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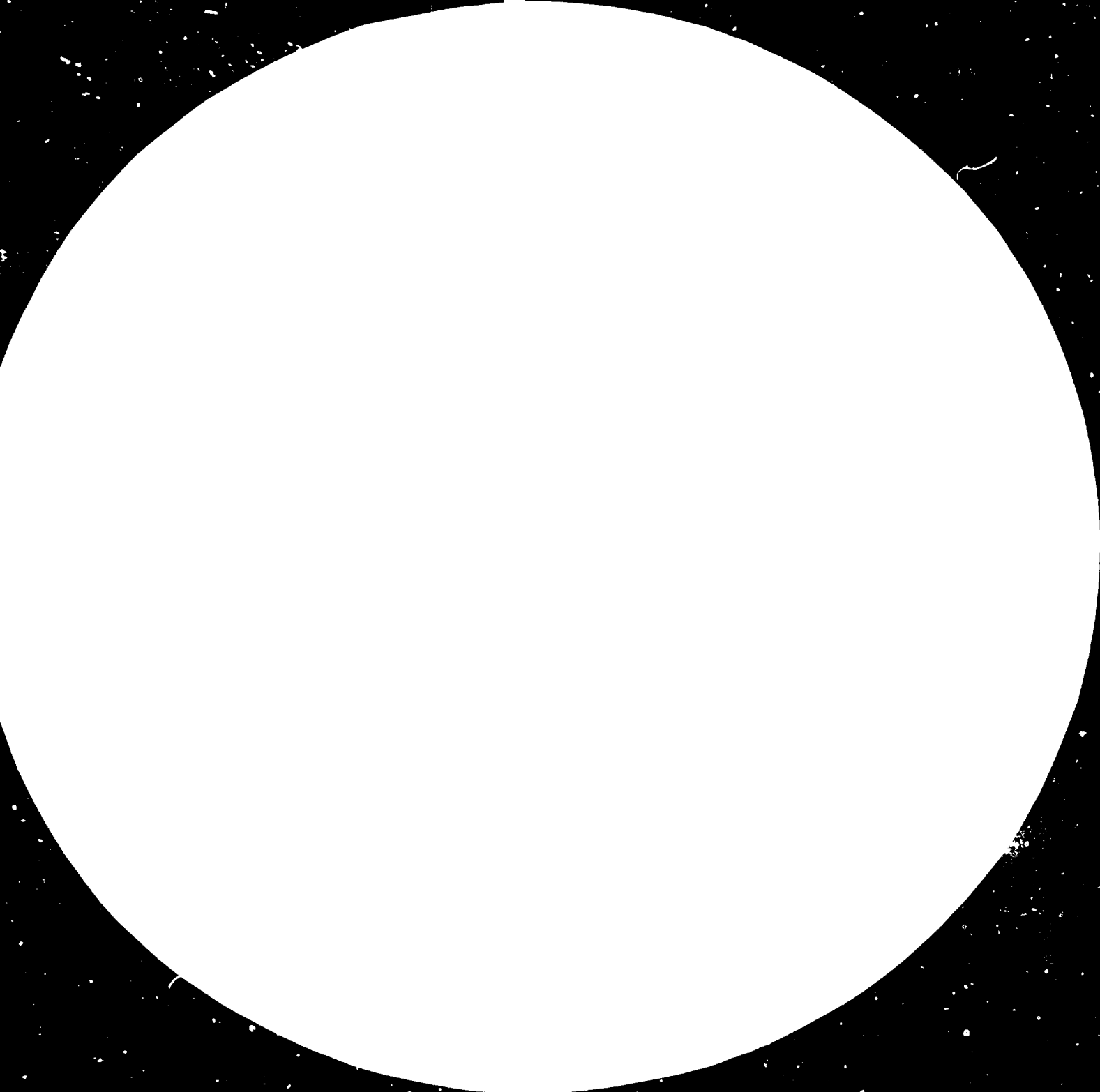
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THE ROLE OF
EXTERNAL ASSISTANCE IN AFRICAN
TECNOLOGICAL DEVELOPMENT: POTENTIAL AND LIMITATIONS *

prepared by
the secretariat of UNIDO

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EXTERNAL ASSISTANCE OPERATIONS

