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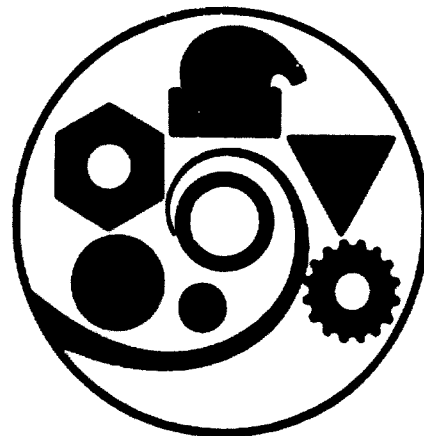
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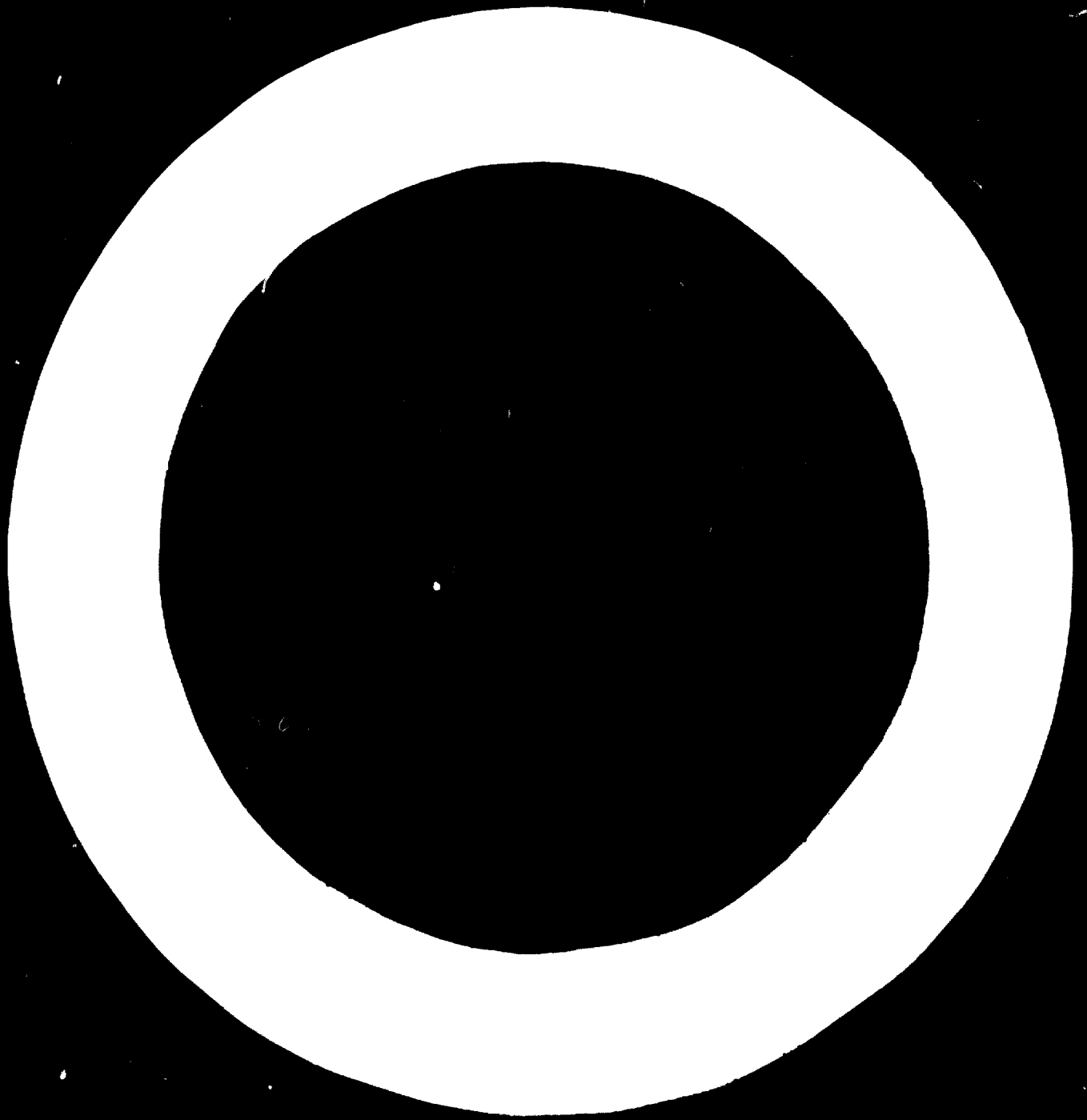
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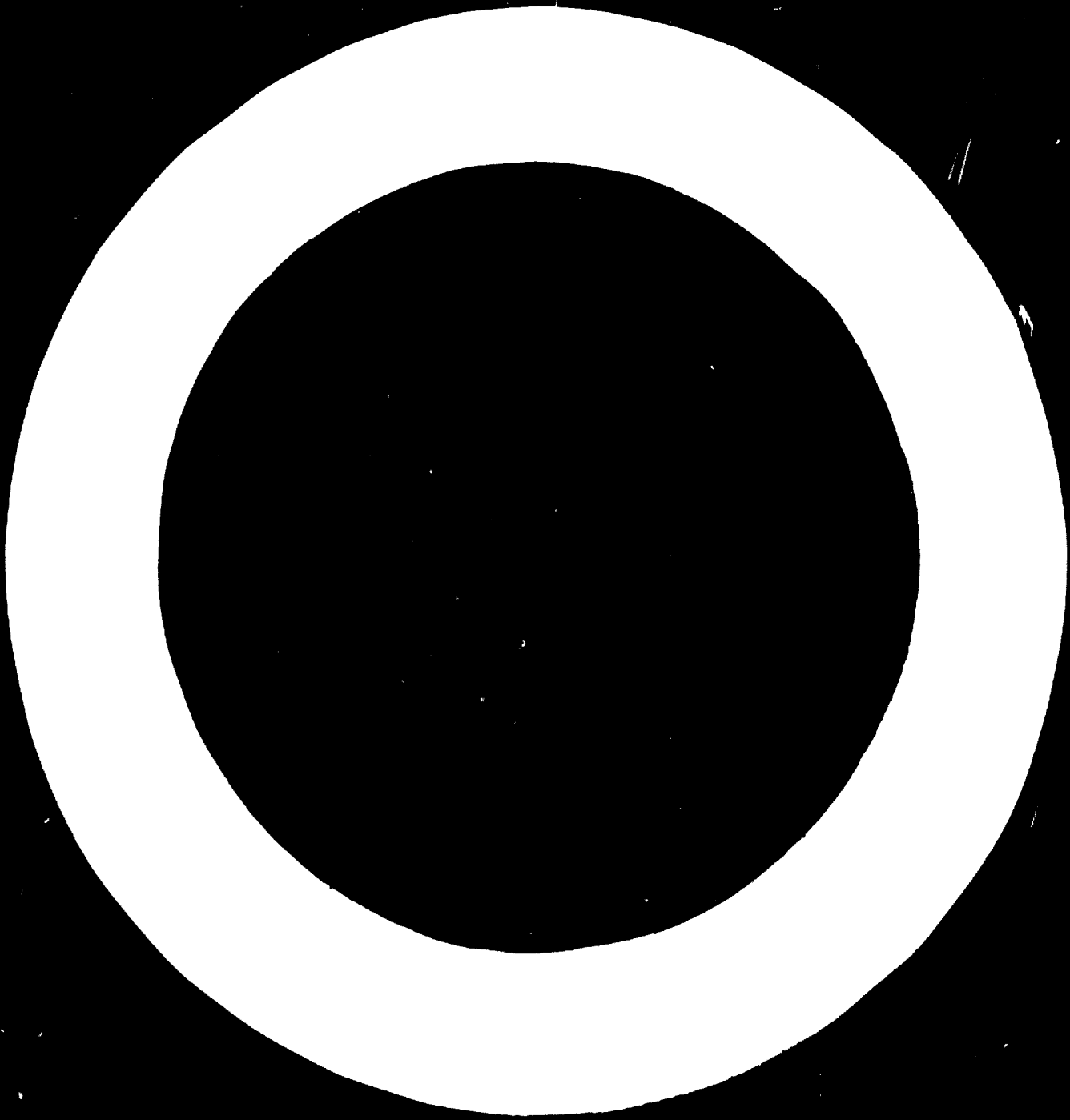
Report of the Symposium



UNITED NATIONS







**REPORT
OF THE SYMPOSIUM
ON INDUSTRIAL DEVELOPMENT
IN AFRICA**

Cairo
27 January to 10 February, 1966

UNITED NATIONS
New York, 1966



NOTE

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Part I

ORGANIZATION AND ATTENDANCE

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1. The Symposium on Industrial Development in Africa met in Cairo, United Arab Republic from 27 January to 9 February 1966, pursuant to General Assembly Resolution 1940(XVIII), Economic and Social Council Resolution 1030(c) (XXXVII) and Resolution 144(VII) adopted by the Economic Commission for Africa at its seventh session.

2. In its resolution 144(VII), the Economic Commission for Africa welcomed the approval by the Economic and Social Council of the convening of the Regional Symposium and recommended that the Symposium devote particular attention to defining the assistance that African countries require from non-African countries in trade, technical assistance, finance and other fields in order to achieve their industrialization and to identify fruitful areas for over-all regional integration in the industrial development of Africa.

3. The Symposium also has as its purpose to examine the problems and prospects of industrial development at the national, sub-regional and regional level and to consider measures for the accelerated development of member countries.

4. The Symposium considered documents prepared by the ECA secretariat and its consultants, by the Centre for Industrial Development, by the International Labour Office, the Food and Agriculture Organization of the United Nations, the World Health Organization and the General Agreement on Tariffs and Trade. The list of documents prepared for the Symposium is attached as annex I.

B. ATTENDANCE

5. The meeting was attended by delegates from the following member countries: Algeria, Cameroon, Chad, Ethiopia, Ghana, Guinea, Kenya, Liberia, Libya, Madagascar, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Togo, Tunisia, United Arab Republic, Uganda, United Republic of Tanzania, Upper Volta and Zambia.

6. Representatives of the following associate members were also present: Equatorial Guinea, France and Spain.

7. The following specialized agencies were represented: International Labour Organisation (ILO), Food and Agriculture Organization of the United Nations (FAO), and World Health Organization (WHO).

8. The Centre for Industrial Development, the General Agreement on Tariffs and Trade, the United Nations Advisory Committee on Science and Technology, the United Nations Conference on Trade and Development and the United Nations Development Programme were also represented.

9. In response to the invitation extended by the ECA, observers from the following inter-governmental organizations also attended: African Development Bank, Afro-Asian Organization for Economic Co-operation, European Economic Community, European Investment Bank, League of Arab States and Organization of African Unity.

10. A number of individual experts in the fields of industry and research also attended the Symposium.

11. A full list of participants is given in annex II to the present report.

C. ELECTION OF OFFICERS

12. The meeting unanimously elected Dr. Mustafa Khalil Chairman of the Symposium, Mr. U. G. Mwila (Zambia) as First Vice-Chairman, Mr. C. Bright (Liberia) as Second Vice-Chairman, and Mr. M. Gabdou (Chad) as Third Vice-Chairman. Tunisia and Kenya were elected Rapporteurs of the Plenary.

D. AGENDA

13. The Symposium examined the revised provisional agenda prepared by the secretariat (E/CN.14/AS/VI/1/Rev.1). After discussion and minor amendments, the agenda was adopted. The text of the agenda is reproduced as annex III.

E. ORGANIZATION OF THE WORK

14. The meeting established two committees of the whole, namely Committee I—dealing with selected aspects of industrial development—and Committee II—dealing with sector studies. The second and third Vice-Chairmen were elected Chairmen of Committee I and Committee II, respectively, the United Arab Republic and Madagascar were elected Rapporteurs of Committee I and Mali and Ghana were elected Rapporteurs of Committee II.

15. The proceedings of Committees I and II and of the Plenary were submitted to the Symposium as reports which were adopted by the Symposium and which are incorporated in the present report.

