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INDUSTRIAL FEASIBILITY ANALYSIS IN MALAWI *

by

E. Nyirenda **

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** Senior Projects Officer, Acting Head of Projects Department, Malawi Development Corporation, Blantyre, Malawi. The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Malawi Development Corporation nor the Secretariat of UNIDO.

COUNTRY PAPER - MALAWI

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INDUSTRIAL FEASIBILITY ANALYSIS IN MALAWI

S U M M A R Y

This paper discusses Industrial Feasibility Analysis in Malawi in relation to the structure of the Malawi economy together with the practice, procedure and investment institutions in the country. Also, it reviews critically a particular case study in relation to its conformity with UNIDO Manual for the Preparation of Feasibility Studies and analyses the difficulties and constraints experienced in the generation of viable studies. Finally, it makes recommendations about how external aid agencies could help alleviate these difficulties.

2. The Malawi economy largely depends on agriculture but industrialization in import substitution and export oriented industries is being actively encouraged. About 16% of the annual investment resources are mobilized locally and the rest of the development budget is funded by external aid agencies. In this way, generally Malawi does not experience difficulties in funding viable projects and it is hardly possible to find suitable feasible projects lying wasted about, as studies are prepared with specific funding sources in mind.

3. There are several industrial development institutions in the country which prepare feasibility studies with or without the help of foreign consultants. Some of the institutions are satisfactorily equipped with staff familiar with the methods of appraising industrial projects as recommended in the UNIDO Manual. In addition financing and implementation of viable projects is not a major constraint. The major problem for Malawi is a serious shortage of personnel particularly at the comparatively junior levels who have the required breadth of training and experience. Therefore, the appropriate response for both the Malawi Government and the External Aid Agencies should be generally to increase the general training available in a bid to enlarge economically and financially grounded staff in the public and private sectors through specialized further training in finance, project appraisal and preparation of feasibility studies. Since the decision making process in Malawi appears adequate at present, the major constraint is a severe shortage of professional people at junior levels to actually produce studies at a faster rate. Therefore, the External Aid Agencies should extend their activities in those areas.

PART I INDUSTRIAL FEASIBILITY STUDIES IN MALAWI

This paper is Malawi's Country Position Paper, for presentation to UNIDO's Expert Group Meeting on Evaluation and Follow-up of Feasibility Studies, to be held in Vienna from 4th to 8th December, 1975. The format and structure of the Paper are designed to conform to the Terms of Reference issued by UNIDO. As requested, the contents are intended as a contribution to a continuing discussion rather than a definitive statement on this topic.

1. Procedure and Practice for Initiating and Conceiving Industrial Projects

All of the institutions involved in industrial development in Malawi can and do initiate and produce feasibility studies. Project ideas are developed by analysing and identifying various industrial opportunities that can be developed into investments.

1.2 To a large extent, the future development of Malawi's economy will continue to depend on the agricultural sector, but the encouragement of industrialisation for both import-substitution and export-oriented industries are definitely part of Government policy, a part which is executed by the Ministry of Trade, Industry and Tourism (MTIT) and other investment institutions.

1.3 In addition, since the investment resources which the Malawi Government mobilises domestically in a given year represent only around 16 per cent of the currently Malawi Kwacha (MK) 100 million per year Development Budget, the rest of which is largely funded by external aid agencies who will not normally finance more than 85 per cent of a given project, it will be seen that an approach which is appropriate for a Government with the room for large autonomous expenditure is less well suited to the case of Malawi.

1.4 In relation to the requested Case Study for this paper, generally, Malawi has not experienced difficulties in funding viable projects, and it has not been possible to find a suitable feasibility lying unused. The studies which are undertaken both within the country and by foreign consultants are usually prepared with specific funding sources in mind.

