written information and experience. Plant visits were implemented paralelly to gain real picture and experience on the prevailing conditions.

Based upon the above mentioned three types of questionnaires were prepared in order to collect documentary evidence of the present situation and forecast the future market demand for iron and steel products.

The first questionnaire was prepared particularly to the Ministry of Industry and Technology to obtain an overall and comprehensive picture on the views of the Ministry. The second questionnaire was compiled to the

Kinstry of Commerce and Kinistry of Planning and Economic Development to approach the subject from the commercial and national planning points of views.

The third questionnaire was prepared for the individual iron and steel producers and manufacturers to get acquanted with their conditions, figures, problems, estimated production programme and future development and expansion plans.

The final suggestions and recommendations are based on the above mentioned experience and the detailed evaluation and appraisal of the questionnaires filled - in properly.

The figure in the study are based on the SI / metric / system and the international comparisons are explained in US Dollars.

In the tables and figures incorporated in the study the main commodity groups were selected upon the current industrial structure and main market factors. The main commodity groups represent a wide assortiment a detailed description of which was not subject of the study and which are determined partly by the manufacturing industry and the actual daily market demand. Theinternal fluctuation of the commodity groups are equalized on the long - run. Anyhow, the grouping i.e. selection of steel products is based on the real local experience and information gained from local counterpart experts and representatives of government bodies and industrial enterprises. We believe that the assortiment in the tables represent the real market demand for steel products in the country.

Based on UNIDO's suggestions, in the middle and at the end of the mission two round - table discussions were held, whereas the experts reported to the representa - tives of the Ugandan government bodies and UNDP on the job performed. The Aide Memoires were signed by the participants of the meetings which are attached to the study as Annex 1. and Annex 2.

UNIDO was also kept be informed on the job performed by sending an Interim Performance Report dated May 13th, 1987, which is attached to the study as Annex 3.

In order to present the sphere of government bodies and organs as well as industrial enterprises and introduce the representatives of these organizations the Work Programme is attached as Annex 4. whilst the list of People Met as Annex 5.

The questionnaires prepared, submitted, collected and evaluated are atteched as Annex 6.

6. MARKET SURVEY

6.1. The local iron and steel production basis

The identification and surveying of the indigenous potential market supply and import is a pre - requisite of the preparation of the market demand study. Principal attention was paid to the studying of the existing installed and/or unutilized iron and steel production capacities and facilities. To this pur - posea global analyses was prepared based on detailed discussions and collected questionnaires with regards to the present situation in this sector. Considerable attention was drawn to the assessment of the potential raw material resources and to the evaluation of the envisaged import trends.

In the course of the mission two metallurgical plants were found which may serve as the basis of the local steel - making and rolling, these plants are the followings:

- East African Steel Corporation Ltd.

  The EASC located in Jinja was not in operation because the rehabilitation of the plant is in process actually with the support of an Italian Goverment contribution. The present works comprise the rehabilitation of the electric steel melting shop with the connected rolling mill, with a planned installed capacity of 25,000 M.T. annually.

  The envisaged production programme would be as follows:

- round and square bars	- 60 % -	15,000 M.T.
- equal angles	- 20 % -	5,000 M.T.
- hoe bars, rods	- 10 % -	2,500 M.T.
- narrow flats	- 10 % -	2,500 M.T.

During the plant visit all the machinery and accessories were witnessed on the site and according to the expectations of the plant's management the rehabilitated plant will start the operation till the end of 1987. The plant is supposed to utilize basically indigenous scrap stock. The survey of the quantity and quality of this scrap basis is the subject of another element of the subject UNIDO project No. DP/UGA/84/018. As to the management, the company has in mind a long - term idea to become the basis of the sponge iron production in Uganda.

Till now the existing East African Steel Corporation Ltd. as a steel plant has never been utilizing its installed capacities totally due to the contrains typical to all industrial enterprises in Uganda. Problems in capacity utilization can be foreseen even for the future as well, as difficulties in regular supply of raw and auxiliary materials, lack of continuous energy supply and spare parts as well as the shortage of the skilled labour with high educational level and managerial skills can be eliminated only on the long run.

- Casement Steel Rolling Company Ltd.

The CSRC is a newly established plant still under construction. The installed rolling capacity will be 30,000 M.T. annually. The erection, commissioning and start - up operation of the plant is expected to be completed till the end of the present year.

The plant operation will be launched with a rolling capacity of 10,000 M.T. per annum totally based on imported raw material. Following this an electric steel melting shop with an arc furnace will be installed, which will be fed with the locally available so called regular scrap. The main profile of the plant will be the provision of the Casement steel products manufacturing companies and the neighbouring industrial enterprises with different sorts of rolled steel products, mainly bars.

Taking into account the overall economic potential of the country, Uganda can rely actually only on these two plants as indigenous rolled steel products supplier. This way the total expected, nominal steel rolling capacity of the country will not exceed

55,000 M.T. per year by 2000.

Concerning the iron ore deposits of Uganda all previous geological surveys and consequent studies agreed upon that in the areas of Muko in Kigezi District, Sukulu near Tororo and Kilembe near Kasese have substantial deposits. The deposit in Muko is rich and relatively pure whilst the others are mixed and contaminated.

As the exploitation of any of the above listed mines has not beenstarted yet, furthermore their surveys and investigations are far not complete including studies and relevant proposals, there are many preliminary actions required based on up - dated considerations.

Should all these studies and research activities show a positive result, the high capital investment, infrastructural requirements, huge skilled labour demand to opening the mine, make it unrealistic under the prevailing economic conditions to implement this project upto 2000.

Furthermore, the iron ore mines do not fit to metallurgical processing directly, therefore its pellettizing and/or sponge iron making have also very serious financial impacts. During the home work serious and thoroughful investigations and studies were made with the involvment if mining research and development institutions, because as to the Chief Technical Advisor the whole sponge iron mining, sponge iron processing technological line could be implemented for 20 million US Dollars. According to findings, results of the investigations, this line including a 30,000 M.T. sponge iron plant might be implemented for this amount, but the opening and operating the mines and the provision of electricity, water, drainage, sewage treatment, road network, transportation with special vehicles, management with experts, repair and maintenance, social infrastructure, environment protection, etc. would cause multiple investment costs / of course this list is just a rough one and it does not contain those connecting investments which are necessary from the national economic point of view /.

Therefore our position is maintained, i.e. the sponge iron, based on the above mentioned technological process will and may not be competitive due to the import requirements of the eventual investment as listed above.

To brake this stalemate joint - ventures could be considered either on bilateral basis or in the framework of P.T.A. on the long - run. Subsequently the development of the steel industry in Uganda cannot rely on indigenous iron ore deposits up to the year 2000.

As in all countries of the world, the importance of metal scrap recycling was revealed also in Uganda being an easily available and reliable source of metallurgical raw material, which is economic and contributes to environment protection. Being in aware of this fact, the Government of Uganda banned the export of metal scrap by law and this law is in force presently as well. Taking into account the potential, unutilized scrap stock of the neighbouring countries, it is advisable to consider their import to Uganda which may serve as a raw material basis partly to the Ugandan iron and steel industry on the long - run.

Based on the Feasibility Study Report: Metal Scrap Processing Plant - DP/UGA/84/018 prepared by Mr. P.R. Merh, iron and steel expert, the surveyed scrap quantity in Uganda comes as much as some 300,000 M.T. 60 % of which fit to the electric arc furnace steel making. This is only a potential raw material basis to the iron and steel industry, because neither the collection, nor the recycling process is in existence in Uganda now. Therefore it is of utmost importance to assure an up-to-date and professional preparation of the metal scrap to be collected.

Based on the above figures - provided that beyond the two metallurgical plants mentioned before no further capital investment will be done in the coming 13 years - one may state that the presently available and the regular scrap may feed these two metallurgical plants with raw material to an extent of appr. 80 %.

6.2. The iron and steel products import

The import content of Uganda's manufacturing sector is relatively low for African standards. This general statement does not concern two subsectors : metal and paper products, the import is more than two thirds of their inputs. One may say, that the recovery and growth of Uganda's industry depends to a large extent on the availability of some essential imported inputs including raw materials, spare parts, machinery and equipment, not produced in Uganda.

The available data does not suggest that the availability of competing imports had a negative effect on industrial production.

During the mission we have witnessed and experienced a general shortcoming of all the commodities including steel raw materials, semi - finished products and consumer goods. There is immense shortage even in the most important everydays' life goods, such as cutlery, domestic utensils, corrugated sheets for housing, etc.

Numerous metal products retail shops were also visited, their stock showed a very limited assortiment and their

quantity was on the minimum / this statement refers only to those shops, whichwere found open, shops were found open, shops are mostly closed or almost empty /.

For the time being and also upto 2000 the shortage of availability of imports will play a dominating role in the steel industry and steel products market in Uganda. This is caused basically by the negative balance of payments, i.e. shortage in foreign exchange earnings.