Part II

ACCOUNT OF PROCEEDINGS

Opening meeting

16. The formal opening of the Symposium took place on 27 January at the Arab League Building and was addressed by H. E. Mustafa Khalil, Deputy Premier for Industry and Mineral Resources of the United Arab Republic on behalf of the President of the UAR, by H. E. Mr. T. J. Mboya, Minister of Economic Planning and Development of Kenya and Chairman of the Commission, by Mr. G. Pognon, Assistant Secretary-General of the Organization of African Unity, on behalf of the Administrative Secretary-General, and by Dr. I. H. Abdel-Rahman, United Nations Commissioner for Industrial Development.¹

17. Dr. Mustafa Khalil, Deputy Prime Minister for Industry, and Mineral Resources of the UAR, inaugurated the Symposium and welcomed the delegates on behalf of the President of the UAR. He described the great efforts in the field of industry in the UAR since the revolution of 1952, in order to diversify the economy and free it from the previous almost complete dependence on agricultural production. International co-operation to ensure prosperity for the whole world was embodied in the UAR Charter. Industry was considered as a creative power and a basic support of natural unity. New scientific developments would open up new opportunities before workers; there was no conflict between modern mechanization and the interests of labour. Most mineral and natural resources have not yet been discovered. Heavy industry should be given particular attention, but local industries must also be established. Consumer industries must be extended to provide employment, save foreign exchange and increase exports. Food industries are of great help in stabilizing the rural economy. The delegates were invited to study the experience of the UAR and the industrial progress made of which some details were given.

18. The African continent, so rich in natural resources, was now emerging with great expectations after long years of retardation. This emergence calls for co-operation among African countries and re-organization of relations between developing countries and the countries with advanced industries in keeping with the recommendations of the Trade and Development Conference held in Geneva in 1964. The UN and its Specialized Agencies should increase their technical and material aid to African countries. In conclusion, Dr. Khalil expressed thanks to the organizations concerned for their successful preparatory work for the Symposium.

19. Mr. Tom Mboya, Chairman of the Economic Commission for Africa, said that the convening of the

Symposium on Industrial Development reflected the radical change in thinking about the economic development of Africa during recent years. Africa's basic problem was to remove widespread poverty and the economic insecurity caused by dependence on the exports of raw materials. Experience had shown that the markets for agricultural products grew relatively slowly and that the terms of trade tended to move against the developing countries. Unless Africa were to build up quickly domestic supplies of industrial products, it would become either increasingly indebted to, and therefore politically dependent on, foreign countries, or would find its programmes undermined by balance of payment difficulties.

20. Reliance on agriculture was not viable as the basis for development policy. On the other hand, there was no contradiction between the development of both the agricultural and industrial sectors. Within the industrial sector, attention was drawn to the importance of heavy industry, capable of producing machines which could produce more machines and thus augment steadily the real capital of a country. Detailed knowledge of Africa's industrial possibilities were being steadily accumulated and it had been shown that through industrialization a complete structural transformation of the African economy was possible by the end of the century and the rapid growth of industry within a much shorter period.

21. Whatever type of industry was being built up the same sort of problems arose: accurate knowledge of natural resources was required; cheap energy had to be obtained from Africa's immense potentialities; new transport links had to be established which would both facilitate and be justified by industrial development. Attention had to be paid to the transfer of technology and applied technological research on African problems, industrial projects had to be fitted into a programme interwoven into national development plans; projects had to be developed in a proper sequence; manpower trained and finance found. Another major consideration underlining the thinking of the ECA on African industrialization, was based on the fact that African development plans had so far been drawn up in isolation from one another. There was of course much scope in all the countries for the creation of small and medium-scale industry to serve national markets but many industries could not be so established without co-operation among groups of countries, to widen markets and take advantage of the economies of scale. In Africa the main problem was not, as in Western Europe, the liberalization of trade but the creation of industries which did not yet exist, by co-ordination of the efforts of groups of countries.

22. The ECA had now carried out comprehensive studies on industrial development possibilities in each of the four sub-regions of Africa. Permanent sub-regional

¹ The texts of all opening statements are reproduced in full as annexes IV to VII.

machinery had been established or was being planned in each of them to carry out industrial studies in greater and greater depth and also actively and regularly to negotiate agreements for joint industrial development. The Maghreb countries had established common institutions. The recent conference held in Lusaka had recommended the establishment of similar institutions for East Africa. Five of the six countries of Central Africa through the Treaty of UDEAC, had established their own permanent institutions and it was hoped to enlarge this machinery at a conference of the sub-regions to be held in April. A meeting of West African countries had been held in Bamako in October 1964 which had paved the way for preliminary agreements on iron and steel and for further work on the whole range of industries, to be discussed at a conference in Niamey during the second half of 1966. It was also hoped that, as a result of this meeting, permanent institutions could be established in West Africa.

23. The phase of preliminary industrial studies would soon be over and it was necessary to move forward to detailed feasibility and engineering studies and to the search for finance. In this context, Africa should work towards establishing its own machinery for the carrying out of feasibility and engineering studies and also its own organs for industrial promotion and advisory services. There was a need now to augment rapidly facilities for training African manpower for industrial development at all levels and to create African institutions where necessary.

24. Massive capital formation was required to carry out the ambitious industrial programme now emerging. More could be obtained from domestic sources yet at the same time there would necessarily be continued recourse to outside help. Arrangements for increasing the scale and improving the terms on which foreign finance should be made available required further study. In this connexion, reference was made to the proposed African Council for Economic Co-operation first mooted at the seventh session of the ECA.

25. The Chairman of the Commission outlined four major points which might be considered by the Symposium. First, the time had come when the basic strategy of industrial development in Africa should be defined, based on the main pillars of co-ordinated development in the four sub-regions as a step towards an eventual all-African approach. Secondly, it would be useful to take stock of the opportunities emerging for co-ordinated industrial development by each of the main sectors of industry. Thirdly, specific recommendations were required on the next steps to be taken to promote industrial development, both at the national and sub-regional level. These recommendations should relate to feasibility and engineering studies, training, transfer of technology and applied research, financing and incentives for industrial development, industrial promotion and institutional arrangements for permanent co-operation. Fourthly, since the Symposium was one of a number of regional meetings to be followed by a world symposium, it was important to define clearly the position Africa should take at that meeting.

26. Reference was made to the argument sometimes put forward in that the problems of industrial programming and the training of manpower were so vast that nothing serious could be done for a long time. This was wholly wrong as was shown by a growing number of specific experiences of African countries. Work recently done by the ECA showed that all the elements were now available for a rapid move forward in the industrialization of Africa.

27. In conclusion it was stressed that Africa could not hope to narrow the gap between the haves and have-nots without accepting fully the urgent need for public policy which would promote a programme of industrialization. Nor was it possible to exert enough pressure on the developed nations and the various agencies under their control unless Africans were committed to co-operate in development planning. The ECA together with the OAU Economic and Social Commission could help to meet this challenge.

28. Mr. G. Pognon, Assistant Secretary-General of the Organization of African Unity conveyed to the Symposium the warm greetings of the Secretary-General. He said that if Africa were to consolidate and maintain her political independence, it must win the battle for economic development. This was the main pre-occupation of the ECA and the OAU; the very convening of the Symposium was an important event since it fulfilled all the conditions for achieving the major objects determined by common agreement between the two organizations. The OAU had set up the structure and defined the working methods which could overcome the political obstacles to agreements among African states necessary for economic development. It was the task of the Symposium to define in concrete terms the way forward to industrialization.

29. This had necessarily been hampered in the colonial period but now African countries were in a position to deploy their vast resources and take advantage of the complementary nature of their economies. It was also the task of the Symposium to work out a new approach to outside help which would be mutually advantageous both to the advanced countries and to Africa. He wished the Symposium every success in giving positive satisfaction to the real hopes the peoples of Africa were founding upon it.

30. Dr. I. H. Abdel-Rahman, United Nations Commissioner for Industrial Development, welcomed the participants on behalf of the Secretary-General of the United Nations. He thanked the Government of the UAR for the excellent arrangements made for the Symposium, and ECA for its documents which would be of value even beyond the immediate purposes of the Symposium. Since the Symposium was one of a number of regional meetings it would enable the African countries to compare their experiences with those of other developing regions. Since these meetings were to prepare for an international Symposium, many of the recommendations made would depend for their implementation on full co-operation with the advanced countries and financing institutions. The General Assembly had recently established the United Nations Organization for Industrial Development. Details were given concerning this new Organization and particularly concerning the new special

industrial services to be rendered by the United Nations Organization within the framework of the United Nations Development Programme and for which special voluntary contributions of several million dollars had already been received shortly after their announcement. A new orientation will be given to the industrialization work of the United Nations based upon the more intimate and complex relations between pre-investment work and the actual investment which was characteristic of industry as compared with other sectors.

31. The promotion of new industrial projects was only one element of the work to be done, although an essential element. The efficiency of operation of both old and new factories, full utilization of existing capacities, the development of integrated system, the development of the institutions, policies, and the raising of human and technological resources to a higher level, were among other essential elements. The United Nations Centre for Industrial Development (the future United Nations Organization for Industrial Development) would try to create the foundations, in training, technology, policies and institutions from which industrialization arises, and which make it effective and cumulative. Regional and sub-regional co-operation has an important place in this wider picture. The issues before the Symposium embraced matters that were essentially national, others multi-national or sub-regional, others regional, and others calling for even wider international co-operation, either bilateral or multilateral. The recommendations of the Symposium will be carefully considered in many quarters, and will be an important element in determining the nature and action of the International Symposium. But it was also to be hoped that the Symposium would prove of value to the individual African countries which must make the real decision.

General debate

(Agenda item 4)

A. ACTIVITIES IN THE FIELD OF INDUSTRIAL DEVELOPMENT

32. The secretariat stated that the work programme and basic strategy in the field of industry were determined by the sessions of the Economic Commission for Africa, and its Standing Committee on Industry and Natural Resources,² and consisted of four phases, namely:

- (a) Industrial missions to various countries;
- (b) Research and documentation;
- (c) Pre-feasibility studies, and
- (d) Identification of industrial projects, and feasibility and engineering studies.

The first two phases had been completed and the secretariat was now concentrating on the third and fourth phases. The programme includes national, multi-national

² In accordance with resolution 128(VII) adopted by the seventh session of the Economic Commission for Africa, the Standing Committee on Industry and Natural Resources has been replaced by the Working Party on Industry and Natural Resources.

and regional projects. The emphasis of the work programme is on co-operation among African countries or groups of countries in order to accelerate industrial development. It was, however, pointed out that multi-national co-operation at the sub-regional level among neighbouring countries was not rigid, but a step towards continental co-operation.

33. In the realization that industry was only one sector of the over-all economy, inter-industry balances were being drawn up on national, multi-national and regional basis in order to establish, *inter alia*, the direct and indirect effects of the industrial programme envisaged on trade, manpower, balance of payments, production of industrial raw materials, agriculture, rate of economic development, etc.

34. At the Sub-regional Meeting on Economic Co-operation in East Africa, held in Lusaka in October 1965, the programme proposed for the period 1965-1975 covered some 6,000 products in 20 branches of industry. The pre-feasibility studies prepared covered location, capacity, employment, investment, and inter-industry relationships. The Conference recommended the establishment of an Interim Council of Ministers to consider the various proposals and by formal treaty ratify the setting-up of an Economic Community of Eastern Africa to implement, *inter alia*, industrial co-ordination.

35. In West Africa, a conference was held in Bamako in 1964. Work was now proceeding in the whole field of industry in preparation for the conference to be held in Niamey before the end of 1966. As for East Africa, the studies being prepared include types of plants, capacity, location, etc. A co-ordinated industrial programme for the sub-region for 1966-1976 and 1976-1980 is being drawn up. An interim Expert Committee on Iron and Steel was established in 1965 as a follow-up to the Bamako conference and it was hoped that a West African Iron and Steel Authority would soon come into being to co-ordinate the iron and steel industry in the sub-region.

36. An industrial co-ordination mission visited North Africa in December 1963 and the four countries of the Maghreb have since met several times and institutions for economic co-operation have been established. Commissions on industry, transport, agriculture, posts and telegraphs, and national accounts have been set up. A comprehensive study on present, past and prospective demand for hundreds of industrial products is being undertaken. This will be supplemented by an inter-industry balance for North Africa.

37. A mission of experts visited the Central African sub-region in April/May 1965 and prepared a detailed study of the economic structure of the sub-region, including natural resources, transport, energy, industry and agriculture. It is estimated that industrial output in terms of value added should increase from US\$430 million in 1965 to US\$1050 million in 1975. The report of the mission will be submitted to a sub-regional conference to be held in April 1966. It is hoped that machinery for industrial co-ordination will be established at the meeting.