1. This document is primarily concerned with the role of external assistance in the development of technological capabilities in Africa. As such, it does not deal with the wide variety of external assistance for other specific or general purposes. However, it will be necessary to touch upon some fundamental issues in the planning and execution of external assistance programmes, as well as to look into the industrial technology component or implications of external assistance programmes not explicitly meant for this purpose.
2. Unlike technology- and capital-transfer operations which have been extensively analysed and debated by both sides of such transactions, external assistance has yet to be analysed in depth and the positive and negative aspects of its operations revealed particularly in regard to its impact on technological development. On the donor side, routine evaluation has been carried out by several donors for some time past. Furthermore, there is a growing interest among some donor countries for carrying out a deeper and more thorough analysis of past experience in external assistance operations. On the recipient side, some developing countries, including one or two African countries, are beginning to look into the matter and are co-operating in such in-depth evaluation exercises. Yet, on the whole it may be true to say that most recipients have yet to assess their experience with external assistance.
3. It is hoped that a discussion of the role of external assistance will be the prelude to intensive analyses in Africa of the manner in which these operations have been conducted in the past, and to the formulation of a clear strategy by each African country in negotiating and implementing external assistance programmes, particularly in the field of industrial technology.
4. The sources of external assistance are well-known. It comes inter alia from international agencies; regional groupings of donors, for example the European Economic Community; donor countries; private sources (firms, voluntary agencies) as well as from non-governmental organizations. Africa today receives external assistance from a large number of such sources. There is no well-documented record of the amount of such assistance over a specific period of time, or of its types, objectives or sectors

for which it was given. Whatever information which can be pieced together comes from the donors, for example, UN agencies, programmes and funds; organizations such as the Organization for Economic Co-operation and Development and the European Economic Community, governments or non-governmental organizations. It is, however, true to say that external assistance has played an important role in the overall development of African countries and has helped progress in a number of areas and that more assistance is needed.

5. The modes of providing external assistance need not be dwelt upon in great detail here, since they too are now well-known. It would, however, be useful to distinguish between the three main types which reflect the asymmetry between the donor and the recipient and which broadly cover the whole spectrum of current operations. At one end of the scale, there is the straightforward grant which meets an immediate need and which entails the minimal involvement of the recipient in implementation. At the other extreme, there are the co-operative programmes in which two partners share the responsibility for implementation and where disparities between their involvement are not pronounced. In between, there is the assistance programme where the input from the donor helps to energize or enhance indigenous capability which has reached a minimum threshold of viability.

6. In discussing the role of technical assistance in strengthening industrial technology capabilities in a recipient country, the impact of other financial or technological transactions involving an "aid" component, tied or untied, grant, soft loan, credit facilities etc. on indigenous technological capabilities will have to be taken into consideration. These are important components in the recipient country's "implicit" technology policy and could well inhibit, even though un-intentionally, the development of national technological capabilities.^{1/}

7. Finally, there is sometimes a marked failure on the part of the recipient country to assess accurately the total cost it is incurring in the implementation of external assistance in any of the three main categories outlined in para. 5. There is a rather naive assumption in this case that there is "something for nothing". It is now becoming more and more realized that this is far from being the case and that the real cost to the recipient is by no means insignificant. This does not in any way

^{1/} See Action in the Field of Technology and Planning in Africa (ID/WG 332/1) prepared for this Symposium.

belittle the contribution or need for external assistance. It is a reminder that unless the cost is reckoned by the recipient, external assistance will not fulfill its objectives and might even have an adverse effect.