2. Institutions Concerned with Industrial Development

2.1 The relevant institutions with an indication of their capabilities are :-

a) Malawi Development Corporation (MDC). This is a wholly-owned Government Corporation which operates on commercial basis, paying tax like any other company. MDC promotes joint ventures with domestic and foreign investors. It has a project analysis staff of six Malawians who have received training within the Corporation but two of these have been trained in Project Analysis externally also. The project analysis, preparation of feasibility studies and their follow-up are directed by another Malawian, the Deputy General Manager of MDC who has received professional training externally in this and other fields of management.

b) Investment and Development Bank of Malawi Limited (INDEBANK). An internationally financed and commercially operated development Bank, with ADMARC as the local partner. Indebank has four people doing project analysis; skills are mostly bank-accounting based.

c) Agricultural Development and Marketing Corporation (ADMARC). Parastatal body particularly involved in agro-industrial projects, either on its own or with others including MDC and Press (Holdings) Limited. Project analysis staff of 5 practice accounting rather than economic approaches.

- d) Prose (Holdings) Limited. Private group with 17 subsidiaries and 23 associated companies. One expatriate and foreign-trained economist with internally-trained staff of two Malawians doing some pre-feasibility analysis.
- e) Ministry of Trade, Industry and Tourism. Two expatriate economists, one Malawian currently being trained in Feasibility Analysis.
- f) Economic Planning Division of the Office of the President and Cabinet (EPD). Four Malawian economists experienced in mostly non-industrial project appraisal.

2.2 The concepts for project appraisal followed by the above institutions are basically the same, although the details may vary from one institution to another. In MDC, the project analysis staff at times are required to turn a technical study into a commercial and financial proposition which can be used for negotiation with would-be partners.

3. Critical Review of Difficulties and Constraints in the Generation of Viable Studies and the External Aid Agencies' Role in alleviating these difficulties.

3.1 It will have emerged from the above that many of the methodological problems which constrain practical Feasibility Analysis in other developing countries are not so difficult for Malawi; in addition financing and implementation are not major constraints. What remains is a serious shortage of personnel, particularly at the comparatively junior levels, with required breadth of training and experience. Given that this shortage of trained economists and economically/financially grounded staff is general across both the Government and private sectors, it is felt that the appropriate response which concerns both Government and the Aid Agencies will be to increase the general training available in a bid to enlarge the pool of skills rather than to reallocate the resources available through highly specialised further training in, for example, Feasibility Analysis.

3.2 The need for a broad grounding in economics for the successful production is also a factor which is possibly understated by the approach of the UNIDO Manual, which for perfectly good reasons, structures its presentation around 'guidelines', with frequent reference to the need to adapt these to particular data and cases. It is submitted in this paper that the ability to choose the right adaptations, or good ones is a central requirement, the importance of which is understated by this form of presentation. In-service training of local staff within particular institutions may not provide this perspective, and it is here that the aid agencies may provide more help.

PART II THE CASE STUDY: FEASIBILITY STUDY OF A USED OIL REFINERY IN MALAWI

1.1 This study was chosen for analysis because it is one of the most comprehensive studies produced by overseas Consultants. Together with Annexes, the document has 24 pages. Now, it is being studied by Malawi as a possible investment project.

1.2 The investigation covered all important aspects to determine the commercial feasibility of such a project in Malawi. Firstly, the Consultants assessed the amount of used oil that could be collected in Malawi, using data collection, personal interviews, and field investigations. In analysing this information, the size and composition of the present effective market demand by segments was determined. The sales and demand projections were carried out and this determined the choice of technology and alternative processes, plant capacity, production programmes and marketing strategy. Other details of the project included the mode and cost of collection of used oil, oil characteristics and technical conceptions. The report also discussed the impact the project would have on various economic and environmental aspects. In the financial and economic analyses, various details and results are presented.