The iron and steel industry of Uganda - through its contribution to the GNP estimated to be some 3 - 4 % and the number of employees do not surpass some 40,000 - is of critical importance. As capacity under - utilization is found partly due to the lack or shortage of raw materials and semi - finished steel products, it would be very important to devise strategies for ensuring a reliable supply of imported steel raw materials, semi - finished and finished products.

The composition of the steel market incorporates also such groups of commodities which include partly or entirely iron and steel material. This is called generally as <u>indirect steel import</u>. The overall trends show that the imported goods have relatively high iron and steel content / vehicles, railways, domestic utensils, agricultural machineries, etc. / and this trend is on upward . Due to the economic conditions in Uganda the share of second - hand vehicles, machines etc. increases which fosters the need for spare parts and maintenance.

For the time being Uganda does not possess any basic hand - tool manufacturing basis. Such hand - tools, like hammers, plies, cutters, grips, etc. of very simple and universal character are the basic needs of any kind of repair and maintenance. The market demand for these steel products would be enormous.

As far as the country cannot establish her own hand-tool manufacturing basic industry, the introduction of some new technologies like investment casting technology has numerous advantages, such as:

- it can be based on the locally available, selected iron and steel scrap
- it requires relatively small capital investment
- it can be adjusted to existing steel manufacturing company
- it requires relatively low infrastructure
- its production programme is very flexible
- its accuracy is so high that there is almost no need for machining, first of all for surface grinding.

This technology could be easily introduced in UGMA.

Taking into consideration the above described needs, requirements, facilities and shortcomings, the need for steel import by 2000 is estimated to be 67.000 M.T.

The estimated direct and indirect market demand for import steel products in Uganda is described in details in Tables No. 2 and 4. in Chapter No. 6.3.

6.3. The present market demand

Upon the arrival of the team to the field the working programme was established with the CTA and the national counterpart experts. Based upon the instructions and the advise of the representatives of the Ministry of Industry and Technology and the suggestions made by the Resident Representative of UNDP, visits were paid to numerous government bodies and industrial enterprises. These companies cover some 80 % of the iron and steel consumption of the country, located in Kampala, Jinja, Lugazi and Entebbe / see Annex No. 4. /. Other companies located in other districts of the country were not visited due to the prevailing security situation and their being not in operation.

As described in Chapter No. 6.1. the two steel mills will be in operation not sooner than 1988, therefore their raw and auxiliary materials demand will be outlined in Chapter No. 6.4. In order to assess the present market demand, the steel products had to be sorted in two typical groups, such as direct and indirect steel products / this grouping is based on S.I.T.C. /.

The country imports steel as raw materialas well as semi - finished and finished products, for example locomotives, vehicles, domestic utensils, etc. Therefore the tables had to be splitted in two further sub - groups reflecting the origin of the steel products / indigenous or import /.the market demand is focused on.

In order to gain an overall, comprehensive picture on the present market demand, four tables are prepared and incorporated in the study as follows:

- Table No. 1. Estimated direct market demand for indigenous steel products in Uganda 1983 - 1987
- Table No. 2. Estimated direct market demand for import steel products in Uganda 1983 - 1987
- Table No. 3. Estimated indirect market demand for indigenous steel products in Uganda 1983 - 1987
- Table No. 4. Estimated indirect market demand for import steel products in Uganda 1983 - 1987

When preparing the tables the estimated growth of the population as indicated in UNIDO/IS/344 was taken into account. The data and figures received after the mission from the Customs and Excise Department of the Ministry of Finance of Uganda were taken in deep consideration but corrections were made upon the recent information collected during the mission.

In order to demonstrate visually the basic and characteristic tendencies, the figures of the four tables are illustrated on diagrams in Figures No. 4 and 5.

ESTIMATED DIRECT MARKET DEMAND FOR INDIGENOUS AND IMPORT STEEL PRODUCTS IN UGANDA

1983 - 1987

Figure No. 4.

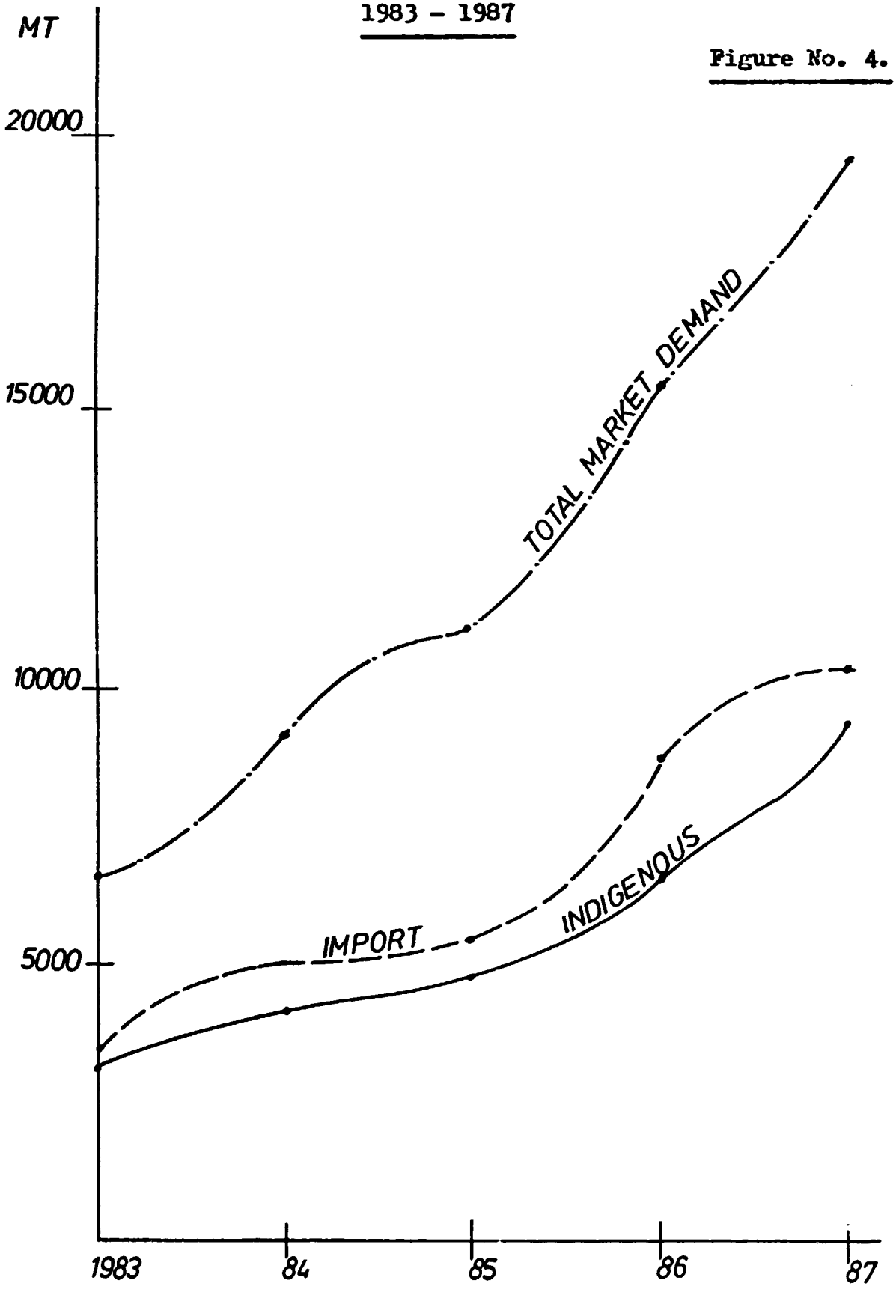


Table No. 1.

ESTIMATED DIRECT MARKET DEMAND FOR INDIGENOUS STEEL PRODUCTS IN UGANDA

1983 - 1987

in M.T.

Product name	1983	1984	1985	1986	1987
Wire rods, bars and rods	120	140	210	420	500
Angles Shp. Hm. and Shp. L.	1200	1100	1100	1200	1300
Plates - heavy, med. and light	150	155	160	270	410
Tinplate and other coated plates	110	180	220	310	300
Hoop and str.	1300	2200	2400	3700	5800
Rails and other rail truck	70	95	120	100	150
Wire	124	205	421	505	720
Seamless tubes	-	-	-	-	-
Welded tubes	20	35	70	75	90
Total :	3094	4090	4701	6570	9270

Table No. 2.

ESTIMATED DIRECT MARKET DEMAND FOR IMPORT STEEL PRODUCTS IN UGANDA 1983 - 1987

in M.T.