38. Parallel with the sub-regional activities an over-all continental industry programme is being drawn up. It is expected that this will be completed by the end of 1966.

B. INSTITUTIONS FOR ECONOMIC CO-OPERATION

39. The secretariat introduced the document on institutional arrangements, Document E/CN.14/AS/VI/5. The initiatives thus far taken in economic co-operation were briefly surveyed, and the progress realized in the Eastern, Central and North African sub-regions was noted. In particular, the co-operation achieved within such organs as the UDEAC, the co-operation achieved within such organs as the UDEAC, Maghreb, Senegal River Basin countries and EACSO was encouraging in the development of a framework of sub-regional co-operation. It was recalled that the proposals for multi-national groupings arose out of the desire of governments to find a formula for economic co-operation with the objective of accelerating economic growth.

40. The arguments for sub-regional co-operation and the need to set up an institutional framework are reflected in several resolutions and recommendations of governments at past meetings. A system of intergovernmental consultation would safeguard the interests of individual governments and could eliminate the hazards of prejudicial and preconceived feasibility reports in the absence of consultation. Many aspects of industrialization problems could best be scrutinized at the sub-regional level. The experience of other regions showed that in the course of industrialization, protectionist devices once established might prove difficult to correct. Africa should benefit from this experience and should choose carefully the degree of protection, so that infant industries do not become a permanent feature of the continent.

41. Inter-governmental consultation arrangements would be an effective instrument for reducing the cost of foreign capital. Capital suppliers would then be in a better position to ascertain defined priorities of needs and the element of risk could be reduced.

42. A process of regular consultation would also reduce the degree of deviation from optimum solutions and should serve to make the location of industries more rational. National economic planning could be harmonized for mutual benefit and within a framework of complementarity. A far better organized co-operational structure than had been realized thus far should be set up.

43. Delegates commented widely on the different aspects of economic co-operation, and stressed its vital importance to the economic development of the continent. They agreed that the dynamic development of Africa would best be realized through the harmonization of efforts within a framework of sub-regional co-operation and that there should be no delay in setting up effective consultation machinery to promote sub-regional co-operation. The initiatives already taken by ECA and OAU in promoting sub-regional co-operation were welcomed. In so far as the proposal for the establishment of a permanent secretariat for continental co-operation was concerned, it was pointed out that whatever institutional arrangement is decided upon, it should not duplicate the work of OAU, ECA and ADB.

C. COUNTRY STATEMENTS

44. Delegates³ presented country reports on prospects and problems of industrialization in their respective countries.

45. Delegates drew attention to the over-all and specific problems of industrialization. These should be viewed in the light of a balanced development of agriculture and industry. It was pointed out that the economies of many countries in Africa are based on agriculture. Consequently, improved productivity in this field combined with industrialization, would lead to the desired economic progress. In this context, high priority should be given to agro-allied industries and the work of FAO in agricultural, fishery, and forest-based industries could play an essential and needed role in initiating industrialization.

46. The advantage of economic co-operation and industrial co-ordination were emphasized by several delegates. Such co-operation would permit economies of scale in major industries and provide the necessary market for economically-sized units. The sub-regional or multi-national approach was therefore considered the logical solution to overcome small national markets and other similar bottlenecks. Caution was at the same time expressed that the groundwork for sub-regional or multi-national co-operation should also include detailed studies of resources of individual countries and development of infrastructure, particularly of transport and communication between countries. Furthermore, it was noted that however able and unremitting the efforts towards sub-regional or regional economic integration from the technical standpoint, results would always be ephemeral unless a constant minimum of political stimulus is provided. In this respect, a very important permanent part can be played by the OAU and other smaller political organizations already existing or yet to be established.

47. Finally, it was suggested that co-operation in general planning and the establishment of secretariats well-equipped both in quality and in number at the level of the existing sub-regional economic institutions, or of those yet to be established, would help to improve and accelerate industrial integration.

48. The need for the evaluation of natural resources available on the continent, in order to assess anticipated national progress, was emphasized, and the suggestion was made that surveys of these resources should be undertaken through all forms of direct aid from the United Nations and specialized agencies and developed countries.

49. It was pointed out that considerable capital is indispensable to develop infrastructure, both before and during the industrial development effort. This means that expenditure (capital and operational) directly or indirectly involved in carrying out industrial projects, is comparatively greater in the underdeveloped countries than in the developed countries. In view of this fact, which is now an admitted handicap, it was proposed that the conditions

³ These country reports were circulated at the meeting. The report summarizes the substantive points raised at the general debate. Country reports which, because of late submission, could not be circulated during the meeting, will be sent to member States by the ECA secretariat.

of foreign financing should be improved as regards the duration, interest rate and volume of loans and their proportion in relation to the standards now required for national participation in project financing. At the same time, the importance of mobilizing domestic financial resources was stressed. Among the means by which some governments increased the availability of domestic sources of financing were foreign currency savings in earnings from exports, increasing government revenue through a carefully elaborated tax structure and through the reorganization of administrative, institutional and banking establishments. In this context, the important role that a dynamic development bank could play in promoting industrialization was noted.

50. To encourage financial policies tending to release accumulated national resources with a view to development, it was proposed that the improvement of foreign financing conditions, as previously suggested, should be still more pronounced in favour of countries applying such policies.

51. The importance of the part played by internal resources was stressed, and the various ways of mobilizing such resources were briefly reviewed.

52. The uncertainty of gains in foreign currency was stressed, due to steady deterioration in the terms of trade, fluctuations in prices of basic products, gradual or sudden loss of certain traditional outlets and reluctance on the part of developed countries to buy industrial products from under-developed countries, especially processed agricultural products. In this field the problems and solutions proposed should be carefully reviewed taking into account the United Nations Conference on Trade and Development held in Geneva in 1964.

53. Several delegates recorded the actions taken by their governments to attract external financing. Usually the economic development plans elaborated laid stress on the significant participation of the private sector. Incentives in various forms were offered such as the right to repatriate profits as well as the original capital outlay including interest, tax holidays, fair and adequate compensation in the event of nationalization, and protective tariffs. Parallel to these, governments were also committed to a policy of promoting local entrepreneurship on the one hand and efficient industries on the other.

54. Concerning the general preliminary conditions of economic development, and more particularly industrial development, thorough structural reforms in organizing production and distribution systems were in many cases needed. The development of a State or para-State sector illustrated this need, in connexion with which the United Nations recently had made a critical survey covering some twenty Member States.

55. It was also noted that the implementation of structural reforms led to international difficulties in the past, especially with the former colonial powers, even though they were not in principle aimed against non-national interests.

56. To avoid such crises, the idea of a charter of economic decolonization was suggested. This would make possible a definition of the general conditions and operational stages of new economic relationships, in particular,

and would provide for fresh co-operation, fairer, better-balanced, and better adapted to the new political conditions; finally, more fruitful for all concerned. Such a charter could be discussed and defined at the International Symposium on Industrial Development.

57. The need to overcome the bottlenecks presented by the lack of adequate trained manpower was repeatedly referred to by delegates. Long-term planning of manpower requirements and organizing educational institutions to cope with these requirements should be the primary concern of government policies and actions. In this connexion, the steps taken by a number of governments in training manpower through the expansion of educational establishments were noted, and a plea was made to the United Nations and donor countries for assistance to tackle the problems more effectively.

58. The problem of selection of industrial projects to secure maximum economic benefits should also be examined critically. While there was wide scope for import substitution industries, the unchallenged application of the principle might prove disappointing in certain cases. Consumer goods industries, for example, often have a low value added component. Substitution industries should not give rise to an unfavourable balance of trade, which they tend to do when they involve import of machinery and equipment, raw materials and components, and in addition they might need protracted tariff protection for their continued operation. Other criteria must also be analyzed carefully in addition, such as the percentage of value added, labour-capital ratios and the potentials of the project in the diversification of the economy.

59. Delegates noted the experiences of individual countries in industrialization. The contrast of the industrial picture before and after independence was described by several delegates, and it was noted that the current major preoccupation of the new governments was to give a new and balanced orientation to the over-all economy. It was stressed that the preponderant role of agriculture in the economy, and especially the reliance of countries on specific commodities was something which must be corrected within the shortest possible time. Industrialization was one means to this end.

60. At the same time it was pointed out that the aims of industrialization might be jeopardized by a proliferation of industries. The path of industrialization must therefore be charted within an all-embracing framework within which all the implications could be properly assessed and allowed for. It was pointed out that the haphazard implementation of industrial projects, especially of those which would be under-utilized or subsidized by the State, might not be conducive to the realization of the goal of industrial development.

61. The attention of delegates was again drawn to the prerequisites for industrialization, and some of the major steps that developing countries should take were outlined. These included: (a) exhaustive survey of the country's natural resources, (b) the elaboration of an economic development plan with a clear definition of the role of the industrial sector, (c) the drawing up of feasibility studies, (d) training of manpower at all levels, especially through apprenticeship schemes, (e) exchange of information and

visits among countries, (f) planning multi-national industrial complexes, which would attract external financing, (g) the rapid establishment of the proposed Intra-African Economic Co-operation Council, (h) creation of a favourable environment for the promotion of economic and, in particular, industrial development. Financial resources available at the United Nations for surveys and studies were noted.

D. STATEMENTS BY SPECIALIZED AGENCIES AND OTHER INTERNATIONAL ORGANIZATIONS

62. The representative of FAO drew attention to the importance of industries processing agricultural, fishery and forest products, as well as to the complex of industries serving agriculture through the provision of inputs such as fertilizers, machinery, implements, fishing gear, etc. He outlined the work of FAO in this regard and the assistance it provided in the identification and elaboration of suitable projects, training, pre-investment, surveys, feasibility studies and pilot projects in the field of agricultural industrialization. This FAO assistance was available not only through the United Nations Development Programme, but also the FAO/IBRD Co-operative Programme that had been established in April 1965 and the Freedom from Hunger Campaign.

63. The representative of the African Development Bank (ADB) drew the attention of delegates to the fundamental aim of the ADB which was to contribute to concrete actions that would further the economic development of the countries of Africa. He pointed out that the effective functioning of intra-African co-operation would facilitate ADB assistance and welcomed the progress so far achieved in inter-state and sub-regional co-operation. Nevertheless, the horizon for co-operation should not be limited to the sub-regional level only. The prospects offered by regional co-operation should not be overlooked. Sub-regional and regional co-operation must proceed hand in hand since they are complementary, and since the gains made at the sub-regional level would be clearly seen and appreciated through the realization of harmonization at the regional level. The creation of ADB itself was an achievement which opened up wide scope for continental co-operation. It would not be unreasonable to aim for other organisms on a continental basis and the representative concluded by calling on the Pan-African organizations—OAU, ECA and ADB—to co-ordinate and redouble their efforts to extend the field of co-operation to the continental scale.

64. The representative of the United Nations Advisory Committee on Science and Technology drew the attention of delegates to the role of science and technology in industrialization. He pointed out that in the developed countries, technology was advancing at a rapid rate. Developing countries should select technologies appropriate to their specific requirements, since the new technologies of the developed countries could not always be efficiently and economically applied under the conditions of the developing countries. Delegates were informed that the role of the Advisory Committee was to assist developing countries in adapting technologies to their needs, and attention was drawn to the importance of continuously

improving production methods through applied research, if markets were not to be lost. Governments, it was suggested, should mobilize and expand their research organizations, encourage scientific education and establish sound scientific policies so that industrialization could proceed at the rate desired.

65. The representative of WHO sounded a note of warning in connexion with the impact of industrialization on the health and well-being of the individual. He informed delegates that the harmful effects of industrialization on health did not come at an early stage of development. On the basis of observations on developed countries, some of these adverse conditions could be foreseen—overcrowding, sub-standard living conditions, air pollution, deterioration of nutrition, mental disorders resulting from new stresses, and so on. Since the progress of a society was a function of the well-being of its individual members, the representative called on delegates to give sufficiently high priority to health programmes during the period of industrialization.

66. The attention of delegates was drawn by the representative of the Afro-Asian Organization for Economic Co-operation to the importance of promoting sectoral co-operation between countries and industrialists in Africa. Approaches to the solution of the problems of industrialization could be realistically charted through close co-operation with experienced businessmen and industrialists. The representative underlined the benefits that countries could derive from laying a firm foundation of mutual understanding and trust and invited the ECA and UNCTAD to continue their long standing co-operation with the Afro-Asian Organization for Economic Co-operation.