AFRICAN EXPERIENCE WITH EXTERNAL ASSISTANCE

8. When colonial rule ended in Africa, most countries had a minimal cadre of educated Africans who could take over the main administration and technical responsibilities of an independent national government.^{2/} The first wave of technical assistance took the form of hastily-prepared "technical aid programmes" which entailed sending African nationals for education and training in the ex-colonial countries. These were, by necessity, service-oriented arrangements that had little to do with the productive sector of the economy. As the administrative and service sector expanded from the capital to the rural periphery, the need for more administrative cadres became even more pressing. Thus, educational facilities were expanded at the primary and secondary levels and universities were established. These followed the established patterns set during the colonial period and were modelled on their educational establishments. In particular, most university curricula seem to have been designed to educate the élite of the administrative and political establishment. Over two thirds of university students in Africa were studying law and the humanities.^{3/} The few scientists and engineers were increasingly deployed in the service and administrative sector of the economy. Thus technological capability in most African countries was not developed to a great extent. This has, no doubt contributed significantly to the problem of technological dependence in Africa.

9. External assistance in Africa has also gone into other fields and sectors of the economies of the African countries, for example in building infrastructures, in agriculture, health and education. Recently most donors have tended to adopt a policy based on a "basic needs" approach and to order the priorities of their assistance to African countries on this basis. Natural disasters, particularly severe drought, have diverted

^{2/} See Industrial Technology Manpower in Africa (ID/WG.332/5) prepared for this Symposium.

^{3/} Ibid.

considerable resources to the alleviation of immediate large-scale sufferings and dangers. While such assistance has been valuable, limited external assistance in developing technological capabilities ranged from the construction of buildings, to the supply of equipment and books, the granting of scholarships and the services of experts. Although the number of people with local and overseas training continues to rise over the years and several science and technology institutions have been set up with external assistance components, this does not seem to have contributed significantly, so far, in the key areas of industrial technology.^{4/} A variety of factors have contributed to this state of affairs. Some of these relate to the manner in which the role of external assistance has been conceived, either by the donor or the recipient, while others relate to the development strategy of the country as a whole and the role envisaged for technology imports from the industrialized countries. There are as yet not many examples in Africa of analyses of the impact of external assistance on developing the technological capabilities of the recipient country. The general impression, based on evaluations of donor countries and on the present clearer understanding of the problem of building indigenous technological capabilities, is that external assistance has mainly concentrated on "transferring" rather than on "developing" technology. This is understandable and in no way denigrates its role. But in doing so, emphasis has been placed on the transfer of embodied technology, in the form of plant and equipment, rather than technological software and know-how. The equipment and products involved were, by necessity, those of the donor country and not those best suited to the needs of the recipient. In general, the technology transferred and its products has not always been appropriate. This has no doubt produced quick results from the point of view of socio-economic improvement and growth. It has also meant that the benefits of external assistance were rather short-lived and have not been of a cumulative character. Failure to maintain plant and equipment in working order; shortages of spare parts and raw materials and difficulties of adaptation to local working conditions are well-known causes of reduced benefits.

10. Another essential aspect of external assistance in Africa seems to be that identification of the area and nature of external assistance has been carried out mainly by the donors, rather than by the recipients.

^{4/} See document Industrial Technology Institutions (ID/WG.332/4) prepared for this Symposium.

Although the role of foreign expertise in working out the details of an assistance programme should not be underestimated, it is possible, or even likely, that the donor may not be the best judge of the national goals or orders of priority. In many cases, recipient countries have accepted, just as much as sought, external assistance programmes. While this must have been of some value, the absence of a clear order of national priorities in seeking and accepting external assistance could lead to less than optimum results.

11. External assistance seems to be accepted in some cases in a rather haphazard manner depending on the initiative of some donors or individuals in recipient countries, rather than on a national policy. In many cases assistance programmes are not well co-ordinated at the national level. Assistance programmes from different donors have been known to overlap and to contradict. Few African countries channel all assistance through a central mechanism which co-ordinates it and allocates the human and material resources called for as a counterpart contribution from the recipient.

