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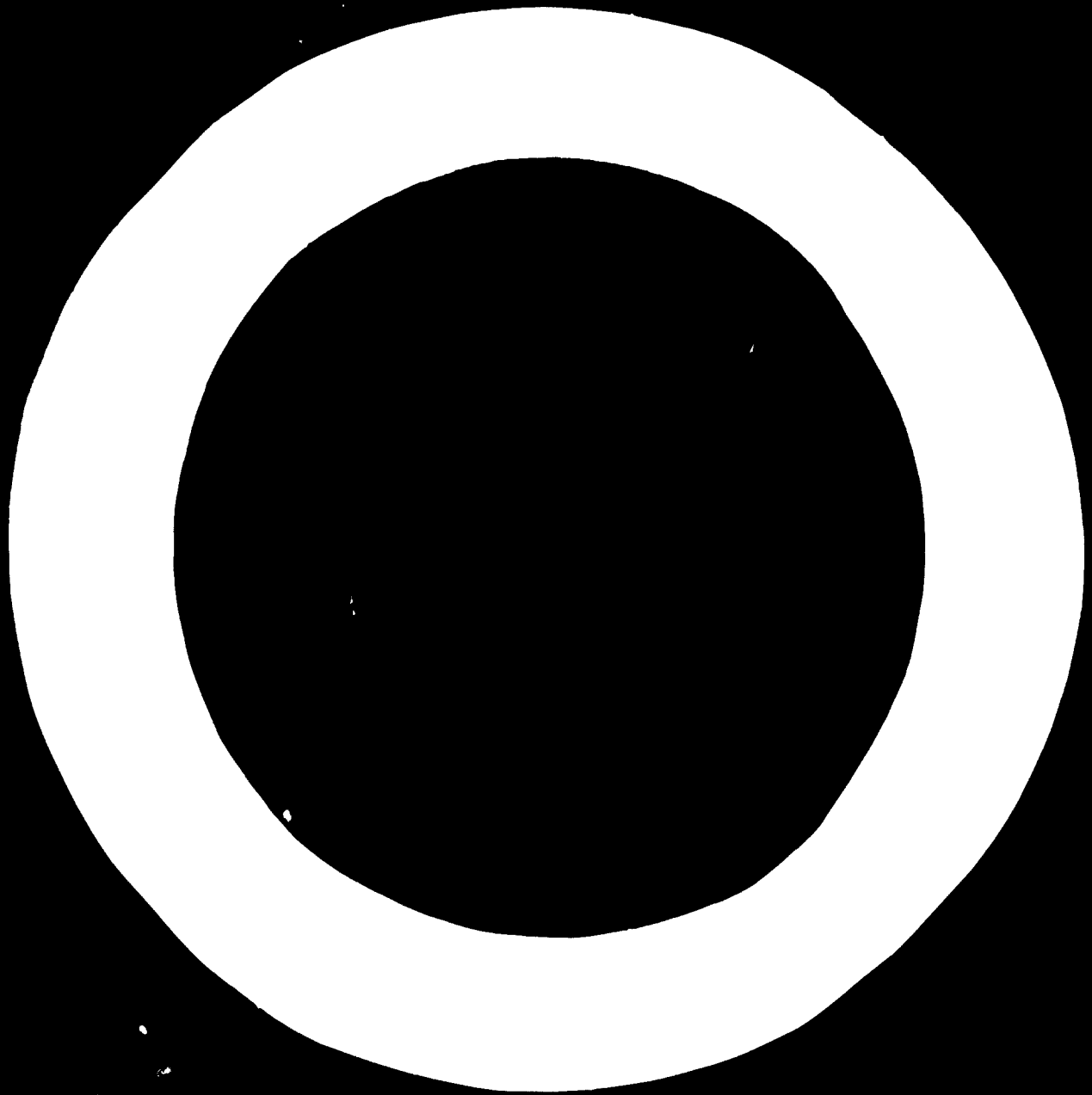
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TECHNICAL ASSISTANCE FOR INDUSTRIAL DEVELOPMENT:  
THE AFRICAN EXPERIENCE

(Presented by the secretariat  
of the Economic Commission for Africa)