Product name	1983	1984	1985	1986	1987
Wire rods, bars and rods	160	750	1100	3200	5000
Angles Shp Hm. and Shp. L.	380	410	820	640	680
Plates - heavy, med. and light	120	160	180	260	320
Tinplate and other coated plates	80	150	140	150	300
Hoop and str.	1600	2500	2300	3500	4200
Rails and other rail truck	150	310	340	300	560
Wire	180	230	405	560	600
Seamless tubes	563	470	1050	3100	3600
Welded tubes	35	50	70	95	110
Total :	3268	5030	5405	8805	10370

ESTIMATED INDIRECT MARKET DEMAND FOR INDIGENOUS AND IMPORT STEEL PRODUCTS IN UGANDA

1983 - 1987

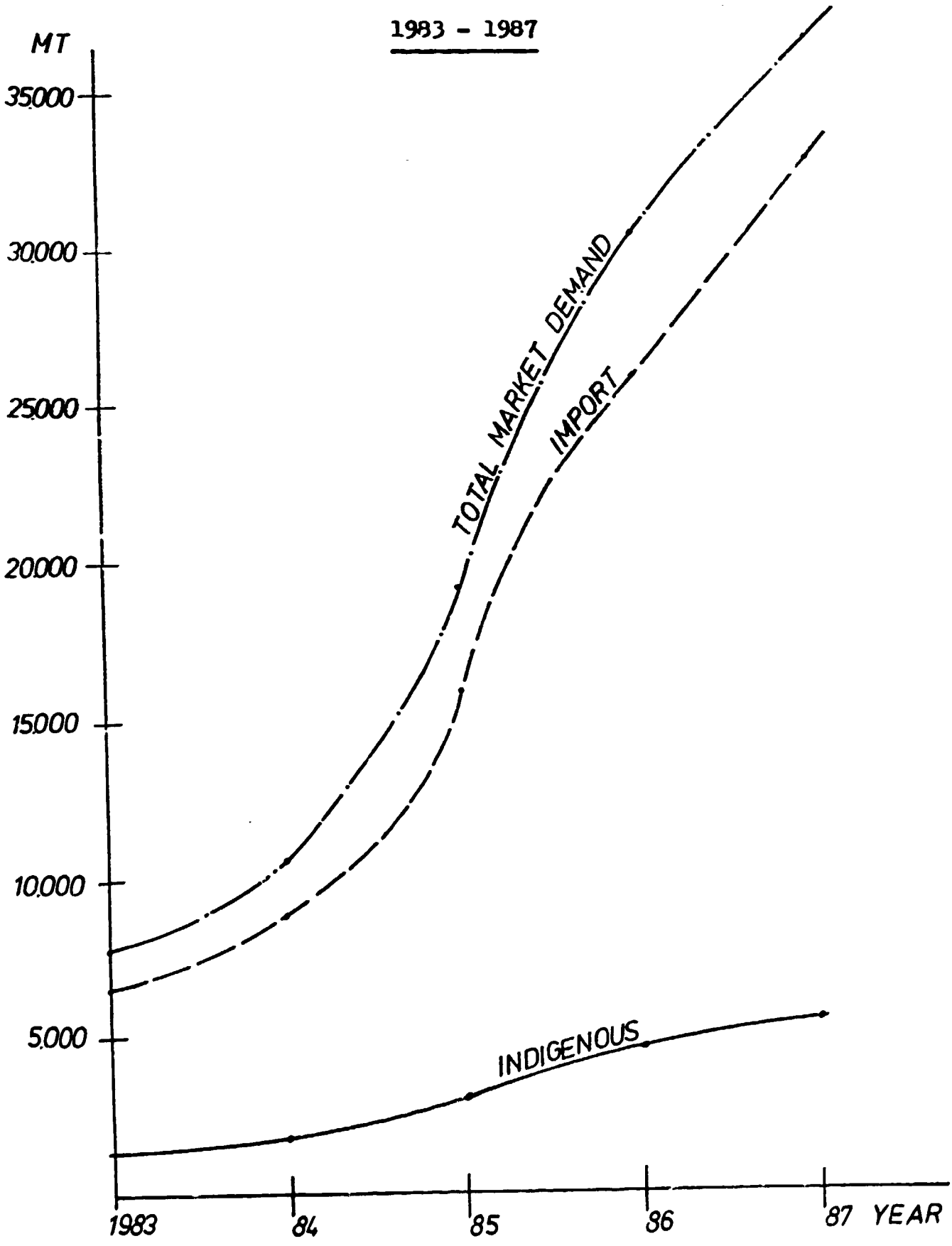


Figure No. 5.

TABLE No. 3.

ESTIMATED INDIRECT MARKET DEMAND FOR INDIGENOUS STEEL PRODUCTS IN UGANDA 1983 - 1987

in M.T.

Product name	1983	1984	1985	1986	1987
Metall structures	16	27	47	37	25
Tanks, vessels etc.	8	17	15	20	35
Wire products	80	650	1400	2490	2800
Nails,nuts, bolts	160	8	21	36	25
Hand tools	55	6	72	96	82
Cutlery and dom. utensils	45	8	8	7	5
Dom. electric equipment	3	15	47	71	90
Agricultural mach. tractors	25	37	43	35	70
Rails, locos, etc.	190	45	270	320	450
Road vehicles	550	760	810	1100	1550
Bycicles etc.	-	-	-	-	-
Heating,sanitary	57	18	48	51	70
Furniture	15	68	75	125	130
Spare parts	55	87	125	180	180
Total :	1259	1743	2981	4588	5512

Table No. 4.

ESTIMATED INDIRECT MARKET DEMAND FOR IMPORT STEEL PRODUCTS IN UGANDA 1983 - 1987

in M.T.

Product name	1983	1984	1985	1986	1987
Metall structures	23	27	50	170	190
Tanks, vessels etc.	40	45	60	80	110
Wire products	34	1520	2800	3550	3800
Nails, nuts, bolts	150	15	24	38	35
Hand tools	40	15	37	125	110
Cutlery and dom. utensils	28	15	13	15	20
Dom. electric equipment	7	105	205	490	510
Agricultural mach. tractors	40	150	163	210	250
Rails, locos etc.	1900	1450	3050	5106	6500
Road vehicles	2900	2500	4060	5041	7000
Bicycles etc.	1200	1900	3400	5600	8000
Heating, sanitary	160	22	59	110	220
Furniture	22	310	366	410	500
Spare parts	310	750	1950	4850	5500
Total :	6554	8824	16237	25795	32745

The following conclusions can be drawn from the four tables and two diagrams:

- eventhough the indigenous steel industrial enterprises face with severe constrains in raw material supply, energy, spare parts, skilled labour, etc. they can partly contribute to the satisfaction of the demand

- the steel products manufacturing companies could more substantially provide the local market with steel products if the above mentioned problems could be continuously overcome. By means of adequate management and highly professional organization some of these steel fabrication companies could considerably increase their production - based on their installed capacities- and they might be turned into the position of supplying highly qualified, valuable products to the home market, moreover part of this production could be sold on export market, such as car bodies, nails, wire products, corrugated and plated sheets, etc. in final products form. The export earnings gained from this activity would solve some of the most crucial problems, such as supply of raw materials, spare parts, rehabilitation, etc.

  Criticism may arise to our approach for some export while the local market is in deep shortage of all commodities. There is no country - even among the most highly developed ones - which manufacture all steel products needed for the local consumption. On the other hand there is a need for the export of those steel products which show comparative advantages. Based upon the above principle and our experience Uganda has several comparative advantages in the steel industry which lays a good foundation for the development of this industry.

- there is considerable demand for cast products; this demand is a latent one, as cast products are usually parts of different kinds of industrial commodities. One of the most crucial problems of the country is the overall and daily lack or shortage of basic spare parts / vehicles, textile-, sugar-, cement industry , railways, etc. /. This problem cannot be overcome without the rehabilitation of the basic foundry and forging capacities. Similarly to other branches of the industry, the foundry sector faces severe difficulties due to its heavy demand for energy and raw materials / coke, alloys, etc. /. It is suggested to consider its rehabilitation, because it needs relatively small investment and the majority of the raw material can be provided from scrap, whereout even the alloys can be separated with well - established organization. A full - scale rehabilitation of the foundry industry can partly contribute to solving the spare parts problems.

  The foundry industry in Uganda absolutely misses the precision casting technology, which is the basic element of spare parts production. The whole transportation sector - which is very important to keep the industry and the whole economy running - is out-dated and in rather bad conditions. This problem is growing everyday as the country imports second - hand vehicles in huge quantities, which is causing severe problems in relation to spare - parts supply and energy consumption.

- the majority of the present import items is such, which must be imported upto 2000. This is reasoned on one hand by the lack of pertinent production capacities, on the other hand the required quantity is deeply under any economic scale of production, for example rails, trucks, engines, etc.

- the prior tables reflect the actual estimated local market demand for steel products, as the potential market demand is assessed to be much more higher. The potential of the steel market is surrounded by many concrete, limiting factors being subject of the overall economic and technical circumstances of the country, such as stability of the monetary system including inflation, exchange rates, external debt, government deficit, rapidly growing population, dependence on traditional export commodities, underdevelopment of the infrastructure, low GNP and GDP per capita. This latter one itself substantially limits the consuming potential of the country among others in the steel market as well.