E. PROBLEMS OF INDUSTRIAL DEVELOPMENT

67. The past growth trends and the present situation of the industry sector in Africa were briefly surveyed. It was pointed out that while the rate of industrial growth in the past was as high as 7 per cent, there were now indications that there had been a slowing down in recent years. The outstanding disparities between sub-regions in industrial development were also noted, and the attention of delegates was drawn to the possibility of useful exchange of technologies and industrial products between sub-regions as a result.

68. Some countries were already in the process of shifting from investments in infrastructure to industry, and thus could speed up industrial growth. The development of the heavy industry sector in Africa would require a multi-national approach. In other industrial sectors, import substituting industries were often given priority. Nevertheless, the weakness inherent in import substitution programmes should not be overlooked, for high-cost import substitution industries under the umbrella of protective tariffs might be a liability. Import substitution industries saved comparatively less money than was usually realized. It was the lagging of export markets that prompted countries to launch import substitution projects at an early stage. The scope for increasing export earnings through the establishment of primary processing industries was at the same time limited by the tariff schedules of the developed countries. Import sub-

stitution programmes were nevertheless important to African countries, and the central problem was how to avoid the inherent pitfalls.

69. The problem of export of manufactured goods from the developing countries to developed countries was extensively discussed by delegates to the Symposium and the general feeling appeared to be that extra efforts must be made to gain access to markets of the developed countries. At the United Nations Conference on Trade and Development held in Geneva in June 1964 an appeal was made to the developed nations to reduce tariffs on goods from the developing countries without demanding reciprocity. Several delegates therefore requested UNCTAD to make extra efforts to pursue this question. In the meantime, African countries should strive to attain a high level of quality in their industrial products and should promote intra-African trade.

70. In order to promote the employment objectives in industrialization, labour intensive technologies may be desired to offset the chronic shortage of capital and utilize available manpower resources. This should only be done, however, where efficient production would not be impaired. At the same time it was noted that in Africa today there is considerable under-utilization of capacities of existing industries which would make it possible to increase employment without the need for further capital outlay. There is also scope for raising employment through the promotion of a wide range of small industries.

71. The representative of the UNCTAD in his statement expressed the keen interest of the United Nations Conference on Trade and Development in the progress of industrialization in Africa, and underlined the need of taking into account the export opportunities of manufactures and semi-manufactures to developed countries, right from the planning stage of industrialization. The UNCTAD were hoping to continue co-operation with the ECA in promoting exports of manufactures and semi-manufactures, and suggested particularly the fields of processing of raw materials to the maximum extent before export to developed countries, industrial co-operation to produce in developing countries products for consumption in the developed countries, and technical assistance in export promotion techniques.

72. The representative of GATT drew the attention of delegates to the fact that only a small part of industrialization could be financed by foreign aid. Therefore, the export earnings of African countries must be increased through better access to the markets of the developed countries. It was hoped that the Kennedy round of tariff reductions might make this possible. Nevertheless, tariff reductions in themselves were not guarantees of expanded export markets for African countries.

73. The GATT representative welcomed the initiatives taken towards sub-regional co-operation, for within such a framework export promotion action could be effectively undertaken. Trade between developing countries was today hampered by absence of export infrastructure which includes such determining factors as market research, marketing, financing, insurance and transport. The process of exporting must be carefully analyzed at the stage when production was being planned. In 1964, GATT

set up an International Trade Centre precisely to help in tackling these problems and to make it possible for developing countries to develop their export markets. The representative informed delegates that ITC was ready to act for any of the participating countries of the Symposium.

74. In the general discussion that followed, several aspects of the problem of industrialization were reviewed by delegates based on the experiences of their countries. There was agreement that the role of industry must be appraised in a dynamic context and that purely static and commercial considerations were inadequate. On the other hand, the viewpoint that all industries were viable could not be embraced. Project evaluation was the tool that could help in assessing the economic benefit on the one hand and the inefficiencies of the project on the other.

75. In their desire to industrialize, governments must not offer incentives indiscriminately. The cost of incentives must be carefully examined in relation to expected benefits, and incentives should be offered on a selective basis and only when necessary. The harmonization of policies and actions to standardize incentives would assist governments to overcome one of the major obstacles to industrialization.

76. The sacrifice of custom revenue that would result from industrialization was referred to by delegates. It was generally agreed that while the loss of revenue would curtail government expenditure and national saving, nevertheless it should be considered as only a short-term phenomenon, which might be amply rewarded by the economic benefits that would be derived from industrialization. Assuring an expanding market for industrial projects should be given the higher priority.

77. Delegates agreed that export markets could be secured only through intensive effort and efficient organization. The efficiency of industries was improved if the export market was carefully preplanned. That there was scope for such exports was evident from a study of recent statistics, where it is noted that exports of manufactured goods from developing countries to developed countries had been increasing steadily. There was also evidence to show that there was scope for increased trade among developing countries based on adequate differences of product ranges noted in such countries. It was pointed out that inhibiting factors of similar industrial structures were often exaggerated. Attention was also drawn to assistance with export promotion problems which African countries could now obtain from the United Nations Centre for Industrial Development.

78. *Conclusions and recommendations:*

1. The importance and necessity of general planning at the national level was emphasized as a necessary pre-requisite for rapid, harmonious and balanced economic development. While making development plans, the countries must first take stock of their natural and human resources and then determine the emphasis to be given to the different sectors of the economy.

2. The need for substantial structural reforms affecting the administrative institutions and the systems of production and distribution was noted and recognized as a condition necessary for the execution of fruitful industrialization policies. In this connexion, a wide exchange of information and the establishment of permanent and temporary exhibitions and fairs between the various African countries and the developing countries in general was recommended.
3. Present efforts in the field of co-operation at the regional and sub-regional levels were considered as likely to improve the results of national development policies. In order to accelerate and improve the industrial integration already started, the following recommendations are made:
 - (a) Harmonization of national development, to make it easier for countries to benefit from industrial integration.
 - (b) Establishment of well-equipped secretariats to do the preliminary work and follow up decisions, at the level of present or future sub-regional institutions.
 - (c) The need to ensure political stimulus with a view to taking concrete measures in the field of sub-regional co-operation, to promote the economic integration of Africa. These measures could be taken at the level of sub-regional or regional institutions already established or to be established.
 - (d) Studies within the framework of the OAU, to lay the basis of an integrated African development plan, a joint trade policy and a joint financial policy, to meet the needs of industrialization.
4. The delegates observed that individual countries still had more contact and trade with countries outside Africa than with their neighbouring African sister States. As a first step towards correcting this situation, steps must be taken to improve the transportation system, including transportation between neighbouring countries. Special efforts should be made at sub-regional and continental levels to examine ways and means of improving the situation.
5. The problem of lack of national markets makes it imperative to encourage intra-African trade in manufactured goods. Discriminatory tariffs and other measures hindering free flow of goods should be removed wherever possible, since there is evidence to show that there is scope for increased trade among African countries.
6. United Nations agencies should work hand in hand with African governments in preparing economic feasibility studies. This would avoid the danger of setting up projects which may be desirable but uneconomic.

Sector studies
(Agenda item 5)

F. ENGINEERING INDUSTRIES

79. The paper, *Engineering Industries in Africa* (E/CN.14/INR/AS/II/2.i—in three parts with an addendum and corrigendum) was introduced by the secretariat and discussion took place in the first instance on the value to the economy of establishing a motor vehicle assembly industry. It was generally agreed that this industry made only a small contribution to the economy of a country and that it was necessary to proceed towards manufacturing. Some delegates, however, stressed the difficulty of establishing manufacturing. Four difficulties encountered in establishing the assembly industry were mentioned: experience showed that the training of operatives was difficult, the capital investment was relatively high and the cost of C.K.D. procedures was so high that vehicles assembled on the spot would in the end cost more than imported complete vehicles. There was also continued dependence on the supplying country for spares. It was generally agreed that as national markets were small, the manufacturing industry should be planned on a sub-regional basis. In this regard the need to arrive as far as possible at a standardization of parts was stressed.

80. With regard to engineering generally, the importance of establishing adequate design facilities in the countries undertaking manufacture was stressed in order to keep abreast with technical progress. Otherwise, factories based on imported equipment might soon become obsolete. While agreeing with the great importance of design, the secretariat expressed the view based on the experience of most developing countries that the normal progression in engineering was from assembly, usually under licence, to manufacture including design.

81. The ECA study was regarded as most welcome and opportune because of the rapid increase in imports of engineering goods and the meeting stressed the importance of co-operation between Africa countries in the development of the industry.

82. *Conclusions and recommendations* (see Part III, Section IV A):

1. That ECA should continue its studies on the types of engineering works which could be established on a national, sub-regional and regional basis;
2. That the various countries should within the framework of co-operation approach the industrialized countries of the world with a view to assisting African countries in promoting engineering factories.

G. IRON AND STEEL

83. The paper, *The Iron and Steel Industry in Africa* (E/CN.14/AS/III/23), was introduced by the secretariat. Various countries outlined their plans for the development of the iron and steel industry. The Committee noted with satisfaction the co-operative efforts being made in the various sub-regions and welcomed the discussions

now proceeding in West, East and Central Africa, and the Maghreb countries regarding the location and development of integrated works and re-rolling mills.

84. In the course of the discussion, the basic importance of iron and steel in the industrial development of Africa and the need to exploit the abundant iron ore resources of the continent were recognized.

85. It was generally agreed that in order to ensure ultimate profitability, long-term development of an iron and steel works should be properly planned; otherwise, the works might become uneconomic and an obstacle to further economic development. The great economies of scale in iron and steel manufacture and the high investment required to establish an iron and steel works, ranging from US\$70 per annual ton for a simple re-rolling works to US\$350 for an integrated works making flat products emphasized the need for co-operation on a sub-regional or regional basis in the development of the industry.

86. *Conclusions and recommendations:*

1. That ECA should give active technical assistance at the national, multi-national, sub-regional and regional levels in connexion with the establishment and development of the iron and steel industry and that every effort should now be made to translate present plans into feasibility and engineering studies which might attract the necessary finance;
2. That the standardization of the specifications of semi-finished and finished products, in view of its importance to the future development of the iron and steel industry in Africa, should be studied by the ECA and submitted to the appropriate sub-regional organizations, due consideration being given to the need to conform to international standards;
3. That the proposed sub-regional iron and steel authorities should be established as soon as possible and that ECA should study in co-operation with these authorities the establishment of a regional African authority on iron and steel.

H. ALUMINIUM

87. The paper, Africa and the Aluminium Industry (E/CN.14/AS/II/2/j), was introduced by the secretariat. In this paper the great possibilities for the development of the aluminium industry were referred to, in particular in West Africa, Central Africa, and to a lesser extent in North Africa and East Africa.

88. In the course of the discussion the view was generally expressed that consumption would be increased considerably above the level forecast in the paper. In this connexion, it was recommended that a greater and more varied use of aluminium, both inside and outside Africa, and in particular in the construction of buildings, should be given serious consideration.

89. It was recognized that because of the present low level of African consumption, the main outlets for the products of an aluminium industry compatible with African resources of bauxite and hydro-electric power

were the markets of the developed countries of the world and it was suggested that in view of the tight control of these markets the subject should be discussed at the forthcoming world symposium. In this connexion, it would be necessary for Africa to present a united front.

90. It was recognized, however, that efforts should also be made to promote the increasing use of aluminium in African countries with due regard to the interest of African producers of other metals and that the measures proposed in the paper would contribute to this end.

91. *Conclusions and recommendations:*

1. That the need for African countries to secure a greater share of the world market for aluminium in accordance with their enormous resources of bauxite and hydro-electric power should be urged at the forthcoming world symposium on industry;
2. That institutions should be established at the appropriate level to promote the use and manufacture of aluminium by African countries, having regard to the producers of other metals, to facilitate co-operation in the development of the industry and to assist in securing a share in markets abroad.

I. CHEMICALS AND FERTILIZERS

92. The secretariat introduced document E/CN.14/AS/III/22. This was followed by a lively discussion.

93. Some delegates gave detailed accounts of the chemical industry in their respective countries. It was noted that in North Africa the Maghreb countries had established machinery for co-operation in developing the chemical industry.