TECHNICAL ASSISTANCE FOR INDUSTRIAL DEVELOPMENT:

THE AFRICAN EXPERIENCE

1. The purpose of this paper is to review briefly and selectively some of the experience gained in the United Nations Technical Assistance programme in the field of industry. The term "United Nations" in this context covers the whole United Nations family interested in one or another aspect of industrial development. The term "technical assistance" covers the Regular Programmes of the United Nations and Specialized Agencies, the Expanded Programme and some Special Fund projects.
2. This paper does not attempt to describe and analyse in full the rôle and experience in Africa of experts of the UN family working on industrial problems.<sup>1/</sup> For present purposes it is sufficient to set out briefly, as is done in the first part of this paper, the general scope of the programme together with illustrative data on selected countries. The remainder of the paper sets out some considerations which it is hoped may serve as a basis for discussion of the evaluation of policy in this field, and attempts to answer the question what should be the rôle of the UN family, and particularly the UN itself.
3. On 1st July 1965 there were approximately 100 country experts working in Africa on industrial problems. The definition of "industry" in this context is a wide one<sup>2/</sup> and includes not only manufacturing industry in the narrow sense of, for example, metals, engineering and textiles, but also agricultural industries including food processing, together with technical and vocational education and training.<sup>3/</sup>

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1/ This could be done on the basis of the job descriptions and reports of these experts and would seem worth doing.

2/ A complete analysis would need to be wider still to include for example natural resource prospection and infrastructure.

3/ The source of these figures is TAB/Doc/R.106 of 12 August 1965.

There is considerable variation between countries. Four countries have no technical assistance experts in industry at all, and 10 have only one.

4. Some illustrations can be given of the functions being performed by the experts.<sup>1/</sup> In Rwanda an industrial engineer has been assisting the Government in formulating and evaluating proposals for the establishment and modernization of small-scale industry and has also advised on the facilities required for servicing and financing such industries. In Nigeria and Liberia industrial economists have advised the Governments on project evaluation, assessment of priorities in the industrial programme and industrial location. In the UAR a mechanical engineer is engaged on designing and putting into operation production planning and control systems in metal working plants. In Guinea an expert is advising individual enterprises on ways and means of improving productivity and is examining quantitatively and qualitatively needs for the future training of managers. In Algeria there are two experts on industrial planning. In the Cameroon an expert is advising the Société nationale d'Investissements on industrial programming and project evaluation. These are a few specific illustrations. The bulk of the experts working in this field are provided either by the FAO on agricultural or rural industries, or by the ILO on artisanal industries, on the improvement of productivity, on vocational training and on management development. It will be seen that the technical assistance programme proper in this field is of a comparatively limited character and also somewhat heterogeneous.

5. There were on 31 August 1965<sup>2/</sup> 31 Special Fund projects in the industrial field as defined above, including 22 of an educational or training character, 7 concerned with research and industrial problems, and

<sup>1/</sup> This information is drawn partly from "Technical Assistance provided to countries in the ECA region - expanded and regular programmes" prepared by the TAB secretariat for the seventh session of the ECA February 1965.

<sup>2/</sup> See SF/Reports Series A, No. 60, 31 August 1965.

two carried out pre-investment surveys. Examples of training and vocational projects are one on the training of civil and electrical engineers and another on adult vocational training in Algeria; a national Institute on Vocational Training in Congo (Leopoldville); a Faculty of Engineering and a Polytechnic in Kenya; a rural Polytechnic Institute in Mali; an Institute for Instructor Training for Leather and Textile Workers in Morocco; a Faculty of Engineering in Nigeria; an Instructor and Foreman Training Centre in Senegal; a Management Development and Productivity Centre in Sudan; a National Vocational Training and Productivity Institute in Tunisia; and a Management Training and Advisory Centre in Uganda.

6. Examples of research and industrial promotion institutes are: a Food Research and Development Unit in Ghana; an Institute of Food Technology in Senegal; an Industrial Research Institute in Sudan; and an Industrial Studies and Development Centre in Tanzania. The last is of particular interest since it is the first project of its kind concerned to advise the Government on industrial policy and organization, undertake or assist in feasibility studies and project formulation, and provide industrial extension services to existing and new industries. The origin of this project lies in a mission sent by the Centre for Industrial Development in association with ECA.