6.4. The forecast of the steel market demand upto 2000

In Uganda the market and industrial capabilities are on an upward trend to expand, whereas a structural change in national steel demand is likely to take place. Uganda will trend to start local production of the steel based products imported recently, in turn giving rise to greater demand for basic steel products.

The forecast of the market demand - direct and indirect - for steel products is incorporated in Tables No. 5. and 6. Figure No. 6. depicts the overall tendency for illustration.

According to the statistical data available and the personal impressions and experience gained during the mission it can be stated that Uganda potentially owns rich natural resources, considerable installed machinery and manufacturing capabilities. Uganda earns considerable foreign exchange - against all difficulties - even this year, which is originated first of all from the export of agricultural products.

All these facts and the findings and analyses as well as estimates incorporated in the former chapters of the study led us to the conclusion to forecast the market demand for steel products as illustrated in Tables No. 5. and 6. and Figure No. 6.

The forecast is based on real assumptions based on reality, because we wanted to avoid any unrealistic optimism .

ESTIMATED DIRECT AND INDIRECT MARKET DEMAND FORECAST FOR STEEL PRODUCTS IN UGANDA 1995 - 2000

Figure No. 6.

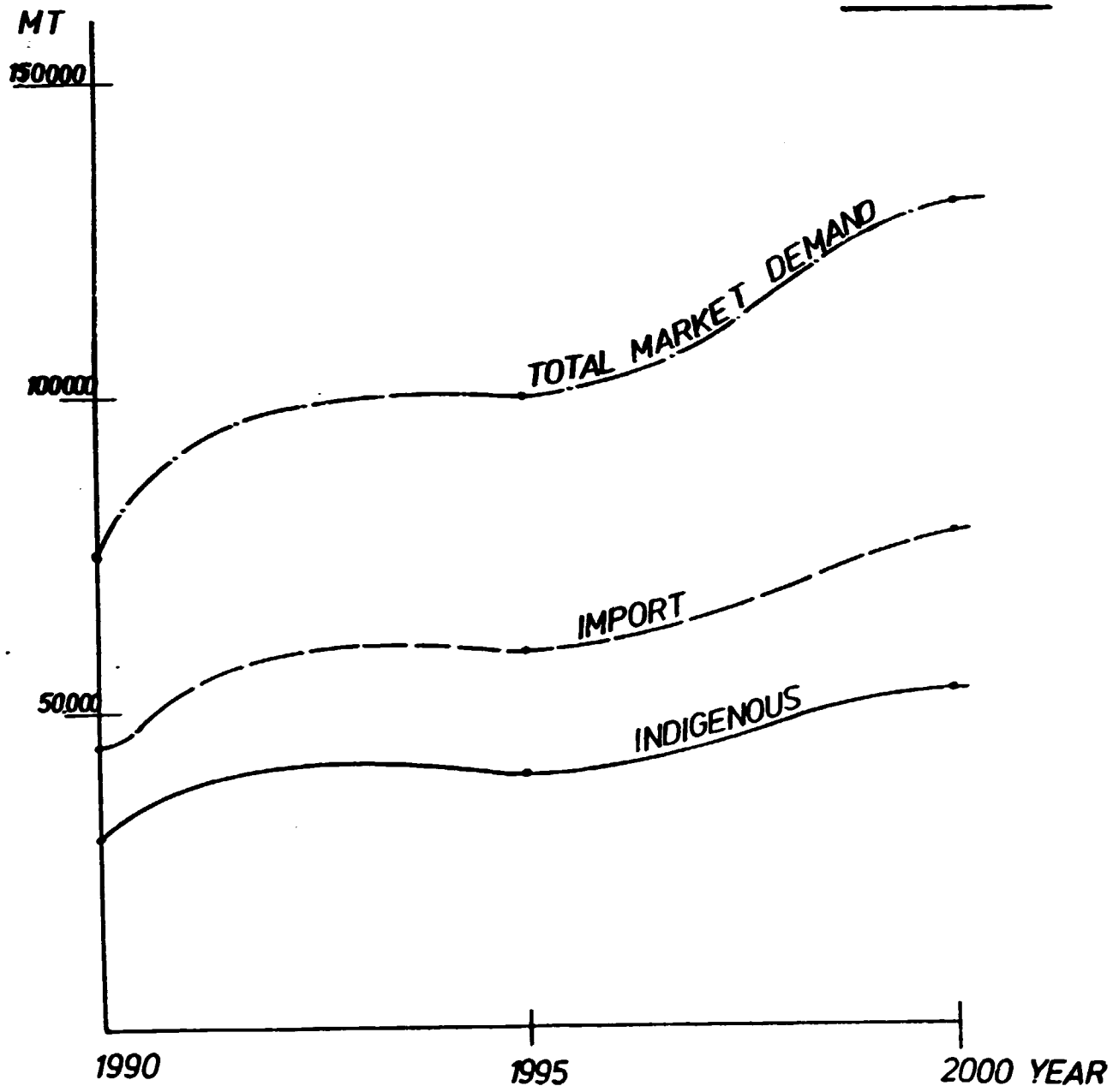


Table No. 5.

ESTIMATED DIRECT MARKET DEMAND FORECAST FOR STEEL PRODUCTS IN UGANDA

1995 - 2000

in M.T.

Product name	1995			2000		
	Local prod.	Import	Total	Local prod.	Import	Total
Wire rods	3100	500	3600	4100	800	4900
Bars and rods	4100	1500	5600	4500	1800	6300
Angles Hm.	2500	1800	4300	2800	3000	5800
Angles L.	2800	1000	3800	3700	1800	5500
Plates heavy	-	1000	1000	-	1500	1500
Plates med.	-	600	600	-	800	800
Plates light	2000	800	2800	2200	1100	3300
Tinplate	4000	-	4000	3500	-	3500
Other coat. plate	1800	-	1800	2500	-	2500
Hoop and strip	2500	500	3000	2500	1600	4100
Rails	-	1000	1000	-	2800	2800
Other rail truck	2400	800	3200	1200	2500	3700
Wire	2500	900	3400	2500	1500	4000
Seamless tube	400	1100	1500	500	1800	2300
Welded tube	-	500	500	-	1000	1000
Total :	28000	12000	40000	30000	22000	52000

Table No. 6.

ESTIMATED INDIRECT MARKET DEMAND FORECAST FOR STEEL PRODUCTS

IN UGANDA

1995 - 2000

in M.T.

Product name	1995			2000		
	Local prod.	Import	Total	Local prod.	Import	Total
Metall struct.	5100	6600	11700	7500	7000	14500
Tanks, vessels	400	600	1000	500	500	1000
Wire products	1600	1800	3400	2100	1700	3800
Nails,nuts bolts	800	1000	1800	1200	800	2000
Hand tools	1000	1800	2800	1500	1500	3000
Cutlery	200	300	500	500	400	900
Domestic utensils	150	300	450	600	400	1000
Agr. mach. tractors	2150	5800	7950	3500	5000	8500
Domestic el. utens.	400	500	900	1500	600	2100
Rails, locos etc.	2100	3200	5300	3500	3100	6600
Road vehicles	2400	14000	16400	4500	17000	21500
Bicycles etc.	200	300	500	800	500	1300
Heating, sanitary	900	1500	2400	1500	1800	3300
Furniture	100	500	600	1200	600	1800
Spare-parts	600	3800	4400	1600	4100	5700
Total :	18000	42000	60000	33000	45000	78000

The target of our forecast was to make assessment upto 1995 and 2000 on real market demand corresponding as far as possible with the real possibilities. The figures show the magnitude of the major trends, maybe some of the figures could be subject to discussions concerning the composition of particular items.

When studying the share of indigenous and import steel products one must take into consideration not only the prices as they are, but also the import content of the indigenous steel products. A detailed comparison is made in Chapter no. 7. - Conclusions. Special care must be devoted to the selection of particular steel products for indigenous production, because the market demand may be more economically satisfied from import.

In the figure and in the tables optimism is shown that the country is on the way to step on consolidation and upon satisfaction of the basic needs further demand can be met on the steel products market as well. All these observations are reflected in Figure no. 6.and Tables no. 5. and 6. which show that the overall market demand will be dubled by the year 2000.

It is to be noted that the restructuring in the world steel industry is a process, which means that new technologies occure and old ones become absolutely out - dated; new materials - like plastics - substitute steel in many fields and new profiles appeare everyday in the steel industry, which have a wide impact on the market demand for steel products in Uganda as well. Therefore it is very important to consider the market demand forecast in a flexible, system- approach manner.