94. Several delegations brought to the attention of the meeting fertilizer and other chemical projects, being considered or undertaken in their respective countries. It was noted that the UAR were willing to share their experience accumulated during the establishment and subsequent operation of chemical plants and offer to help other African countries.

95. The lack of sulphur resources in the continent was discussed at length. The rising trend of world sulphur prices was noted and the possibility of using gypsum for the production of sulphuric acid was considered. It was generally agreed that the success of utilizing gypsum depended on the size of plant, cost of production, and the market potential of the co-product cement. It was recommended that countries conducting studies on the possibility of establishing sulphuric acid plants should consider the feasibility of using gypsum. In this connexion, the secretariat was requested to make a comparative study on the production of phosphate fertilizers using sulphur, gypsum and the electro-thermal process.

96. The use of imported ammonia for the establishment of nitrogenous fertilizer plants was discussed. It was emphasized that consideration should be given to the desirability of developing the ammonia industry in the sub-regions or region, whenever favourable conditions prevailed.

Trends in fertilizer consumption and production in Africa indicate that all the countries of Africa are not importers of fertilizers and the consumption of fertilizers will probably be inadequate to meet agricultural and food production needs for the population of Africa which is estimated to reach 346 million in 1970 and 449 million in 1980. Account must also be taken of the expansion of world demand and the necessity for some countries to valorize their export-oriented raw materials.

98. The problem of excess chlorine from chlorine-caustic plants was raised and it was agreed that a practical solution for its utilization should be studied within the framework of the sub-regions and region, in co-operation with ECA and UNOID.

99. With regard to medicinals and pharmaceuticals, delegates felt that this group has not been given the priority it deserves. The possibility of manufacturing pharmaceutical products which are still being imported was stressed. It was further stressed that quality control is essential. The preconditions given in document E/CN.14/AS/III/22 refer to the making of basic raw materials only.

100. Consideration was given to other branches of the chemical industry, such as plastics, rubber, insecticides, soaps, etc. These were important industries and whenever conditions were favourable these branches should be vigorously followed-up by the countries concerned with the assistance of the appropriate United Nations agencies.

101. *Conclusions and recommendations:*

(1) *Chemicals and fertilizers*

1. That the ECA secretariat should continue to draw up a programme for multi-national, sub-regional and regional co-operation in the development of the chemical industry in co-operation with the countries concerned;
2. That ECA and UNOID carry out surveys and technical-economic studies of other chemical industries, for example rubber, plastics, and insecticides and determine the needs and potential markets for such industries;
3. That priority should be given to:
 - (a) The manufacture of concentrated fertilizers both for local and export purposes, bearing in mind the great increase in population, availability and rational use of natural resources and their local valorization;
 - (b) Exploitation of Africa's hydro-electric potential and maximum use of manpower resources;
 - (c) The development of the pharmaceutical industry;
4. That studies on the availability and possible utilization of certain raw materials should be undertaken, in particular on sulphur, pyrites and natural soda ash, etc.;
5. That a study on the possibility of using certain processes of production should be made:
 - (a) Gypsum (natural or by-product) for sulphuric acid and ammonium sulphate making;

- (b) Possibility of using hydrochloric acid in acidulation of phosphate rock and in the pickling of iron and steel;
 - (c) Other processes for maximizing economic disposal of chlorine;
 - (d) Causticization of natural soda ash;
 - (e) The Dual Process for soda ash production;
6. That training and applied research should be emphasized:
 - (a) Encouragement of students to take courses in the field of chemical engineering and training of chemical industry personnel;
 - (b) Creation of chemical engineering departments in universities and polytechnic institutes and strengthening of existing ones;
 - (c) Establishment of applied research and training centres for research and training respectively;
 7. *Miscellaneous:*

That standardization of methods of classification of statistical data should be adopted, i.e., the Standard International Trade Classification (SITC) for import-export commodities and the International Standard Industrial Classification (ISIC) with details provided by SITC for industrial production;

- (b) That governments should promote use of fertilizers and pesticides;
 - (c) That preference should be given to larger ammonia capacities rather than to small plants.
- ##### (2) *Pharmaceutical industries*
1. That the pharmaceutical industry in Africa be given the priority it deserves in development programmes, with due consideration to quality control;
 2. That the ECA should establish a committee of experts to study the present and expected state of this industry in African countries and ways of obtaining help and of exchanging experience in this field;
 3. That the ECA should prepare in association with WHO, a comprehensive report to be presented to the Geneva conference in 1967 on:
 - (a) Possible ways and means by which the pharmaceutical industry in Africa can be developed and its quality properly controlled to an extent capable of meeting the rapidly growing needs of the continent with the utmost saving in time and money;
 - (b) The help that Africa may and should get for this purpose including access to safe and reliable sources of technology, methods of quality control and other procedures necessary to the development of a pharmaceutical industry.

J. FOREST-BASED INDUSTRIES AND PULP AND PAPER

102. The Symposium reviewed the document, *Development of Forestry and Forest Industries in Africa (E/CN.14/AS/III/3)*, prepared by FAO, which drew attention to the vast forest resources of Africa comprising 15 per cent of the world forest area. In the discussion which followed it was noted that in the world market, excess capacity of certain grades of pulp and paper was expected to continue approximately to 1970.

103. The Symposium requested international organizations, FAO in particular, to assist the African countries in (a) conserving and surveying their forest resources, (b) planning and carrying out reforestation schemes, (c) developing local processing of wood raw materials into sawnwood, plywood, pulp, paper, boards, etc., through feasibility studies and other means, (d) promoting intra-African trade in forest products, through market studies based on sub-regional and regional co-operation, (e) improving marketing and transportation of forest products and (f) expanding training facilities for forestry and forest industries personnel.

104. It was noted that certain non-wood products, such as gum-arabic, associated with the development of forest industries, should also be considered in technical assistance programmes.

105. The importance of integrated and maximum utilization of closed tropical high forests was emphasized and attention was drawn to the fact that integrated forest industries are able to multiply the volume used and the value added in processing as compared with log exports.

106. It was recommended to expand the manufacturing capacity of forest products to promote exports above all of hardwood veneer, plywood, chipboard and sawnwood and coniferous pulp.

107. The Symposium appreciated the organization of the ECA/FAO/BTAO Conference on Pulp and Paper Development in Africa and the Near East, held in Cairo, 8-18 March 1965, and endorsed the following final resolution of that Conference:

"The Conference notes that paper requirements in Africa and the Near East are likely to rise by three million tons by 1980, and that even this increase may fall short of meeting the region's basic needs for cultural papers;

"Recognizes that this growing need cannot be satisfied through rising imports, and therefore, believes it necessary to speed up the rate at which new pulp and paper capacity is being established in the region;

"Notes that

"(a) The region's fibrous raw material resources and non-wood, though unevenly distributed, are capable of sustaining most, if not all, of the required expansion;

"(b) That many African countries are favourably endowed for the rapid creation of additional reserves of coniferous fibre at very low cost;

"(c) That this fact, taken in conjunction with the deteriorating wood resources/requirements balance in some of the advanced regions of the world, offers the prospect of successfully

establishing in Africa, not only the additional capacity needed to supply the region's expanding requirements, but also an important export-oriented pulp industry;

"Recommends that member governments of FAO and ECA in the region take the following steps to facilitate the required expansion and take advantage of developing export opportunities:

"1. The conduct of pre-investment surveys to determine the cost and economic availability of the fibre and other resources needed.

"2. The selection of promising sites for new mills, and the execution of feasibility studies for specific mill types and sites in the selected locations, and

"3. The formulation of short and long-term programmes for pulp and paper development, properly integrated with over-all economic development plans, and especially those concerned with strengthening the infrastructure—communications, power, water supply, etc.;

"Draws the attention of national planning agencies of interested institutions such as the IBRD, IFC, IDA, African Development Bank, United Nations Special Fund and of countries carrying out bilateral assistance programmes in the region, to the urgency of, and special opportunities afforded by, investments in this sector;

"Invites member governments in the region to review current forest policies in the light of the findings of this Conference, and in particular to consider the adequacy of present planting programmes and the need to concentrate new industrial plantations around favourable potential mill sites;

"Considers also, given the presently small size of national markets in many countries of the region and the significant scale of economies in many branches of this industry, that national self-sufficiency in paper in all countries of the region will not represent an optimum use of the region's resources and could act as a retarding influence on healthy industrial development; and therefore

"Recommends that governments of the region should co-ordinate their plans for developing this industrial sector, and related structural development in particular intra-regional transport facilities;

"Believes that FAO and ECA can play a useful role in channelling assistance to the region, in keeping trends and development projects under continuous review, and in providing facilities for consultation between governments on development plans;

"Invites the Director-General of FAO and the Executive Secretary of ECA to strengthen and co-ordinate their programmes in the pulp and paper field so as to render more effective services to the governments of the region."

K. BUILDING MATERIALS INDUSTRY IN AFRICA

108. Document E/CN.14/AS/III/1/5 on the building materials industry in Africa, prepared by the ECA secretariat, was reviewed. The major products embraced by this industry were described to be cement and the allied pro-

ducts, building materials and components of iron, steel and timber, flat glass, and sanitary and electrical fittings and fixtures in all materials. In addition, a wide range of other no less important materials such as clay products, building materials of non-ferrous metals, plastics, paints and varnishes are covered.

109. Delegates outlined developments in their respective countries in the field of the building materials industry. The importance of the industry to the economic and social growth of the regions was underlined. It was noted that future requirements of building materials are of such an order of magnitude that unless immediate action is taken to expand the industry, economic development would be seriously impaired.

110. It was generally agreed that the role of the building materials industry must be clearly defined when drawing up national industrialization programmes, as failure to do so could retard the process of economic development. The experience of other countries could be sought in planning the development of the industry with a view to ensuring the efficiency of new industries. Attention was drawn to the vital need of developing building materials based on local resources as well as evolving new materials based on waste and industrial by-products. It was stressed that African countries would have to explore all sources of building materials in order to be able to cope with housing needs and construction activities that would increase with industrialization. At the same time, efforts must be directed to reducing building costs. An important means of achieving this aim would be for African countries to promote actively the setting up of building research and standardization institutions, in which studies would be made on the adaptation of housing and construction projects to specific African conditions, and on the possibility of organizing production units to mass production methods. In this connexion, the need to co-ordinate the activities of building research institutes with industrial research organizations was stressed.

111. The areas of co-operation among countries in the development of the industry were closely examined. It was agreed that building materials which are bulky and voluminous should preferably be developed at the national level. It was also recognized that such building materials as stones, sand, bricks, concrete products, etc., constituted national industries because of the fact that they are oriented industries. On the other hand, it was agreed that multi-national and sub-regional co-operation was necessary in order to establish economic-sized production units and develop key building materials. In this context, the consensus was that the production of materials such as iron and steel products, sheet glass, sanitary and electrical fittings and fixtures would require the co-operation of African countries either at the multi-national or sub-regional level. The scope for co-operation through specialization of products was pointed out, and the advantages of co-operation in frontier areas were stressed in order to establish more organic and efficient industries.

112. *Conclusions and recommendations:*

1. To cope with the requirements of the economic developments, top priorities should be given to the building materials production in the current

and future national economic development plans in the African countries;

2. Emphasis should be directed to the development of traditional and new building materials based on local resources, such as building stones, clays, lime, sand, gypsum, bamboo and timber, as well as agricultural and industrial waste products;
3. Building standards should be patterned at the regional and sub-regional levels to suit African conditions in order to ensure reduction of construction costs;
4. An African Building Materials Industry Development Research Centre should be established to work in co-operation with national and sub-regional building research organizations, existing or planned, in order to facilitate exchange of information and experience among African countries.

L. TEXTILES

113. The ECA report (document E/CN.14/AS/III/24) was reviewed. Although it was observed that the ECA paper was rather general and that more detailed work was required, it was agreed that useful information had been assembled. Developments in various countries were outlined. It was noted that the industry was important to the world in general and to Africa in particular. It was further noted that the establishment of a textile industry was fairly easy to achieve, but the cost of studies and machinery could be high. It was emphasized that vocational training must go hand in hand with industrial development in the sector.