7. The two pre-investment surveys are: an industrial marketing survey for industries based on petroleum derivatives and natural gas, about to be started in Algeria; and an iron ore transport survey which has just been completed in Gabon and which will pave the way for the exploitation of rich iron ore deposits in Mekambo, a railway to the coast at Owendo, and a new port. Here again the marked emphasis on technical education and training can be seen, with the development of new institutions, as yet comparatively limited, and so far little emphasis on pre-investment activity.

8. An evaluation of the work of the UN family including the Special Fund in the national field must be considered against the background of the much greater effort being sustained by the bilateral donors. It would seem necessary to attempt to define more clearly the respective rôles of all the agencies concerned with the promotion of industrial development, having regard to the capabilities and resources of each of them.

9. The ECA has been responsible for much of the work done in the field of preliminary or general studies. Working largely on a sub-regional basis it will soon have completed a comprehensive series of studies of the possibilities of developing industries of almost all kinds in each of the four sub-regions of Africa. Much emphasis has been placed on sub-regional co-operation in industrial development owing to the limited size of the national markets, the requirements of economies of scale and the advantages, direct and indirect, to be derived from international specialization. In the next stage the main emphasis has to be on feasibility and engineering studies and on applied research, training and industrial promotion, together of course with the finding of finance.
10. Feasibility and engineering studies are for the most part beyond the scope of either ECA or individual experts sent under the technical assistance programmes of the United Nations family. They are specialized and expensive and there are two main sources: one is the United Nations Special Fund; and the other is through bilateral aid programmes which are a means of financing the specialized firms who can do this kind of work.
11. The development of applied research in Africa requires the establishment of indigenous institutions and since these are expensive to set up and maintain, a grouping of efforts is required. A start has been made in this direction which is likely to be supported by the UN Special Fund.<sup>1/</sup>
12. Training at advanced levels has to be carried out in the industrialized countries and there are ample facilities available. The principal training effort however is required at a variety of other levels which can best be done within Africa itself, with pooling of resources and co-operation among countries. Some of this can be done through short-term courses promoted both by the UN regional technical assistance programme for Africa and bilateral channels, but in the main it will be necessary either to expand facilities of existing institutions or create new ones.

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<sup>1/</sup> See for example "Industrial Research in the East African Sub-region  
E/CN.14/INR/94.



Here again much is being done and more can be done by the UN Special Fund.

13. There remains the largely untapped field of industrial promotion including the crucial problem of project development and the training of Africans to carry out for themselves their own evaluation of projects. The first step is to recognize the stages in the sequence of project development: the preliminary study; the investigation of feasibility which in turn falls into three separate parts: a technical requirements study, a technical feasibility study, and an economic feasibility study; and finally, the engineering studies and establishment of financial requirements and structure up to the point where invitations to tender may be sent out. A country cannot be said to be genuinely industrialized until it is in a position to determine in detail its own industrial fate. In the sequence of project development most of the vital steps are not in the hands of Africans, but of foreigners. Dependence is almost complete in the case of the technical requirements study and the final phase of engineering studies. It is partial and sometimes almost complete, depending on the country, in the case of technical and economic feasibility analysis. Consequently, parallel with the process of actual project development in all its phases, a massive effort is required immediately to train Africans in all aspects of the process.

14. As pointed out above the Special Fund has recently set up such a centre in Tanzania and it is known that consideration is being given to the establishment of similar centres in Uganda and Zambia. Such functions are also carried out by the Industrial Research Institute set up by the Special Fund in Sudan. There is an adequate network of national institutions for this kind of work in North Africa and a project seems likely to be approved shortly by the Special Fund to supplement the national arrangements by the creation of an industrial development centre for the four Maghreb countries to be located in Tripoli (Libya). In most of the rest of Africa there is a serious need for similar arrangements. In Central Africa modest national

arrangements have been started or are under consideration<sup>1/</sup> and consideration may also be given to the establishment of a sub-regional centre to supplement the national arrangements (as in the Maghreb) working closely with the UDEAC.