7. CONCLUSIONS

Comparative price analyses of locally-made and imported steel products

The appropriate analyses and appraisal of the home market and international prices and their tendencies is of basic importance to gain a reliable picture on the competitiveness of the indigenous industry.

The shortage in foreign exchange is a common problem in the majority of the developing countries, amoung others this is the case also in Uganda. The efficient utilization of the available foreign exchange substantially influences the economic development of the particular country. This mostly concerns those countries - like Uganda - where the market demand is much higher than the supply. The comparison must be made taking into consideration the production costs and the ex - works price being subject to accessibility to and delivered prices of raw and auxiliary materials, the specific unit operations employed, the labour productivity and the level of capacity utilization etc. It is assumed that the two scrap - based steel mills with electric arc furnace process will produce billets, bars and simple shapes.

The total project capital cost can be taken as US Dollar 900 per ton of installed capacity / counting with 25,000 tonnes per year capacity /. In our assumption the production cost of local steel - making is 400 US Dollar per ton, out of which one - third is accounted for by capital related charges, scrap by 20 %, electricity 10%,

electrodes and ferro - alloys 9 % and salaries and wages 8 %, whilst the balance is far minor cost contributors .

Estimates were also made for foreign exchange proportion of the various cost elements. This shows that upto 48 % of the effective production cost is to be incurred in foreign currency. This observation is important while it underlines the inadequecy of thepopular assumption that the foreign exchange savings achieved by local manufacturing is merely the foreign exchange equivalent of the same units of import.

Our assumption concerning the above estimate is detailed in Table No. 7. on the following page.

Steel production may or may not be profitable depending on the specific cost structure experienced by the particular plant. However, comparing the market price range of US Dollar 400 to 800 per ton for bars produced by local small scrap mills with a landed import price from Europe for bar of US Dollar 360 - 520 indicates that the rationale for steel production is not the price calculation but possibly rather the saving of foreign exchange.

The calculation and the comparison fully support the government's intention to satisfy the local market demand with local production of steel products. There is no doubt that this policy has two positive impacts:

- foreign exchange can be saved via utilizing the already existing local manufacturing capacities
- the foreign exc hange invested in keeping the local steel mills running has widespread implications on all down-stream industries.

Table No. 7.

Indicative bar/shape production cost for EAF -based scrap consuming steel mill in Uganda - 1987

Cost item	Unit cons. per ton of rolled product	Unit price /USD/	Cost per ton of bar/shape / USD /	Percentage of for.exch. / % /
Scrap	1,2 ton	65/t	78,00	0
Fluxes	10,0 kg	0,2/kg	2,00	100
Refractories /melting and casting/	15,0 kg	0,75/kg	11,25	80
Refractories /preheating furnaces /	5,0 kg	0,75/kg	3,75	100
Rolling mill consumables			5,50	100
Electricity	750,0 kwh	0,05/kwh	37,50	0
Electrodes and ferro-alloys	7,5 kg	4,70/kg	35,25	100
Repair and main.			23,30	25
Gen. administr.			32,70	25
Salaries and wages	12,0 mhrs	3,00/mh	36,00	10
Amortization /15 % of fixed charges /			131,25	80
Ex- factory production cost :			396,50	

Beyond the utilization of the existing capacities one can consider - on the long run - based upon a well - organized and well - selected production practice, the export of some steel with high foreign exchange earnings profitability. This potential could improve the balance of payments of the country and difersify the assortiment on the local market, as well as establish new working places.

When studying Table No. it can be stated that there are several fields of decrease of import pro - portion, as Uganda possesses capabilities in certain import substitution, for example in case of fluxes, refractories and ferro-alloys. In this respect small-scale industries can play an important role with government support and incentives.

Remark: The CIF Kampala price was in March 1987 995 US Dollar/ton for steel bar according to the statistics of the Ministry of Commerce.

Out of the ex-factory production cost - i.e. US Dollar 396,50 - the foreign exchange component is 48 % / US Dollar 190,3 / and the local currency component is 52 % / US Dollar 206,20 /.

8. RECOMMENDATIONS

1./ A continuous market survey and data collection is essetial for the establishment of a comprehensive, computerized data bank, which may serve as part of the overall statistical system of Uganda. Such a data bank could provide reliable, continuous and up-to-date information on the daily market situation. By means of such a data bank and information system competent decision - makers could control, monitor and register as well as maybe influence the prevailing tendencies on the market. Therefore it is recommended to lay down the foundation of a " Comprehensive Industrial Information System ", which would have the following benefits:

- registration of the available local production capacities
- registration of the locally available stocks and immobile commodities
- registration of the regular and potential import supply sources
- following - up and forecasting of market tendencies of particular products.

The same phenomenon was reveiled with the intention of the Uganda Export Promotion Council / EPC / to develop a modern trade information - documentation centre / TIDC / to cater for the needs of both private and public sectors.

2./ In order to realize the data bank concept the industrial enterprises must be obliged to provide information on a regular basis. The data bank could most efficiently be utilized if a close co-ordination was realized amoung the Ministry of Indutry and Technology, the Ministry of Commerce and the Ministry of Planning and Economic Development to economize the available foreign exchange, capacity utilization and to influence the market.

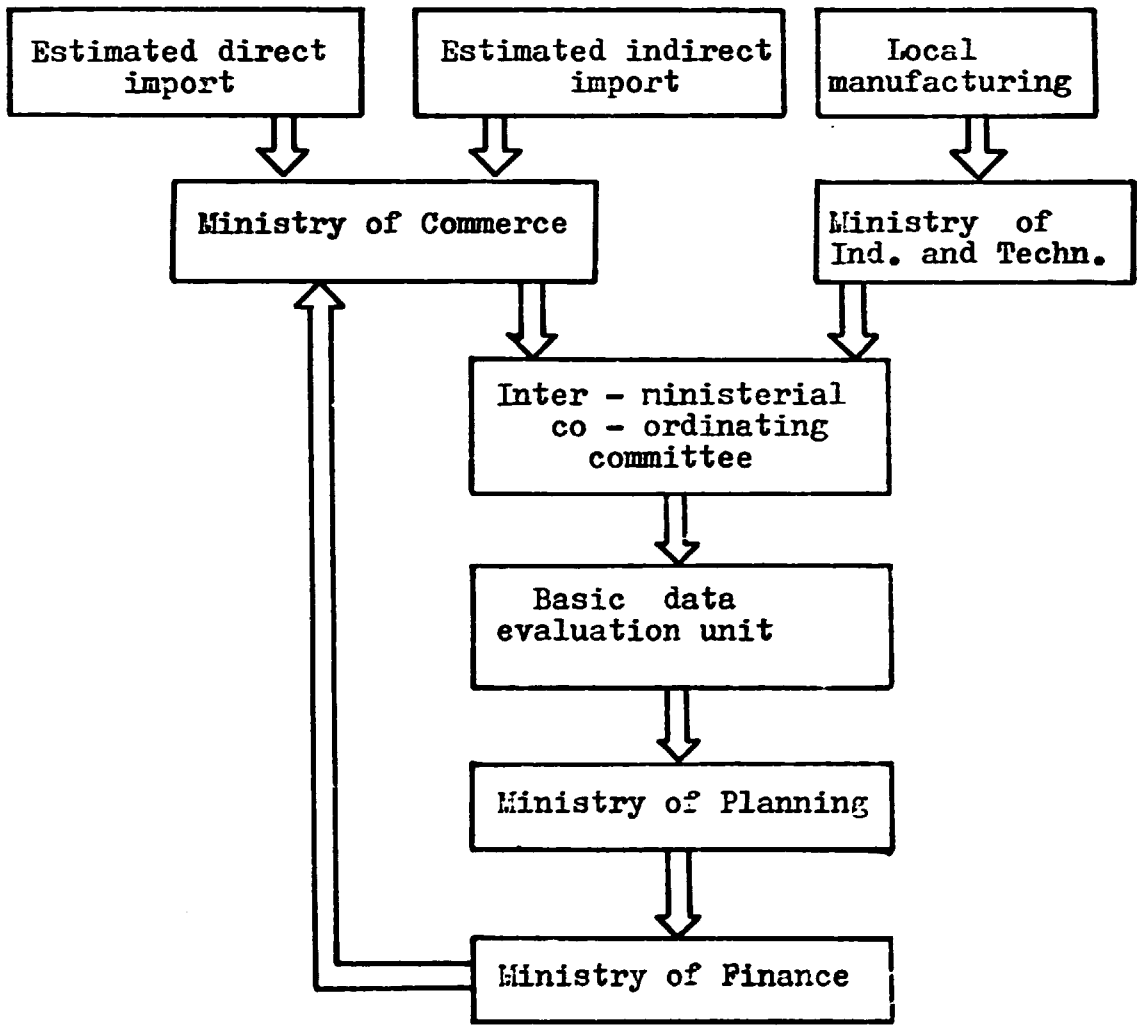
Such co-operation among the government bodies would have a positive impact on the efficiency of import licencing and demand forecasting. Our proposal on the co-operation scheme and the flow-chart of information is described in Table No.8. on the following page.