1.3 Three important sectors consume lube oil in Malawi namely, private and government vehicles (77%), industry (15%), railways and ships (5%). On the basis that lube oil consumption would be 4,775,000 litres and an expected collection efficiency of 45% of the virgin oil quantity consumed in Malawi, it was estimated that waste oil quantity of 2,150,000 litres could be collected in 1980. Also, there are three main consumption regions in Malawi. The Southern Region has by far the biggest concentration of industry and economic activity with total lube oil consumption of 70% followed by the Central Region 27% and finally the Northern Region 3%. Thus, for a refinery starting operation in 1980 a capacity of :-

1,200 kg of waste oil per hour
7 hours operation per day
250 days per year

was calculated. It was also recommended that the plant should be based on the acid/clay process because experience had shown that among the available technologies this process was the most economic one.

1.4 Following the assessment of demand and input requirements etc., the Blantyre area in the Southern Region was recommended as the suitable location of the plant because approximately 70% of the used oil would be collected in that Region. Also in the heavy industrial area sites are available which have all the necessary infrastructural installations.

1.5 Total fixed investment cost was estimated at MK1,140,000 broken down into :-

(a) local cost MK672,100
(b) foreign cost MK467,900

Working Capital requirements were estimated at MK185,318. The investment and cost calculations were based on 1978 values, no allowances being made for future inflation in costs and the assumption being that all inflation would be reflected in increased sales revenues, thus maintaining the contribution constant.

1.6 Assuming that the whole project was funded with equity capital, the return on fixed investment after tax was calculated as 18% and the return on total investment i.e. including working capital and start up costs as 14%. The Internal Rate of Return based on the discounted cashflow was determined as being 20%. The most important macroeconomic effect was the import substitution of about 1,500,000 litres of blended lube oil, whilst the cost-benefit calculation for the economy of Malawi based on conservative assumptions

revealed an Internal Rate of Return of about 13%. Therefore, the conclusion was that a waste oil refinery in Malaŵi could be highly recommended both from the micro and macro-economic point of view.

1.7 Critical View

The feasibility study team consisted of a technical manager and an economist. Although in most of its important respects the report conforms with contents of the UNIDO Manual for the Preparation of Industrial Feasibility Studies, there are some areas in which the study was deficient. For example, in the financial evaluation, the team did not compute certain commercial profitability criteria like Net Present Value, Payback period and no sensitivity analysis or even probability analysis were undertaken on the investment under conditions of uncertainty especially regarding such variables as sales revenues, production and investment costs. Also, in the national economic evaluation of the project, no shadow pricing of labour, foreign exchange and investment was calculated to allow for divergencies between market prices and true costs or values to the economy in terms of the use of real resources. However, it is government policy in Malaŵi that shadow prices or conversion factors should not be used in the appraisal of Malaŵi projects.

The Report also tended to ignore detailed description of the local development of the project together with the reason for sponsor's interest in it. Also, details of project engineering and implementation schedules were played down upon perhaps for the specific reason that the decision to invest and start commercial production has not yet been made.