15. If this brief sketch of the main requirements for assistance in the industrial field (other than financing) is accepted it would seem possible to set out more coherent principles, clarifying the respective rôles of different agencies in a position to provide assistance.

Thus:

- (1) The main burden of carrying out feasibility and engineering studies will have to be borne by the bilateral donor countries during the period when African countries are establishing their own machinery and training appropriate personnel, working of course with the nucleus of Africans already fully cognizant of these problems. At the same time however it would seem that the time has arrived for the UN Special Fund to devote a larger share of its resources to pre-investment work of this kind;
- (2) The main contribution from the UN family in the establishment of research and industrial promotion institutions should be carried by the UN Special Fund;
- (3) The development of training at all levels, whether through short-term courses or through the development or establishment of new institutions, should be shared by the technical assistance programmes of the UN family (mainly UNESCO and ILO), by the UN Special Fund and, it is hoped on an increasing scale, by contributions on the part of donor countries. The short-term courses could be partly financed, as is at present the case, by the African regional technical assistance programme, but there would seem to be increasing scope for contributions by bilateral donors and by universities both in Africa and outside;

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<sup>1/</sup> See Report of the ECA Mission on Economic Co-operation in Central Africa (to be published).

(4) There remains the technical assistance programme proper, i.e. the provision of experts for periods of one or two years. It is in this area in particular, at least so far as the UN programme is concerned that there would seem to be a real need for further clarification of the principles on which requests should be made and granted. It is difficult to resist the conclusion that at present experts are sent to individual countries (at of course their own request) to tackle sometimes specific, sometimes general, sometimes isolated problems without reference to a clear-cut over-all strategy of development and also without reference to the problems of neighbouring countries with whom steps have been launched to co-ordinate development plans and particularly industrial development programmes. It is clear that the UN effort in this field is very limited. It is also evident from the foregoing that there are a wide range of activities which cannot appropriately be carried out by the UN technical assistance programme. Thus, individual UN experts, however able and experienced, are not in a position to carry out comprehensive economic studies, still less feasibility studies, nor are they equipped to make a significant contribution to the improvement of efficiency at the factory level, save on a sporadic basis. Furthermore, the resources available for technical assistance in industry under the UN programme, even though they should be and are likely to be substantially increased, are bound to remain very limited in relation to other programmes; there is therefore the more need for using these resources effectively. It is suggested that the following points deserve full discussion:

- (1) The programming of technical assistance in Africa in the industrial field would be greatly improved if there were real machinery for regular co-ordination of the activities of the Economic Commission for Africa (especially its Industry Division and its Regional Advisers), the Centre