3./ In order to satisfy the market demand, the full capacity utilization of the indigenous facilities is very important, this latter can lead to the increase of market share of local production basis. To this purpose and to the concept outlined before, a well educated and trained industrial management with economic skills is indispensable. In 1983 professional and technical personnel accounted for only 2,6 percent of the labour force employed in industry, based on a sample of 73 enterprises from the Ministry of Industry 1983 survey, most of them medium and large.

It is highly recommended to lay efforts to realize the above targets as soon as possible, whereas the corresponding technical assistance and financial support from international organizations or bilateral donorsshould be considered.

TABLE No. 8.

PROPOSAL ON THE FLOW CHART OF INFORMATION SOURCES, EVALUATION AND RELATED DECISION-MAKING ON STEEL PRODUCTS



4./ In order to improve gradually the steel market supply an overall systematic survey of all steel production and manufacturing facilities of the country is imperative. It is also necessary - taking into account the prevailing economic circumstances - to draw up a priority list of rehabilitation of the industrial enterprises.

5./ To achieve economic - scale of production and by this way a higher satisfaction of the market demand for steel products / semi-finished and finished consumer goods / the launching or widening of the integration of the PTA countries is essential in this field as well. Such integration would contribute to the widening of the assortiment of steel products, exchange of steel commodities and implementation of common investments on a joint - venture basis. The integration would also accelerate the satisfaction of market demand on competitive prices.

6./ The capacity utilization of the steel production and manufacturing industry - as outlined in point No. 8.3. - requires the establishment of a programme for the development and/or rehabilitation and provision of immediate assistance. Being in aware of its financial implications it is recommended to consider the potential involvment of foreign capital in the form of equity or joint - ventures.

7./ In order to come up to the expectations of the market in terms of quality and assortiment, the

renewing of the production technologies is indispensable, which may be realized in the form of transfer of appropriate technologies. Such upgrading of the installed technologies could contribute to the quantitive satisfaction of the steel market demand by way of,for example, " enlightened steel products ", i.e. from the same raw material input 10 - 50 percent more output can be gained.

8./ There is considerable foundry capacity in Uganda, for example in UCHA, with a well - selected technology transfer this could serve as a basis for the spare - parts production of the country. The rehabilitation programme of Uganda and the continuous operation of the existing industrial enterprises underlines the importance of smooth spare parts supply, for example in the sugar, the textile etc. industries and in the agriculture sector. The foundry industry could find its place in the manufacture of up-to-date steel consumer goods, this is supported by the locally available raw material / iron and steel scrap, limestone, etc. / and the existing machinery.

9./ To supply the local market with steel products via the steel fabrication industry it is of high priority to rehabilitate and / or launch the production in the two steel mills / EASC and Casements / because any delay in starting their operation causes severe burdens on steel import. To keep these plants operating on the long-run it is very important to organize a well - established iron and steel scrap collection, sorting and preparing network country - wide.

10./ In the course of collecting the iron and steel scrap huge quantities of still usable parts and materials of all kinds of machinery, mainly of damaged transport vehicles, emerge, such materials and parts could be recycled to the domestic market as second - hand spare parts contributing to solve the keen problem of spare parts demand on the local market. Those items, which cannot by recycled due to the lack of technological facilities of the country / such as batteries, high - alloyed steel products, etc. / should be exported to earn foreign exchange.

11./ It is stronly recommended - because it is right in time now - when setting up the two rolling mills to establish their production programme taking into deep consideration besides the real market demand the economic scales of production. The selection of the most economic production programme based upon the actual marketdemand would imply the sorting out of those products which are mostly in accordance with the locally available facilities and which can be produced in economic scale / mass production / with competitive prices. These products could be sold for export and the earnings gained could be invested in purchasing of those products which are more material and less labour demanding and therefore their prices are comperatively lower.

12./ Taking into account the local market prices and the world market prices of steel products there is a significant difference. The following of the price trends is a sensitive indicator of the market trends, therefore the careful implementa -

tion of our recommendation included in the last point is strongly underlined.

We recommend to establish a " Commodity Price Appraisal Unit " under the auspices of the Ministry of Commerce. This unit could provide pertinent information and give suggestions to the Import Licensing Department.

13./ It was found that the iron and steel import does not have privileges concerning taxes, duties and levies. It is recommended to establish a priority list of all imported commodities based upon the overall market strategy with special emphasis on the general rehabilitation programme and the industrial recovery trends. Those companies actively contributing to the rehabilitation progress should enjoy privileges in import taxes, duties etc.

14./ Eventhough it is not an official record, it is popularly known, that particular steel products / agricultural hand tools and spare parts etc. /, the local production of which is based on imported raw materials, are flowing out of the country through uncontrolled and unregistered channels. Therefore it is recommended to take measures for controlling the marketing of the steel end - products on the local market. It is also recommended to build up a comprehensive documentation system on import - local production - local consumption - eventual export on a system approach basis.

15./ Based upon the already prepared studies and to be prepared ones in the framework of the subject UNIDO project, it is highly recommended that the competent bodies of the government draw up a " Plan of Action " with identified targets, tasks assorted in priority

list, with realistic deadlines incorporated in a general schedule and last but not least with the appointment of responsible senior officials with good managerial skills and wide practical experience.

16./ Although it does not belong to our duty, based upon our observations, we recommend in cases of those plants which are not in operation or are running with a very low capacity utilization, to turn their employees' underloaded working time, on regular repair and maintenance, on cleaning the environment of the plant as well as on education of the staff. This is suggested to keep the workers principle to work, besides they perform useful job.

17./ In the light of the enormously high inflation rate during the last few years, which badly effected the local market demand, a monetary reform has been carried out in May 1987. In the new monetary situation it is recommended that the government give support through the banking system to steel manufacturers and fabricators in the form of preferential credits to overcome their lack of creditworthiness and shortage of liquidity.

Annex 1.

UNDP/UNIDO.

DP/UGA/84/018.

Aide Memoire

Made on May 13th, 1987 in the offices of the Ministry of Industry and Technology being the counterpart to the UNIDO's subcontractor team assigned to prepare the Steel Products Market Demand Study for the Government of Uganda in the framework of UNIDO project No.DP/UGA/84/018.

Subject: interrim reporting of the team on the work performed.

In the mid-way of its field mission the team reported the Permanent Secretary on its activity performed. The team completed the first phase of its working programme, i.e. surveying, data collecting and plant visiting. In the first step the team gained an overall picture on the structure of the Ugandan iron and steel industry and market. Based upon this information three types of questionnaires were elaborated:

- one to the Ministry of Industry and Technology
- another to the Ministry of Commerce and the Ministry of Planning
- a third one to all iron and steel manufacturers and fabricators to be visited.

The above questionnaires were handed over for filling-in to those enterprises which were selected and suggested to be surveyed by the national counterpart staff and UNIDO's Chief Technical Adviser. The selection was made with the purpose to gain information on the real present situation because these enterprises represent actually the Ugandan iron and steel industry (see the attached list).

The visited ministries and enterprises showed full co-operation. During the meetings the present market situation and the prospectives for future market supply and demand were discussed. The team realised that the Ugandan iron and steel industry has huge installed

capacities with the necessary infrastructure, the utilization of which under the present circumstances is rather limited. On the other hand the demand for iron and steel products surpasses the installed capacities and the import can scarsily bridge the gap.

The Permanent Secretary showed understanding and agreement with the verbal report and supported the team's working programme for the second half of its field mission, i.e. the evaluation phase and preparation of the draft final report.

The Permanent Secretary expressed his support to the successful implementation of the field mission.

Mr. A. B. Katumba
Permanent Secretary
of the
Ministry of Industry
and Technology

Mr. P. Narasik
Team Leader

L I S T

of government bodies and industrial enterprises visited by UNIDO's subcontractor team during the field mission in the framework of UNIDO project No. DP/UGA/84/018.