12. As mentioned earlier there has been in Africa, as in many other parts of the world, no systematic effort to analyse external assistance operations, to monitor them effectively or to assess, with reasonable accuracy, their total cost to the recipient country and to provide resources for the purpose. This is particularly important in Africa in relation to the operations of private donors, whose activities have sometimes reflected a rather static and limited view of appropriateness of technology.

13. There seems to have been very limited recourse in Africa to external assistance from other African or third world countries, either in the hardware or the software form. While it may be understandable in the former, the full potentialities of the latter do not seem to have been fully utilized. Education and training of personnel in other developing countries, as well as the exchange of information on technological development, in general, and the role of external assistance, in particular, could bring immediate benefits to Africa in building its technological capabilities.

A FRAMEWORK FOR ACTION

14. In outlining a suitable framework for action by the African countries for defining the role of external assistance in developing industrial technology it should always be remembered that one of the declared objectives of Africa is to achieve collective self-reliance in the field of industrial technology. The basic criterion for judging a specific programme of external assistance should thus be its contribution to the fulfilment of this goal. Within this general orientation, more specific and detailed criteria have to be developed.

A. Evaluation of Past Experience with External Assistance

15. It is high time African countries carried out a comprehensive and systematic analysis of their own experience with external assistance as a whole and in the field of technological development in particular. It is clear that assistance in building up a country's own capability to develop and prosper utilizing its own resources, and those from outside, in an optimum manner is far more important in the long run than satisfying an urgent need mainly from foreign resources and in a non-recurrent manner. In-depth analysis of past experience could be carried out in co-operation with some donor countries. UNIDO, and other international and regional organizations, have an important role to play here and may be called upon to support such thorough evaluation in their fields of competence. One particular type of assistance which requires particular attention here is that from private or voluntary sources.

16. Evaluation is best carried out mainly by organizations and individuals not involved in previous or current assistance programmes. What is needed is a fresh outlook and a broad national view of the role of external assistance in national development, unfettered by current practices or accepted views. The experience and views of those involved in assistance operations are of course essential and valuable inputs in such an exercise.

B. Clear Identification of Needs from External Assistance

17. The areas, types and modes of external assistance are by necessity subject to negotiation and approval by both donor and recipient. Effective external assistance necessitates that the recipient have a clearly formulated development strategy, national objectives, policies and plans for implementation

which identify the gaps where external assistance of one form or the other is needed as well as the order of priority for such assistance. It is essential for accomplishing the aims of external assistance that this order of priority is adhered to. Accepting assistance in a low priority area before filling the gaps in the higher priority area cannot contribute to national goals and objectives.

18. The low level in identifying needs that will produce optimum economic, social and technological benefits from external assistance is a reflection of low technological capability. Attempts must be made by African countries to identify priority areas for technological development and to consider the ways in which they can develop abilities to assimilate, adapt and improve technologies of interest to their economic and social progress. The priority sectors have already been identified and approved by the African countries. The priority actions and programmes in developing technological capabilities have been discussed in the working documents. There should now emerge a clear picture of the needs in this field and of their order of priority. With needs identified on the basis of their maximum contribution to national development, sources and forms of external assistance that best match the needs can be approached and programmes negotiated on terms that are mutually beneficial to the recipient as well as the donor. In other words, a country must first and foremost be fully aware of its needs based on a realistic assessment of the internal situation and shop for assistance beneficial to the country on this basis. In the past, projects conceived and implemented on the initiative of donors have tended to run into difficulties in the end. Local participation in project conceptualisation, planning and execution will definitely increase capabilities in recipient nations.