114. The following recommendations were made:

1. That textile mills in African countries should be established in relation to existing and potential markets as well as conditions of profitability;
2. That factories for the manufacture of ready-made clothing should be established to provide a source of employment and also to serve as a market for textile mills;
3. That machinery should be used to full capacity;
4. That production standards should be evolved to ensure good quality;
5. That industrial research centres should be created to enable the African textile industry to reap maximum benefit from technical advances;
6. That technicians of high calibre should be trained in adequate numbers;
7. That regional or sub-regional co-operation for raw materials production (e.g., viscose and artificial silk) should be encouraged;
8. That ECA should continue with studies, in co-operation with United Nations specialized agencies and the countries concerned, on machine capacity, type and quality of current production, raw material availabilities, etc.

M. AGRICULTURAL INDUSTRIES

115. A number of documents submitted by FAO on various aspects of agricultural industries were reviewed (E/CN.14/AS/III/1/7, E/CN.14/AS/III/17, E/CN.14/AS/III/18, E/CN.14/AS/III/19, E/CN.14/AS/III/21, E/CN.14/AS/IV/3).

116. These studies indicated that in most African countries industries processing agricultural, fishery and forest products constituted a major part of their total industry at the present time. These products were often the most readily available raw material for industrialization. Many of them had to be processed before they could be utilized, while processing was also essential for the preservation of perishable products. As incomes and living levels were raised, consumers might be expected to demand an increasing proportion of processed food. The establishment of certain primary processing industries could lead, through forward linkage, to a number of secondary and tertiary industries; they also made possible numerous industries using by-products or waste products.

117. Stress was laid on the close interdependence of agriculture and industry and the need to plan for a parallel development of these two sectors of the economy. If marketed production of food failed to keep pace with the demand of the expanding industrial labour force, the industrialization programme itself could be jeopardized, either by the pressure of rising food prices on industrial wages, or by the need to divert to food imports scarce foreign exchange resources required for the import of capital goods. Greater attention was therefore needed to the role of industry in contributing to the expansion of food production, by supplying the agricultural population both with requisites such as fertilizers, pesticides, selected seeds and implements and with the consumer goods that played an important part in their incentive to increase production for the market. African countries should co-operate in the development of implements and processing equipment better suited to their needs than those at present imported from developed countries.

118. The increasing tendency for FAO to be directly involved in development operations was welcomed, as compared to its earlier largely advisory and training functions. This had come about particularly since the establishment of the United Nations Special Fund and the inception of the FAO/IBRD Co-operative Programme. Under the latter programme, the two organizations participated jointly in the identification and elaboration of agricultural, fishery and forestry projects for IBRD financing.

119. It was noted that FAO's assistance was not confined to the production of the raw material but also covered its processing. A number of African countries had already received assistance through the Special Fund, the Freedom from Hunger Campaign and through FAO/UNICEF assisted projects in pre-investment surveys, feasibility studies and the establishment of pilot plants designed to lead to full-scale industrial projects in such fields as the processing of a wide range of food crops, dairy industries, the construction of abattoirs, fishery industries, leather manufacture, pulp and paper, wood-working and saw-milling.

120. It was recognized that industries processing agricultural, fishery and forest products covered a very wide range, and that some of the simpler processes scarcely fell within the definition of industry. Especially now that smaller-scale processing equipment, better suited to the needs of African countries, was increasingly becoming available, the development of many processing industries could economically be based on domestic markets, and there was less scope for regional and sub-regional co-operation than in the case of some other branches of industry. In this connexion, it was noted that the Indicative World Plan for Agricultural Development, now in preparation by FAO, was being built up on a sub-regional basis and would provide a better basis for the assessment of the possibilities for co-ordination and co-operation between countries.

121. Among more specific points noted, reference was made to the need to reduce the cost of cans and other containers and packaging materials; to the need for promotional campaigns to popularize such unfamiliar processed products as fish flour; and to the need for further research on the processing of African food products and raw materials, including by-products, that were so far little used.

122. The need for more information on the extent of African fishery resources was recognized. Attention was called to technical and economic difficulties encountered in preserving and transporting fish and to problems of marketing canned sardines in Europe.

123. It was suggested that African countries should give preferential treatment to imports of agricultural raw materials from within the continent of Africa.

124. It was also noted that the establishment of grades and standards on a unified African basis could assist in the expansion of trade both among African countries and in world markets, especially for processed agricultural products.

125. Appreciation was expressed for the work done by the FAO in assisting African countries in the development of agro-allied industries. It was recommended that in its future work in this regard FAO should:

1. Intensify its assistance to governments in the promotion of industries related to agriculture, fisheries and forestry;
2. Pay increased attention, particularly in the work of the FAO/ECA Joint Agricultural Division, to the identification of areas for co-operation among African countries, including the promotion of intra-regional trade in processed products;
3. Provide further assistance in obtaining information on the extent of African fishery resources, including, for example, the tuna resources off the east coast and the resources of the Red Sea.

126. The hope was expressed that an arrangement similar to the FAO/IBRD Co-operative Programme could be made between FAO and the African Development Bank.

N. SMALL-SCALE INDUSTRIES

127. The secretariat document (E/CN.14/AS/III/25) on the development of small-scale industries in Africa was reviewed.

128. It was suggested that the question of the definition of the term small industry be considered by a committee that might be appointed for the purpose by ECA.

129. Delegates of several countries explained the steps being taken in regard to development of small industries in their territories. These included loans, establishment of industrial estates, service institutes, etc.

130. The importance of small-scale industries in national economies was fully recognized as well as the need for their rapid development. It was realized that small industries generated employment, added to the production of a number of consumer products, and involved comparatively small capital expenditure. In Africa, which was faced with shortage of capital, this was particularly important. Because of the use, normally of comparatively simple techniques, they offered themselves as good instruments for African entrepreneurs. It was noted that small-scale industries made a useful contribution towards decentralization of urban areas and offered employment opportunities to traders displaced by rationalization of trade.

131. Often they catered for the requirements of local areas in respect of various products and thereby saved transport charges that would otherwise be involved.

132. It was noted that some countries in Africa are planning the establishment of small industries as adjuncts to schools. This was considered useful as these industries would facilitate the training of students in the field of industry concurrently with their formal education.

133. The representative of the ILO explained the assistance extended by his organization to develop small industries in Africa.

O. SECOND-HAND MACHINERY

134. The question whether or not to encourage import of second-hand machinery from developed countries was discussed at length. A United Nations expert (Centre for Industrial Development) stated that the conclusions arrived at in a study made by the Centre were that in the case of certain types of machines, use of second-hand machinery could be recommended.

135. It was, however, felt that it would not be advisable to encourage in Africa the use of second-hand machines, but in view of the conclusions in the United Nations report referred to, it was suggested that ECA might examine the question further.

Selected aspects of industrial development

(Agenda item 6)

P. INDUSTRIAL PROGRAMMING AND PROJECT EVALUATION

136. In an introductory statement the secretariat underlined project evaluation as an essential link between an industrial plan and the individual project. Before the financing body could accept an industrial project it must

satisfy itself that it would be a paying proposition. Four approaches to programme evaluation had been recognized as a result of the Inter-Regional Symposium on Industrial Project Evaluation held in Prague in 1965.

137. The first of these was the workshop approach, whereby officials and others designated by their respective governments could obtain training in project evaluation or in the identification of investment opportunities, the selection by comparison of projects submitted, the evaluation of projects in the framework of national plans, etc. The second approach consisted in the establishment of permanent machinery for industrial evaluation. Examples of this could be found in the industrial research and studies centres now being developed in Tripoli (Libya) for the Maghreb countries, and on a national basis in Tunisia. The third approach, in operation in Tanzania, consisted in putting a group of project evaluation experts at the disposal of the Government. The fourth approach which would be studied further, it was hoped, at the projected World Symposium on Industrial Development, consisted in viewing an industrial project against a world background as regards raw materials, markets, capital, to determine whether or not it would be a viable proposition.

138. It was requested that in view of the far reaching recommendations of the Prague Symposium on project evaluation and its relevance to the present Symposium, the secretariat of the ECA should see to it that these recommendations were made available to the delegates. Another recommendation of the Prague Meeting which received attention was that regarding the holding of another inter-regional symposium to consider the location of industries, whether sub-regional, multi-national or at the national level. It was hoped that such a conference would take place some time in 1967.

139. It was suggested that owing to the limited resources of many African countries it would not be possible for all of them to have their own programme evaluation centres. A way out would be to expand an already existing training centre like the Dakar Institute to incorporate project evaluation in its programme of courses. Thought should also be given to the establishment of project evaluation centres either at regional or sub-regional levels, so that countries which could not afford centres of their own could benefit from the regional, sub-regional or multi-national ones.

140. It was emphasized that special importance should be given to the national profitability factor as compared with the commercial profitability in the process of evaluation of industrial projects in developing countries.

141. It was suggested to endorse the recommendation of the inter-regional symposium held in October 1965 in Prague concerning the establishment by the UN of a Manual on Project Evaluation, preferably with a separate volume referring to specific factors of interest to African developing countries.

142. It was considered that since final decisions on the relative priorities of industrial projects in developing countries were mainly a matter of policy decisions in each country, the UN should speed up the formation of training workshops on Industrial Project Evaluation to form a nucleus of national experts in this field.

143. The representative of the African Development Bank pointed out that so far as project evaluation was concerned it would be advisable to arrange for the African countries, according to appropriate methods to be determined, to pool their human resources and experience in the field of industrialization, since any individual African country would have difficulty in undertaking the necessary studies alone, and therefore has to resort to foreign study bureaux, the independence and sincerity of which must later be verified—something which very few African countries can do on their own account. By pooling their resources from the studies standpoint, the African countries as a body would then have the possibilities and experience in most fields of industry to be able, if not to carry out all the necessary studies themselves, at least to undertake some of them and to keep a serious check on studies being carried out on their behalf by study bureaux located outside Africa.

144. *Conclusions and recommendations:*

1. The overriding need is for a great intensification, with UN and other assistance, in the number of industrial projects for which detailed feasibility and engineering studies can be undertaken. The other conclusions should be taken within this context;
2. Since an industrial project can only be considered as a part of the industrial development programme of a country, which in turn is in itself a part of the general plan for the country's economic development, an industrial project should, therefore, be evaluated within the framework of the general strategy of industrial development. A project report should point out how the proposed project fits in with the broad national objectives and the development programme of the country;
3. Commercial profitability alone is not a sufficient criterion in developing countries seeking accelerated industrial development. National economic profitability occupies a central place in various considerations applied in appraising industrial projects. The introduction of the measurement of national economic profitability will be a major advance in improving evaluating practices in developing countries. Examination of commercial profitability, however, also has an important role to play;
4. The follow-up of approved projects in developing countries has been impeded by difficulties in the execution of projects in the form of delays in the planning time-schedule or over-runs in costs. Follow-up should, therefore, be made through continuous re-appraisal of the project in the course of implementation and full use be made of the feed-back information made available through the process of follow-up. The use of network theory including critical path method in planning, implementation, construction and follow-up of industrial projects should be further explored;
5. The UN is called upon to speed up the organization of training workshops at national and multi-national levels to help train a nucleus of local personnel who can apply improved practices and procedures in evaluating industrial projects. The widening of the scope of activity of the Institute at Dakar to cover evaluation problems should be considered;
6. The UN is also requested to prepare a manual on industrial project evaluation which can be used by evaluating agencies and educational and training institutions in developing countries. The preparation of a special volume for the service of African developing countries would be welcomed;
7. The Symposium suggests the establishment of an African Institute for Industrial Promotion as a positive contribution of the UN in its efforts to promote industrial development;
8. The Symposium suggests that a special seminar or symposium be organized at an inter-regional level to discuss the principles and factors involved in the choice of location for industrial projects and industrial complexes;
9. To offset the present shortage of African personnel familiar with project evaluation, the African countries should pool whatever technical knowledge and practical experience they may have on the subject.

Q. MANPOWER AND PLANNING

145. In introducing the subject of manpower and planning, the secretariat pointed out that one of the limiting factors to accelerated economic growth was the lack of manpower in the form of skilled workers and entrepreneurs. Developed countries like Japan and Germany had clearly demonstrated that their economic progress had been due more to improved skill and management than to availability of capital.

146. With a few exceptions the African countries have not been able to make adequate provision for trained technical and managerial personnel; consequently they were obliged to rely on expatriate personnel in this respect. Apart from the high cost involved, this process of reliance on foreign manpower was not the answer to the shortage of manpower. It was estimated that by 1975 manpower requirements could be as follows:

Engineers and scientists	51,700
Technicians and foremen	111,900
Managerial staff	28,800
Skilled workers	1,722,000

147. These estimates could serve as a rough guide for re-evaluation of African training policies and strategies in the field of industry. It was necessary to make realistic manpower estimates based on:

1. Comprehensive and phased national development plans;
2. Economic priorities and targets;
3. Manpower surveys showing current supply and demand by skills and economic sectors and development trends and anticipated needs.