1. Ministry of Industry and Technology
2. Ministry of Commerce
3. Ministry of Planning and Economic Development
4. East African Steel Corporation Ltd.
5. The Chillington Tool Company (U) Ltd.
6. Casement Steel Rolling Co. Ltd.
7. East African Steel Products Ltd.
8. Uganda Metal Industries Ltd.
9. Uganda General Machinery Corporation Ltd.
10. Sembule Steel Mills Ltd.
11. Larco Concrete Products Ltd.
12. National Housing and Construction Corporation
13. Reconstruction and Development Corporation
14. The Uganda Metal Products and Enamelling Co. Ltd.
15. ROKO Construction Ltd.
16. Casements (Africa) Ltd.
17. Uganda Baati Ltd.
18. Uganda Railways
19. Habitat Consultants

AIDE MEMOIRE

Made on May 19th, 1987 in the offices of the Ministry of Industry and Technology, Kampala - Uganda. Participants:

- Ministry of Industry and Technology
  Mr. B.J. Twodo - Principal Economist
  Ms. S. Sonko - National Counterpart
- Ministry of Planning and Economic Development
  Mr. B. Okullo-Ongar - Principal Economist
- United Nations Development Programme
  Mr. L. Byenkya - Abwoli, Nat. Prog. officer
  Mr. P.R. Merh - Chief Technical Advisor
  Mr. T. Alwala-Adilo - National Expert
  UNIDO/
- TESCO consultants team
  Mr. P. Marancsik - Metallurgical Engineer, Team Leader
  dr. P. Holczer - Market Analyst

Subject: Evaluation meeting of the consultants field mission to Uganda, UNIDO project no DP/UGA/84/018
- preparation of the steel products Market Demand Study

The consultant's team, proceeding to the completion of its field mission, reported the representatives of the competent Uganda government bodies and UNDP being present on the work performed.

The report incorporated the teams summary on its findings, observations and action-oriented recommendations.

The feed-back of the questionnaires distributed during the numerous visits paid to government bodies and industrial enterprises was evaluated as well.

The team introduced the preliminary form of the Draft Final Report, its content and structure was outlined.

The Draft Final Report will be elaborated and finalised in the course of the home-work and it will be submitted to UNIDO in accordance with the stipulations of the subject contract.

.../2

The team expressed its acknowledgement to all partners and counterpart staff who contributed to the succesful implementation of the targets drawn up to the field mission in the hope that the Steel Products Market Demand Study to be prepared will support the rehabilitation programme of the steel industry in Uganda.

for UNDP

for Min. of Industry and Technology.

Min. of Planning and Economic Development

for Consultant's team

Annex 3.

UNDP/UNIDO.

DP/UGA/84/018.

Interim Performance Report

related to the implementation of UNIDO project No. DP/UGA/84/018
- Steel Products Market Demand Study.

Based upon the contract signed between UNIDO and TESCO, our team arrived on May 3rd, 1987 to Uganda - Kampala to carry out the field mission. The working programme of the mission was discussed and agreed upon with UNDP - Kampala, the CTA and the national counterpart staff assigned by the Ministry of Industry and Technology.

During the first half of our mission we prepared three types of questionnaires which were submitted personally during our visits and meetings with the competent government bodies and industrial enterprises (see the attached list). Visits were paid to those companies which were suggested by the CTA and national counterpart experts. By way of discussions and personal impressions we have obtained relevant information on the current market situation and potential future market trends.

In the second half of our mission we intend to evaluate and appraise the collected data, information based upon the filled-in questionnaires received in the meanwhile and our own experience.

On the basis of our first meeting with the Resident Representative it was agreed that on May 18th, 1987 we shall report on the work performed.

Our team reported to the Permanent Secretary of the Ministry of Industry and Technology, the Aide Memoire is attached hereto for easy reference.

Kampala, May 13th, 1987.

Mr. Pál Narancsik
Metallurgical Engineer
Team Leader

Dr. Péter Holczer
Industrial Economist

Annex 4.

Work Programme

3rd May - Sunday	P.M. -	Arrival to Entebbe - Kampala
4th May - Monday	A.M. -	Meeting in the Ministry of Industry and Technology with the Permanent Secretary, Principal Economist and national counterparts
		Meeting in UNDP with the National Programme Officer
	P.M. -	Meeting in the Ministry of Commerce with the Permanent Secretary - submission of the questionnaire
		Meeting in the Ministry of Planning with the Principal Economist - submission of the questionnaire
5th May - Tuesday	A.M. -	Meeting with the Resident Representative of UNDP and the Programme Officer
		Preparation of the detailed working programme with the CTA and national counterpart staff
	P.M. -	Introduction of the working programme to the Ass. Res. Rep.
		Preparation of special questionnaires to iron and steel producers and users
6th May - Wednesday	A.M. -	Visit to East African Steel Corporation Ltd. in Jinja
		Visit to the Chillington Tool Company /U/ Ltd in Jinja
		Visit to the Casements Steel Rolling Co.Ltd. in Jinja
	P.M. -	Visit to the East African Steel Products Ltd.
		Visit to the Uganda Metal Ind. Ltd.
		Visit to Uganda General Machinery Corporation Ltd. / UGMA /

7th May - Thursday	A.M. -	Visit to Sembule Steel Mills Ltd.
		Visit to Larco Concrete Products Ltd.
	P.M. -	Visit to National Housing and Construction Corporation
		Visit to Reconstruction and Development Corporation
8th May - Friday	A.M. -	Visit to the Uganda Metal Products and Enamelling Co. Ltd.
	P.M. -	Evaluation of the questionnaires filled in and received back from contacted companies with the involvment of nat. counterparts
11th May - Monday	A.M. -	Visit to ROKO Construction Ltd.
	P.M. -	Visit to Casements /Africa/ Ltd.
		Visit to Uganda Baati Ltd.
12th May - Tuesday	A.M. -	Consultation in the Ministry of Ind. and Techn. on small-scale industries
	P.M. -	Preparation of the Interim Performance Report to UNIDO
13th May - Wednesday	A.M. -	Visit to the Uganda Steel Corp.
	P.M. -	Visit to the Civil Eng. Dep. of the Uganda Railways
14th May - Thursday	A.M. -	Visit to Habitat Consultants
		Preparation of the Aide Memoire
	P.M. -	Signature of the Aide Memoire, meeting with the Principal Economist of the Min. of Ind.and Technology
15th May - Friday	A.M. -	Visit to Spear Motors Ltd.
		Visit to the Uganda Export Promotion Council
	p.M. -	Interim performance meeting in the M.I.T. with the participation of the UNDP Programme Officer, CTA and national counterpart staff

18th May - Monday	**A.M.**	- Report to the Resident Representative on the preliminary draft final report
	P.M.	- Visit to the Uganda Development Corporation
19th May - Tuesday	**A.M.**	- Project review meeting, discussions of conclusions and recommendations with the participation of the UNDP Progr. Officer, CTA and national counterpart staff
	P.M.	- Trip to Entebbe Visit to the Ministry of Works Visit to the Ministry of Agriculture
20th May - Wednesday	**A.M.**	- Visit to the Customs and Excise Department of the Ministry of Finance Visit to the Motor Vehicle Registration Office
	P.M.	- Final discussion with the national counterpart experts Distribution of the preliminary Draft Final Report for preliminary consideration to: - Ministry of Industry and Technology - Ministry of Planning and Economic Development - UNDP / Kampala along with the signature of the closing Aide Memoire
21st May - Thursday	**P.M.**	- Departure from Kampala / Entebbe

Annex 5.

PEOPLE MET

during the mission to Uganda

United Nations Development Programme	- Mr. F.W.M von Hallinckrodt Resident Representative
	- Mr. A. Disch Ass. Res. Rep.
	- Mr. N. Kulkarni Ass. Res. Rep.
	- Mr. L. Byenkya - Abwooli Nat. Programme Off.
	- Mr. P.R. Herh Chief Technical Advisor
	- Mr. T. Alwala - Adilo National Expert
Ministry of Industry and Technology	- Mr. A. B. Katumba Permanent Secretary
	- Mr. B. J. Twodo Principal Economist
	- Ms. S. Sonko Industrial Officer
	- Mr. J. Epiu Industrial Officer
	- Mr. S. Sentamu Industrial Officer
Ministry of Planning and Economic Development	- Mr. D. Ongar - Okullo Principal Economist
Ministry of Commerce	- Mr. J. Katongole Permanent Secretary
	- Mr. A. Tiberuinge Commissioner for Trade
	- Mr. P. Sabakalu Off-in-Charge for Licensing

East African Steel Corp. Ltd.	- Mr. A. D. Kweyamba General Manager
	- Mr. T. S. Muwanga Senior Engineer
	- Mr. T. Omunyo Senior Accountant
The Chillington Tool Company / U / Ltd.	- Mr. C. Ward General Manager
Casements Steel Rolling Co.	- Mr. A. R. Chowdhury Project Manager
East African Steel Products Ltd.	- Mr. W. Mashemererwa Production Engineer
Uganda Metal Industries Ltd.	- Mr. J. Kabeho General Manager
Uganda General Machinery Corp. Ltd. / UGMA /	- Mr. S. D'Souza Plant Manager
Sembule Steel Mills Ltd.	- Mr. C. C. Sembuya Director
	- Mr. S. Musoke Project Director
Larco Concrete Products Ltd.	- Mr. B. Larco Managing Director
Nat. Housing and Cons. Corp.	- Mr. C.D.M. Sirike Chief Engineer
	- Mr. J. Mbabazi Housing Manager
Reconstruction and Development Corporation	- Mr. J. G. Ssemwogerere Managing Director
The Uganda Metal Products and Enamelling Co. Ltd.	- Mr. J.G. Sentongo-Dungu General Manager
	- Mr. L. Sewayala Chief Engineer
	- Mr. K. Etou Dep. Chief Engineer
ROKO Construction Ltd.	- Mr. K. Blaettler Technical Manager