C. Improved Negotiating Capacity in Defining the Terms and Conditions

19. External assistance has been considered a windfall by some recipients in developing countries. Thus the details of offers were not analysed carefully and no serious attempt to negotiate conditions was made. Aid that ties all procurements in the donor country irrespective of their cost competitiveness or external assistance that allocates a significant portion to foreign consultancy and advisors to the exclusion of national expertise may not be in the recipient's best interest. It may prove possible to obtain the advisory and consultancy services from a third world country having adequate experience in the type of work being undertaken. Such arrangements will increase local capacities and help build stronger capabilities in the third world country whose advisors and consultants have been hired to do

the job. Negotiating skills are in themselves not enough if the direction and purpose of technology activities are unclear and are stated in broad terms as has been the case in many countries. It has often been argued that building technological capabilities is a slow and sometimes painful process. Thus the willingness of the donor to participate in the acquisition of skills and "know-how", besides hardware, foreign expertise, or the mere expansion of capacity should be deeply investigated. It is to the mutual advantage of both donor and recipient that the assistance programmes include elements for close monitoring of the performance of acquired plant, equipment and products, for keeping them in good working order and adapting them, if necessary, to suit local conditions or supplies of raw materials. This enhances the image and credibility of the donor at an extra minimal cost, while maximising the benefits to the recipient over the largest possible period of time.

D. Detailed Information on the Donor's Motivations, Strengths and Limitations

20. Sound external assistance should be based on a clear appreciation of the motivations and objectives of the donor. This would define the scope and nature of assistance that could be expected from a donor and that would be in line with the goals and objectives of the recipient. More specifically, the recipient's ability to make a comparative assessment of technologies implies also greater access to information about technologies available from the donor, their strengths and limitations. This is the only sound basis for an effective negotiating capacity on the donor's side. It calls, both for greater flows of information on the political, social, economic, trade and technological standing of the donor country and an ability to analyse this information and to utilize it effectively in negotiating the most mutually advantageous assistance package.^{5/} Needless to say here, that knowledge of and information about the recipient country, which is unfortunately not always comprehensive or up-to-date, is a basic requirement for negotiating good assistance programmes.

E. Increased Emphasis on Software Components

21. The importance of transferring skills and "know-how" has already been emphasized on several occasions. Attempts should be made to extend the scope of external assistance programmes beyond adequate training of nationals to

^{5/} See Action in the Field of Industrial and Technological Information in Africa (ID/WG.332/1) prepared for the Symposium.

involving local consultants and R and D institutions in the design, implementation and development of technology assistance packages. There are already some pioneering examples of joint research and development activities involving individuals and institutions in the donor and recipient countries in co-operative elements of assistance programmes. This could well be a very effective means of developing local expertise and institutions and in linking them in an interactive manner with technological development and production.

F. Co-operation between Third World Countries

22. There is need for countries and institutions in the third world to join forces in order to strengthen their bargaining power and develop their autonomous scientific and technological capabilities and capacities in a spirit of collective self-reliance. Already in some countries co-operation between third world countries has produced very encouraging results. Textile mills, farm implement plants, sugar and bicycle factories designed and fabricated in third world countries have been built in other third world countries. These operations have involved intensive training at the management as well as at medium and low levels of technical skills. Results achieved in foundry and other metal working processes have been particularly impressive. Such co-operative activities need to be promoted.

Concluding Remarks

23. External assistance has played and will continue to play an important role in the technological development of Africa. The interest and determination recently manifested in basing further development on clear and integrated industrial technology policies and plans, the actions and programmes in developing African manpower, institutions and information systems in industrial technology on the basis of at least major policy guidelines and a minimum of integrated technology programmes should lead to a much clearer definition of the needs and priority areas and modes for external assistance.

24. In the absence of carefully documented analysis on external assistance operations in strengthening African technological capabilities, the above comments can only be of a tentative nature. With inputs based on the experience and views of the participants, the Symposium will be taking an important step in formulating a well-defined and positive African strategy in optimizing the benefits of external assistance for technological development and in integrating it effectively with national and regional endeavours in this field.