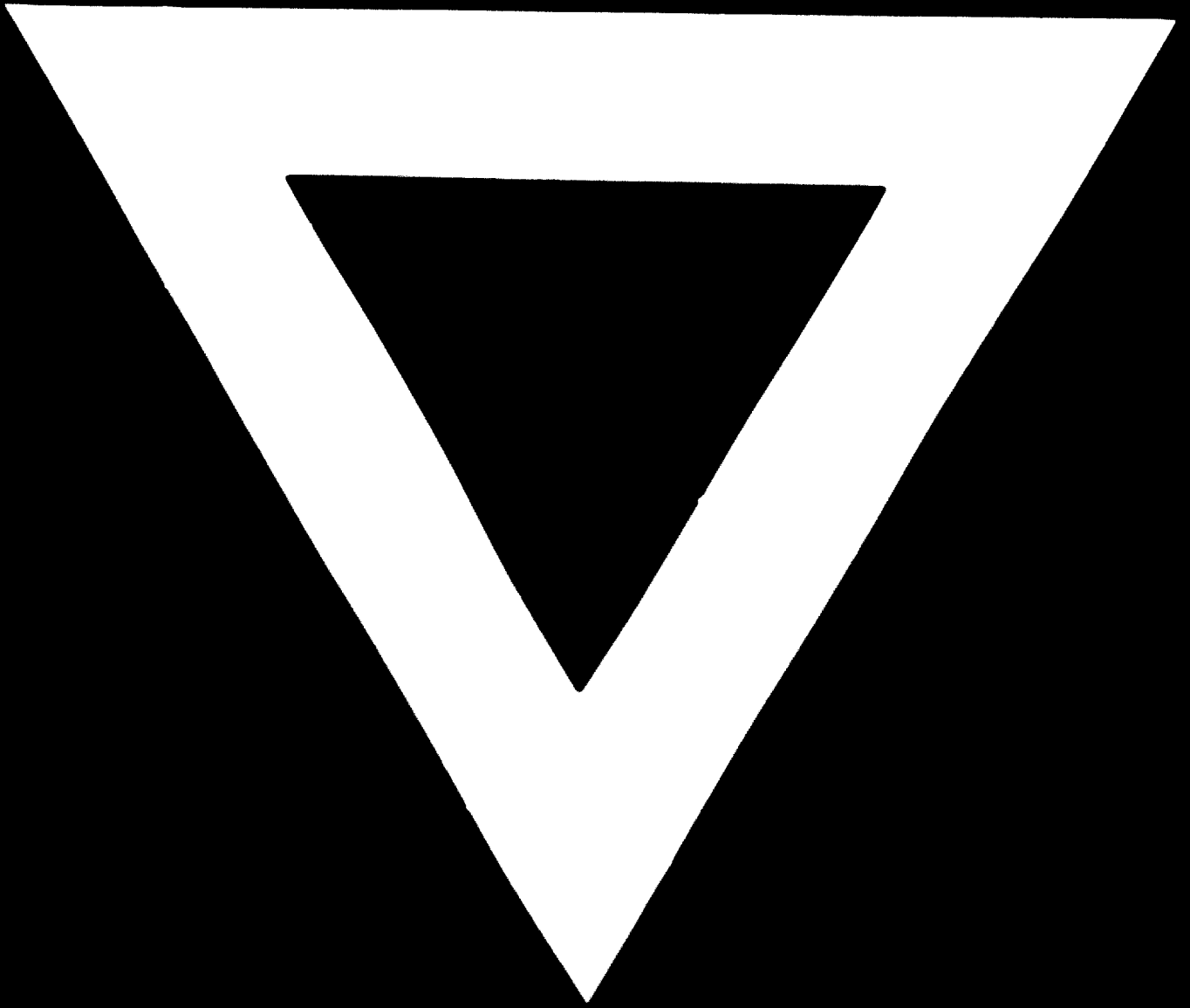
for Industrial Development (including its inter-Regional Advisers), BTAO, the United Nations Special Fund and the Specialized Agencies. Furthermore, given the evolving and increasingly detailed strategy of economic development (and in particular industrial development) of the ECA, the technical assistance programme should primarily grow out of these policies and detailed programmes; co-ordination of the UN family programmes with those of the bilateral agencies is a more complex question requiring a different kind of machinery, to which more thought should be given;

- (ii) Much of the industrial development programme of the ECA is based on sub-regional co-ordination and ways and means should be found of adjusting the requests for and the provision of technical assistance to this approach;
- (iii) It would seem that the programme of technical assistance in the industrial field has been more effective in the Latin American region than in other developing areas, and this appears to be partly due to the rôle of the inter-American Development Bank. A conclusion is that the African Development Bank should be encouraged as early as possible to assume a similar rôle in Africa;
- (iv) As sub-regional arrangements for applied research and industrial promotion develop it would seem useful for this machinery to play a part in the programming and execution of technical assistance projects;
- (v) A major rôle could be played by United Nations technical assistance, in co-operation with Specialized Agencies, in advising on training in management, entrepreneurship and project evaluation;

- (vi) In the next two or three years at any rate one of the most effective contributions can be made by the sending of experts to advise governments on how to strengthen their own machinery in the formulation of industrial policy, industrial programming and the establishment of institutions for the promotion of industrial development including Ministries of Industry, Industrial Development Corporations, Development Banks, industrial estates and above all industrial advisory and promotion machinery, particularly in the field of project advisory services. These experts would then be able to play a key part in drawing in the other machinery available and referred to in this paper, particularly the UN Special Fund and the bilateral aid programmes.

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