Casements / Africa / Ltd.	- Mr. Hanzur Alam Chairman
	- Mr. Shahid Alam General Manager
Uganda Baati Limited	- Mr. D.C. Chatterijee Chief Engineer
Uganda Steel Corporation	- Mr.U.G.N.R. Bakeine Ag. Managing Director
Uganda Railways	- Mr. E.M. Kasimbazi Chief Civil Engineer
Habitat Consultants	- Mr. W. Odur - Okello Civil Engineer
Spear Motors Ltd.	- Mr. J. C. Mubiru Sales Manager
Uganda Export Promotion Council	- Mr. N.W. Okola- Imong Director for Trade Prom.
	- Mr. C.S. Boonah Director for Market Res.
Uganda Development Corporation	- Mr. M. Olao Sen. Executive
	- Ms. M.E. Gumisiriza Sen. Executive
Ministry of Works	- Mr. L. Okumba Chief Engineer
Ministry of Agriculture	- Mr. B. Tamtambo Permanent Secretary
	- Mr. A.K. Osuban Commissioner
Motor Vehicle Registration Office	- Mr. S.C.N. Musoke Commissioner
Customs and Excise Department of the Ministry of Finance	- Mr. D. Mununura Chief Statistician

Annex 5.

QUESTIONNAIRE

To .....

being user of iron and steel products relating to UNIDO project No. DP/UGA/84/018 - for the preparation of the Steel Products Market Demand Study

You are kindly requested to answer the questionnaire as thoroughful and as detailed as possible based on real figures and facts or estimates if data were not available or published. Our study will be based on your ifnroamtion provided. Please use M.T.

1. What is the profile of your company?

2. What are your main products?

3. What is your production programme, i.e. shares of different different products in terms of pieces, M.Tons and %?

4. What is the nominal capacity of your company?

5. What is the real capacity of your company?
   (If possible provide data as of 1986)

6. What kind of and howmuch quantity of raw and auxiliary iron steel materials is used for your production?

7. How and by whom is the quantity of the raw materials be decided to your production and which are the main issues in decision-making?

8. How and by whom is the quantity of import materials be decided to your production?

9. Do you have continuous supply of raw materials?

   If not, which are the reasons:

   - lack of raw material in domestic market
   - problems in import
   - bureaucracy in purchasing procedure.

10. Which are your sources of purchasing iron and steel raw material:

    - domestic market

    - import

11. Do you have appropriate technology for your production?

12. Have you ever made any feasibility or economic study on your production?

13. Where and to whom are your products sold?

14. Which are the channels of selling your products?

15. How much percent of your production goes for export?

16. How much quantity of your products could you sell if all the necessary conditions would be provided?

17. Have you every made a market study, if yet please provide details of your findings.

18. Which are the main problems in your production:

    - lack of raw materials

    - lack of energy

    - lack of skilled labour

    - bad conditions of your machines

19. Which are your priorities in sorting and selecting the purchase orders placed with you.

20. Do you have immediate, medium-term and long-term plans or ideas on development or rationalization?

21. In which direction(s) do you consider to develop your production?

22. Does your company have a marketing strategy, if yes which are the main objectives?

QUESTIONNAIRE

To the Ministry of Industry and Technology relating to UNIDO project No. DP/UGA/84/018 - for the preparation of the Steel Products Market Demand Study

You are kindly requested to answer the questionnaire as thoroughful as detailed as possible based on real facts and figures or your estimates if data were not available or published. Our study will be based on your information provided. Please use M.T.

1. How many M.T. was the iron and steel production of Uganda in 1986? Out of this total the share of:

   Iron
   - pig iron
   - finished iron products (for example castings)

   iron products total;

   Steel
   - semi - finish products (billet, bar, ingot, etc.)
   - forged products
   - rolled products, out of which
     - rod
     - angles
     - wire
     - sheet

   steel products total:

2. How much is the distribution of iron and steel production for
   - local market in tons
   - exportation in tons

3. Distribution of consumption of iron and steel products among the economic sectors, such as:
   - agriculture
   - food industry
   - textile industry
   - building industry
   - transportation and telecommunication
   - manufacturing industry

- energy sector
- miscellaneous

4. The share of local production and import of iron and steel products among the economic sectors, such as:
   - agriculture
   - food industry
   - textile industry
   - building industry
   - transportation and telecommunication
   - manufacturing industry
   - energy sector
   - miscellaneous

5. The share of local and imported raw and auxiliary materials to the iron and steel industry of Uganda, i.e.:
   - from local sources in M.T. in%
   - from import in M.T. in%

6. How much is the iron and steel scrap deposits of Uganda based upon surveys or estimates?

7. Does in Uganda exist an organized system of scrap collection and recycling? If yes, how does it work?

8. In the recycling of iron and steel scrap the share is as follows for:
   - manual sorting in M.T. in%
   - manual processing in M.T. in%
   - mechanical processing in M.T. in%

9. Are the firms-having scrap - obliged by law to recycle it?

10. Does plan exist on surveying and exploring the raw and auxiliary materials? If yes, how many percent of raw and auxiliary materials input will be based upon these deposits?

11. According to surveys and/or experience how many percent of the nominal, available capacity is being utilized in the iron and steel industry?

12. Is there any estimate prepared on the infrastructural and investment demand related to the rehabilitation of the iron and steel industry?

13. Which are the development plans of the Ministry of Industry and Technology in the iron and steel industry for immediate action, in medium-term (5 years) and in long term? Is there any scientific and/or technological development plan in the iron and steel industry?

QUESTIONNAIRE

To the Ministry of Commerce relating to UNIDO project No. DP/UGA/88/018
- for the preparation of the Steel Products Market Demand Study

You are kindly requested to answer the questionnaire as thoroughly and as detailed as possible based on real figures and facts or your estimates if data were not available or published. Our study will be based on your information provided. Please use M.T.

1. How much is the import of Uganda in iron and steel raw and auxiliary materials in terms of M.T. and in US Dollars?

2. How much is the import of Uganda in iron and steel semi-finished products (bar, rod, ingot, pig iron, etc.)

3. How much is the import of Uganda in iron and steel finished products (wire, sheet, angles, etc.)?

4. How much is the present annual real demand of Uganda in iron and steel
   - raw and auxiliary materials
   - semi finished products
   - finished products

   according to your surveys and data?

5. Which is the way of distribution i.e. allocation of imported iron and steel products:
   - centralized distribution according to production priorities
   - free market
   - ad hoc satisfaction of demands

6. Which organization is responsible for decision-making on distribution and/or allocation of imported iron and steel, which are the points taken into consideration when decision-making?

7. Which is - if any - the priority list among economic sectors in distribution or allocation the iron and steel products?

8. Is there any export of Uganda in iron and steel products yes how much is it in terms of M.T. and in US Dollars?

9. Did you prepare any assessment or estimates on demand for iron and steel product taking into consideration
   a) the existing production facilities
   b) the existing but not operating facilities
   c) the planned development and/or investments

10. Which is the way of iron and steel products from the manufacturer to the end-user?

11. Which is the way of iron and steel products from the importation to the end-user?

12. Do you plan any modification in the way of iron and steel products and its control? If yes, in which direction and by which means?

13. How much is the share of imported iron and steel products in the following economic sectors:
   - agriculture
   - food industry
   - textile industry
   - building industry
   - transportation and telecommunication
   - manufacturing industry
   - energy sector
   - miscellaneous

14. Which organization is responsible for the satisfaction of import needs, which is the procedure followed?

15. Which are the organizations, firms, enterprises dealing with the whole-sale and retail sale of iron and steel products, how much is their share in terms of M.T. and in percentage?

16. Which are the means of the Ministry of Commerce in influencing the iron and steel products market (duties, taxes, levies, etc.)?

17. Regarding the collecting and recycling of iron and steel scrap, which commercial means are in force to influece the increase of this activity?

10. REFERENCES

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2./ UGANDA - Lloyds Bank Economic Report 1986
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3./ UGANDA - Industrial Sector Memo
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30 September 1986

4./ Development of the Iron and Steel Industry in Uganda
Final Report of Mr. V.E. Iliev, UNIDO expert related to UNIDO project No. SI/UGA/77/801

5./ Rehabilitation and Development Plan
1987/88 - 1990/91
Ministry of Planning and Economic Development
Kampala, Uganda - March, 1987

6./ HA - Länderblatt - Uganda
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7./ Assistance to the Ministry of Industry and Technology - Iron and Steel Industry - DP/UGA/84/018
Feasibility Study Report on Metal Scrap Processing Plant , Prepared by Mr. P.R. Mehr, Iron and Steel Expert
28 January, 1987