148. The secretariat concluded by stressing the need for positive steps to train workers at all levels and urged that in the institutes of learning the dignity of labour should be emphasized.

149. The ILO representative dwelt mainly on the contribution of his organization to industrial development, particularly manpower. The ILO was carrying out large-scale activities of a mainly operational character in regard to the training of manpower and to management development and productivity, which were vital to the success of a policy of industrialization. In 1962, ILO operational activities covered 73 projects with 145 experts; in 1964, 80 projects with 250 experts; in 1965, over 100 projects involving more than 500 experts. In Africa many countries benefit from the ILO training schemes. In the UAR, the Government with the help of ILO had established an Instructor Training Institute in Cairo, which prepared the instructors required by a large number of highly specialized vocational training centres where some 80 separate occupations were being taught over a period ranging from a few months to three years. In Nigeria, some 400 instructors and about 1500 foremen and supervisors were being trained under a national training scheme for which the ILO was executing agency under the United Nations Development Programme.

150. In the field of management development and productivity, the ILO was undertaking several projects in different parts of the world. In Africa there were short-term projects in this field now in operation in Tunisia, Algeria, Ghana and Guinea, while long-term projects had been established in Sudan, Uganda, Tanzania and Kenya.

151. Long-term projects had also been drawn up by the Governments of Ethiopia, Zambia and Malawi with the assistance of ILO. In view of the extreme scarcity of entrepreneurial skills in Africa, all ILO Management Development and Productivity projects in the region included special programmes for the promotion of African entrepreneurship, which constituted a keystone in the long-range economic development of the countries in Africa. The ILO representative concluded by mentioning the international Centre for Advanced Technical and Vocational Training set up in Turin in 1965 with the co-operation of the Italian Government. When in full operation the Centre would cater for several thousand people. The programmes at this Centre have been designed for five distinct levels: skilled workers, foremen and supervisors, instructors, technicians and managers. In addition to the Italian Government some African countries, notably the Central African Republic, Libya, Madagascar, Morocco, Nigeria, Tunisia, Uganda and the UAR had also made contributions towards the establishment of the Centre.

152. In the discussion it was pointed out that developing African countries did not have the time to go through all the stages of industrial development of the advanced countries nor could they afford merely to copy their standards of skills. Training should be specific and this would naturally lead to improvement of skills. Developing countries should plan their industrialization as if they were in a time of war. They should embark on crash programmes of development and relate their systems of education at all levels to the needs of the country.

153. Four criteria were suggested for developing countries: speed, quality, efficiency and proper organization. If development programmes were phased, and the time-tables adhered to, making the best use of proper training media, speed would be achieved. High quality must be insisted upon from the beginning, otherwise poor standards would set in and manufactured articles could not hope to compete on the world market. Efficiency through the proper exchange of experience between school and life and between theory and practice must also be stressed and aimed at from the start. Efficiency should be the main criterion for selecting and placing personnel in jobs. Proper national vocational guidance should be established in order to mobilize effectively the national abilities along educational levels and ladders of skills. Proper organization would enable the realization of the objectives which the nation had set itself. It was suggested that a special institute for the training of human resources should be established, which should include a centre of documentation in all major languages of Africa. It was pointed out that while the difficulties of manpower and training could be depressing, comfort should be taken from the fact that even in the developed countries much of the training and skill had been acquired through on-the-job training. It was the industries themselves which had helped to develop skills rather than long processes of training schemes.

154. It was suggested also that too much attention tended to be given to capital and national resources in industrial programmes at the expense of manpower. Skilled labour shortage was the main bottleneck in the realization of development programmes.

155. It was also pointed out that education could be geared to the needs of development. People could be taught to read and write through rural development programmes. Even the primary school curricula of the first five years could be adjusted to the needs of rural life. During the next stage, that is from the sixth to the ninth year, emphasis could also be on rural life, but at a higher level. It was only the more talented who succeeded in getting through the ninth grade, that should make their way to polytechnics and other higher institutions of learning.

156. *Conclusions and recommendations:*

1. It had been made clear from the survey made by ECA of the manpower requirements and the training facilities and possibilities in the African countries that an immediate organized effort should be made to help bridge the gap between supply and demand in the various categories and levels of manpower needed for the industrial development of the African developing nations;
2. Training on the job offers the quickest and least expensive means for those skills and occupations suitable for this method of training, but fuller co-ordination of formal training facilities within plant should be sought to promote the full utilization of all existing training facilities in the preparation of all categories of skills and professions.

3. Accelerated training, retraining and upgrading of labour should have an important role in developing countries as this enables large numbers of workers to be made available quickly for specific jobs to make up for the shortage of skilled manpower for the present and for the immediate future;
4. Planning for manpower requirements should be one of the main objectives in the development programmes of all African nations. Lack of skilled manpower has proved to be a limiting factor in development in most African developing countries;
5. Training of technicians, instructors, supervisors and managerial staff should be planned at the regional and sub-regional levels, the location of specific specialized training institutions being selected and distributed among developing countries according to studies to be made by the specialized agencies of the United Nations;
6. Special United Nations centres for the training of African national specialists in problems of industrial development should be organized and run by the United Nations in the African countries or groups of countries, with local development problems and projects as case studies;
7. The establishment of a training institute for human resources development in Africa, including an adequate centre of documentation in all major African languages should be aimed at by the United Nations;
8. Exchange of experiences, information and visits among African countries in the field of training and productivity should be organized and encouraged;
9. Co-operation among African countries should be expanded by making available techniques and systems arrived at and offering easy access to available training facilities and recruitment of the needed instructors and experts in the fields of training and productivity. Thus the African continent would make the most of its own possibilities before turning to outside sources;
10. Expansion of available facilities in Africa for higher education and research should be studied;
11. A special symposium on human resources development including training, education and productivity should be organized for the region of Africa.

R. FINANCING OF INDUSTRIAL DEVELOPMENT

157. The subject was tackled from two aspects: domestic financing and external financing. The secretariat stressed that domestic financing was not given the emphasis it deserved when countries came to consider the question of financing their industrial development schemes. Small-scale industries, for instance, would benefit considerably from domestic financing if the rate of domestic saving could be stepped up.

158. Perhaps too much was made of the vicious circle between low incomes and low savings in countries with a relatively stagnant economy, and there was a general recognition that despite sacrifices and difficulties there must be higher savings from domestic sources. When such an approach was adopted it would be seen that the so-called vicious circle could be broken. Investment generated income, which in turn made possible increased savings. It was also recognized that where domestic financing was forthcoming external financing might increase. It should be remembered that industrial development programmes could not be financed from external sources alone, even if this were desirable, and that sometimes potential investors were inhibited from initiating investment in industrial enterprises owing to insufficient facilities, or inadequate awareness of facilities, for complementary financing.

159. Other points which received general recognition were:

1. The need for financial institutions to mobilize domestic saving for local investment, for instance, co-operative banks;
2. The need for creating or strengthening industrial development banks;
3. The establishment of financial institutions to help small-scale industries obtain capital equipment, loans at reasonable interest rates, and foreign exchange to pay for imported raw materials and equipment;
4. The setting up of specific agencies like industrial development corporations as a means of promoting industrialization in State or private sectors or in joint State/private sectors;
5. The manipulation of fiscal policy in various forms, as a device to promote and generate savings and new forms of revenue and to improve existing tax systems; a number of African countries were doing this: of particular interest was the experience of one country in imposing a tax on sugar to finance the building of a new dam;
6. The promoting of a system of ploughing back profits for the financing of industries and related agencies such as marketing boards for purposes of industrial development;

160. The representative of the African Development Bank described in detail the structure and financial methods of the African Development Bank and the manner in which it would finance investment projects in general and industrial investment projects in particular. Although at the moment the Bank had at its disposal only the resources accruing from the paid-up portion of its capital—a capital entirely subscribed by independent African States—such resources were a sufficient proof of African solidarity and constituted a nucleus to attract supplementary foreign capital. In view of Africa's need in capital, the Bank was currently trying to influence countries providing capital to contribute within the framework of the Bank—all necessary provisions for receiving such sums being contained in the Bank's statutes—to "Special Funds", to enable the Bank to grant long-term

loans at a low rate of interest, particularly for projects relating to infrastructure or to cultural and social services. The Bank was also pressing for the establishment of a "special fund" to reduce the interest rate on loans floated by African countries on capital markets, more particularly for less profitable or long-term agricultural or industrial projects.

161. The representative of the African Development Bank also outlined the conditions governing the Bank's activities as laid down by the Board of Directors at its last meeting, in an endeavour to adapt methods of financing to prevailing conditions in Africa. They were briefly as follows:

- (a) Possibility for the Bank to grant loans either to Governments of member States or to public, semi-public or private enterprise in member States. In the latter case, the Bank would require the national participation by way of capital and personnel to be substantial.
- (b) Possibility for the Bank to take action either through ordinary shares (IBRD type) or through participation in capital (IFC type), or else by means of special loans (IDA type), if the Bank succeeds in raising special funds.
- (c) Necessity for the Bank, in conformity with its statutes, to grant priority to multinational projects without excluding national projects.
- (d) Possibility for the Bank to grant specific loans for individual projects, or over-all loans—particularly national or sub-regional development banks—to finance a series of projects within the framework of an over-all programme.
- (e) Adoption of two interest rates based on the degree of profitability of the project.
- (f) For carrying out projects, priority will be given to African commodities and services, provided the cost is not too high in relation to that of imported goods and foreign services.
- (g) Lastly, possibility for the Bank to grant technical assistance to member States for studying and perfecting projects, more particularly by way of medium-term loans, with or without interest, in accordance with the conditions applicable to each project.

162. It was noted that external financing either filled a foreign exchange gap or a savings gap, i.e., it aimed at breaking the vicious circle of low incomes and low savings capacity. External financing should be designed to raise domestic savings through calling forth complementary domestic financing and a maximum plough back through taxation or saving of the income generated. External financing could also be used for the purpose of removing specific bottlenecks which militate against increased investment and industrial output. The removal of bottlenecks might require aid in more specific forms, such as technical assistance, skilled manpower resources or food aid such as under the United Nations World Food Programme.

163. From the discussion certain points emerged:

1. It was realized that many African countries required external financing whatever they did

at the domestic level. The need for foreign aid would diminish or increase according to the state of a country's balance of payments with particular reference to the debt servicing capacity;

2. General recognition was given to the preference for trade to dependence on external financing, which, in any case, could not continue indefinitely;
3. It was agreed that price stabilization for the primary products on which most African countries depended for their exchange earnings was essential and the international bodies should help towards this goal;
4. African countries should examine carefully the conditions under which external financing was made available to them. They should insist on low interest rates and a period time of repayment spread over a long period. They should be careful, too, about the concessional terms they offered. Concessional terms should often be avoided where they cut across a Government's essential sources of income, and competition in offering concessional terms should be avoided;
5. Agreement was unanimous on the point that external public financing should preferably not be tied to specific industrial projects and should be given more freely, nor should it have strings attached to it. It was recognized that no country would give financial aid for nothing, all the same, donor and receiving countries should negotiate the terms so that both sides benefit from the transaction;
6. There was a suggestion that external financing for multi-national projects should be channelled through consortia or consultative groups formed on a national or multi-national or sub-regional basis;
7. Suppliers credits should be carefully looked into in view of their huge cost and the risk of paying unduly high prices for the goods and services received;
8. African governments should study the question of foreign exchange and national reserves carefully and take necessary action to prevent an outflow of capital needed to finance industrial development. Similarly the operations of commercial banks should be carefully supervised so that there was no outflow of the much needed capital;
9. Industrial estates were recommended as particularly suitable for attracting foreign capital and encouraging national investment. In view of the cost of establishing such industrial estates, assistance from financing bodies and UNDP is particularly advisable.