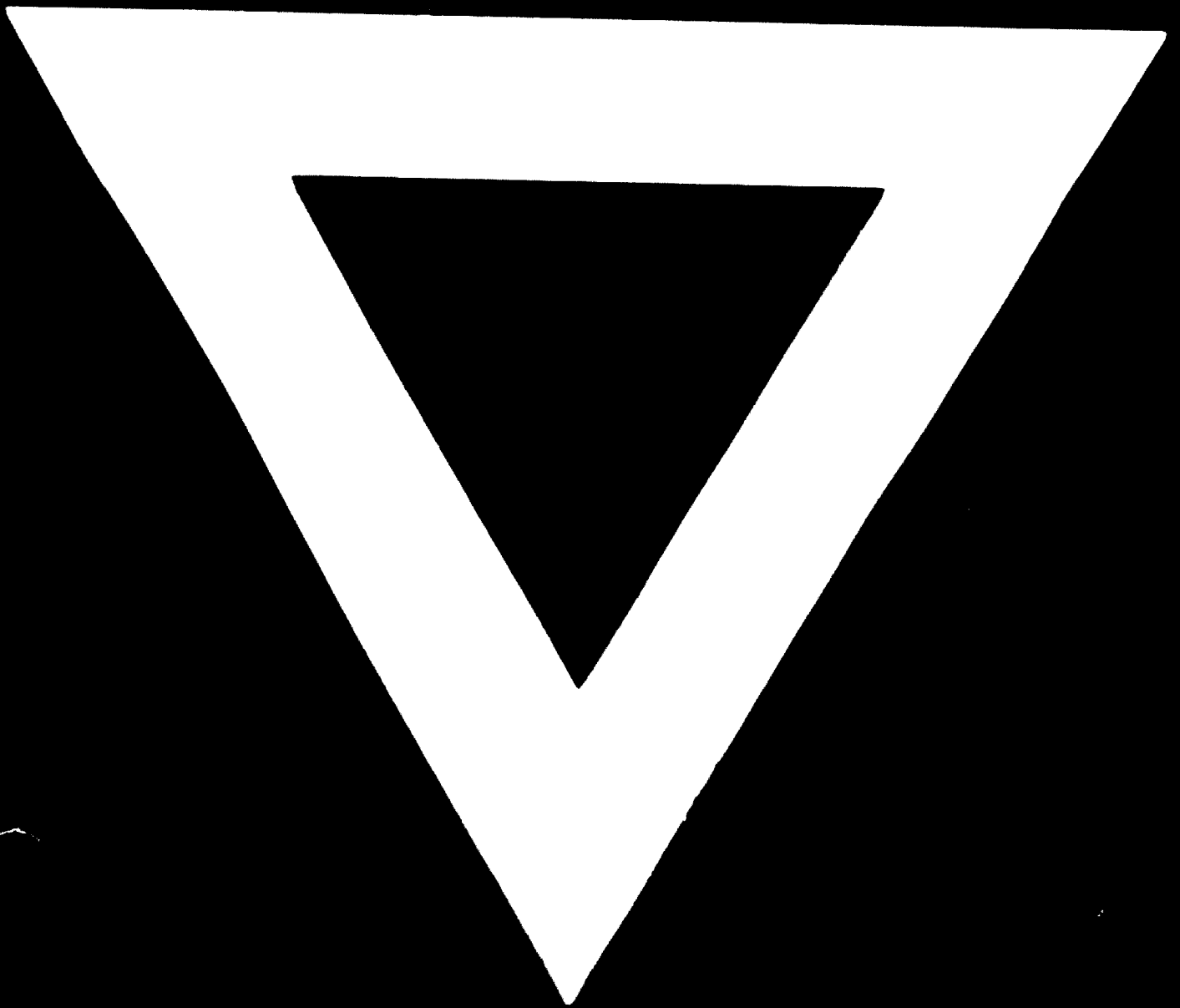
2. RECOMMENDATIONS

2.1 The decision-making process within Malaŵi appears adequate at present. Projects which appear viable generally attract finance and are implemented, and there is no reason to believe that this would not continue to be the case if viable projects were produced at a faster rate.

2.2 The major constraint which has been identified is a severe shortage of people to actually do the studies, and it has been suggested that specialist short courses to cope with this are not the answer - the problem is a general shortage of professional staff with a background in economics and finance in both the public and private sectors, less marked at senior levels, but no less binding for that as the studies must actually be produced by more junior personnel.

2.3 The case study is also presented here because the project really needed expert advice on choice of technology and plant inputs and outputs, etc. The right type of production techniques had to be related to the process technology or manufacturing techniques. Thus since the technologies involved were new and sophisticated to the local economists, it was imperative to seek guidance from those possessing the know-how. Also it shows clearly that because of the multi-disciplinary tasks in project planning, economists now and again need the aid of various short term consulting engineers and technologists to assist in more objective assimilation of the technological and engineering problems. Therefore, the external aid agencies can extend their activities in these areas also.

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