164. *Conclusions and recommendations:*

(1) *Internal financing*

1. African countries should make great efforts to increase their national financial resources, and

the possibilities in that respect were still far from exhausted. Unfortunately, the tendency in the African countries was not to make full use of such possibilities;

2. Industrial development programmes could not always be financed entirely by foreign capital, even if this were desirable. Investors were often discouraged by a real or imagined lack of internal financing;
3. There were several ways of increasing national financial resources: the use of appropriate fiscal instruments, administrative austerity, stimulation of savings through premium bonds, savings certificates, etc.; the use of development banks and reserves accumulated through marketing organizations, etc. African countries should also start industrial development banks or, if they already existed, should extend their field of action. Marketing boards often had considerable resources. Such resources could contribute substantially to project financing;
4. An increase in savings was not enough. An effort should also be made to use them properly. The establishment of more rigid systems of financial controls and of bodies to promote small-scale industries, to facilitate the granting of loans, and foreign exchange for capital imports might sometimes be advisable.
5. Due note was taken of the endeavours of the African Development Bank to adapt financing conditions to the specific conditions of development in Africa. It was agreed that countries providing capital should respond to the Bank's initiative and set up a "special fund" to enable the Bank to grant loans at a low or reduced rate of interest and repayable over a long period.

(2) *External financing*

6. It should be the aim of external financing to help to break the vicious circle of low income and small savings capacity;
7. It should be stressed that in many cases financing was not in itself sufficient to promote industrial development and that often technical assistance, expert personnel, food aid as provided under the United Nations World Food Programme were also necessary;
8. It should be stressed also that, however great the internal effort, in many cases it was not sufficient to meet all the needs of Africa, and that therefore external assistance was required. It was pointed out that the existence of sufficient infrastructure might encourage both national and foreign investment, so that finance organizations, whether national or multi-national, should make a special effort in that respect;
9. Foreign aid should go hand-in-hand with efforts to improve the conditions of trade. Stress should be laid, more particularly, on the need to stabilize export commodity prices of the

developing countries, to lower or abolish barriers to intra-African trade, and to export African products, particularly manufactured goods; to the developed countries;

10. It was recognized that external aid is seldom gratuitous. External finance organizations and the developed countries should be requested to be more flexible, more liberal and less restrictive in granting financial assistance;
11. African countries should bring all possible attention to bear on the conditions governing the granting of external financial assistance. In particular, suppliers' credit should be carefully examined before being accepted;
12. The foreign currency problem should be considered carefully. Banking activities should be supervised with a view to restricting or eliminating any leakage of capital.

S. INDUSTRIAL RESEARCH

165. The aims of industrial research were stated to be as follows: to create new technology, to adapt known technology to local conditions and to maintain processes and operations in industry either created or adapted at the highest efficiency. These objectives could be obtained in a number of ways, for instance, (a) through applied research into discovering new processes and methods which promote the expansion of existing or the development of new industries or for improving the technical processes or the better utilization of raw materials or waste products, (b) research in order to adapt known processes of operation to local conditions, (c) industrial testing and quality control, etc.

166. The organization of services connected with industrial research required a large staff of specialists, costly equipment and facilities and high annual recurrent expenditure. Most African countries would find the cost involved in industrial research beyond their means. Thus two alternatives were suggested.

167. First multi-service arrangements with the objective and functions defined earlier, to serve a group of countries. Secondly, a nucleus of technology in each of a group of countries by provision of specialized laboratories each working for a group in that field under an overriding Council which would harmonize and co-ordinate the research programmes and direct as well as administer the institutes in question.

168. With limited resources in finance and qualified personnel, African countries would do well to relate the industrial research programmes to their immediate needs.

169. A distinction was made between pure academic research for its own sake and applied research. It was not always easy to apply the results of research to industries. Sometimes the personnel capable of transferring the results of research into production might be in extreme short supply. Certain developed countries had been able successfully to apply the results of their research to industries and the African countries could profitably benefit from their experience.

170. It was generally agreed that because of limited resources industrial research should be on a co-operative basis, either regional, sub-regional or multi-national and that African countries should place emphasis on applied research, which should be closely linked to the development plans of individual countries.

171. The representative of the UN Advisory Committee on Science and Technology, associated with the secretariat in introducing the subject, stressed the major role of Science and Technology in industrial development. He stated that the needs of different countries differed in relation to population, resources, economic potential, consumption patterns, national aims and plans and consequently the extent and value of industrial plans differed in content. Stress was laid upon the urgency of building scientific and industrial infrastructure needed in African countries.

172. Reference was made to the outline of a short-term 5 year plan and a longer term 15 year plan for the development of Science and Technology in the countries of Africa. Support and recommendations under these plans covered the need to establish research centres, documentation and information centres, training institutes, consulting services, etc., at national and continental levels. National research centres, it was suggested, would help to determine local needs and meet local requirements.

173. The representative of the Advisory Committee informed the Symposium of the Advisory Committee's recommendation that a net-work of institutes should be developed in each country, designed to attack the problems directly relevant to the development of the country concerned in such fields as agriculture, industry, etc. through the application of existing knowledge and through research. Special attention should be given to the development of adequate systems of dissemination of scientific and technological information. The Advisory Committee also called for the full utilization of existing institutes especially those going into disuse.

174. As a first step, the ECA regional meeting on Science and Technology accepted the establishment of some of the institutes and centres, e.g. standardization, information and documentation, geological centres, on an all-Africa basis, to serve as training centres of personnel to man later established national institutes and thereby also obtain co-operation on a regional level.

175. Reference was made to the recent proposal by the Secretary-General of the United Nations to expand United Nations technical assistance to developing countries as a 5 year plan towards accelerated exploitation of renewable and non-renewable natural resources.

176. The OAU had established the "Science, Technology and Research Committee" and a "Scientific Council for Africa" and the Advisory Committee for Science and Technology had recommended close co-operation between ECA and OAU.

177. *Conclusions and recommendations:*

1. Industrial research should be basically planned to meet the development needs of each African Country in general, and each country should be encouraged to build its infrastructure in industrial research;

2. Specialized research centres should be established in the various countries for the purpose of co-ordination of research projects of similar or complementary nature and to tackle research projects of common interest to a group of countries;
3. A regional scientific information and documentation centre should serve to disseminate technical information and results of research activities on a continental level. This would greatly contribute to helping each country to establish its research programme in the specialized fields which are of particular interest to it. Existing research facilities should be fully utilized before building new ones and African countries should use existing research facilities to help other African countries;
4. It should be emphasized that there is importance in the speedy introduction of design and consulting activities in industry. Such activities will contribute substantially towards industrial development in African countries;
5. Developing countries should give immediate attention to the adoption of research programmes to deal with their problems of development;

T. TRANSPORT AND EXPORT OF MANUFACTURED PRODUCTS

178. The secretariat introduced the subject on the basis of its report on industrial development, economic co-operation and transport (document E/CN.14/AS/IV/7). It was pointed out that transport and industrialization were closely linked. The feasibility of establishing an undertaking depended on the dimensions of the market, which in turn depended on communication facilities for reaching the customer.

179. Attention was called to the existing structure of the African transport system which split up the African market, concealed its geographical dimensions and paralyzed industrial development. The Great African Lakes region was cited as an example.

180. In that region 6 great lines of penetration starting out from Port Sudan, Mombasa, Dar-es-Salaam, Beira or Lourenço-Marques, Lobito and Matadi penetrated deep into the interior of the African continent, terminating close to an imaginary line drawn from Juba to Albertville (1,200 km as the crow flies). Traffic along the lines of penetration (consisting exclusively of railways and navigable waterways) was heavy, so average transport costs were very low. To these were added highly discriminatory tariffs which varied according to the type of product, and decreased considerably with distance, so that for products considered most beneficial the long-distance tariffs might be as low as 0.6 US cents t/km, or even lower in the Sudan.

181. On the other hand, the axes of integration which enable—or had once enabled—trading between the African countries, usually consisted of fair or mediocre roads on which transport rates were from 3 to 6 US cents t/km.

182. This disparity in tariffs between the lines of penetration and the axes of integration had split up the African market in favour of imported products and to the detriment of African products. At the same cost (in certain cases) imports could cover ten times the distance on the lines of penetration that African products could cover on the axes of integration.

183. The result was that industrialization possibilities were masked by the divided market, while transport economists and industrial planners were caught in a vicious circle. Transport economists could not economically justify any considerable improvement in the system, due to lack of actual or predictable traffic in the absence of any industrial or trading programme at the international level. Further, lack of transport facilities prevented industrial planners from realizing the extent of the potential market, and consequently led to the shelving or postponing of certain industries which in a rebuilt market, would be immediately profitable.

184. To break the vicious circle, an over-all approach was proposed. First, industrial planners might be offered *a priori* a hypothesis for rebuilding the market: an inter-connexion of the railways and an international transport tariff. Second, industrial planners, agricultural experts, etc. might be asked to study on that basis all industrial establishment possibilities, agricultural specializations and so forth which would become feasible against the background of a rebuilt market. Then on the basis of the data supplied by the various experts, the volume of traffic resulting from such activities could be estimated so as to decide *a posteriori* whether the initial hypothesis was valid.

185. It was pointed out that the Great African Lakes region seemed particularly suitable for such an approach. Located in the heart of Africa, it was naturally protected by distance from import competition. Densely populated, it was one of the greatest potential markets in Africa. Lastly, it had vast natural resources and tremendous reserves of hydro-electric power. It therefore seemed an ideal location for establishing an industrial development axis from the Sudan to Zambia.

186. To illustrate, some indication was given of the distances and costs involved. Length of line to be built, some 2,000 to 3,000 km, perhaps less (economic and technical studies and negotiations between States could alone determine the exact figure). At an average cost of US \$ 100,000 per km, that would mean spending US \$ 200-300 million.

187. In view of the fact that the current African network, comprising some 80,000 km of railway line, was built in less than a century, i.e., at an average rate of about 800 km per annum, it did not seem over-ambitious to consider building an inter-connexion covering 2,000 to 3,000 km to permit the industrialization of a large part of the African continent.

188. Total expenditure likewise appeared to be within the bounds of possibility when compared with other major projects in Africa (the Kanji, Akosneba, Kariba and Aswan dams each cost over US \$ 200 million), or the transport programmes of seven Latin American countries which, for a 7-year period, cost more than US \$ 9,000 million.

189. The secretariat stressed the need for co-ordinating studies as a whole, and cited the Committee set up to study the development of the Mekong Basin in South-east Asia as an example. That committee, consisting of Laos, Cambodia, Viet-Nam and Thailand, co-ordinated all the studies carried out by the big United Nations family with a good deal of outside assistance (from over 20 countries, 3 foundations and 4 private companies), thanks to which the committee had so far had at its disposal about US \$ 27 million for studies alone.

190. In view of the studies already undertaken by the ECA on industrial development programming, US \$ 500,000 to 1,000,000 would cover the initial work on the project.

191. The following points were given special recognition:

1. To build up the market, it is essential that goods traffic in the Great Lakes Region, should be facilitated. Multi-lateral and bilateral assistance should indicate to what extent it can contribute to the elaboration of implementation of such plans;
2. Transport links bear directly on the promotion of industrial projects and these should be developed at the national, sub-regional, multi-national and regional levels, in close co-operation between the African States. Establishing axes of transport to facilitate integration demands sub-regional or multi-national efforts helped by external financing agents;
3. The African countries should standardize their road signs and decide on a uniform system of traffic, either to the right or to the left. A trans-Africa highway was also recommended;
4. Differences existed in technical characteristics of African railways (gauge, coupling, braking system). Standardization was required;
5. Improved transport was needed, in view of its direct bearing on location and growth of industrial enterprise (iron and steel works at Tororo—North Cameroon cement works);
5. To facilitate exports of manufactured goods, it should be stressed that proper axes of integration would help to develop intra-African trade, the aim of all African countries; but pending that long-term project, immediate steps should be taken such as abolishing restrictions on personal travel or on free movement of goods and capital;
7. African manufactured or semi-manufactured products meet with considerable difficulties when it comes to selling in the developed countries. But it was pointed out that African manufactured or semi-manufactured goods, of comparable quality to those of the developed countries, sell well on the European and American markets. Similarly, there was no difficulty in marketing cocoa-butter. The ECA should be asked to study the markets, sector by sector, in respect of manufactured or semi-

manufactured products from African countries. UNCTAD should be asked to collaborate in all such studies to facilitate sales of finished or semi-finished products in the industrial countries;

8. An intra-African organization should be established, to promote sales abroad and ensure the necessary publicity. This would be of particular interest to countries unable to maintain special sales-promotion services with a view to foreign trade. Finally, the importance of transport in industrial development should be stressed with a view to establishing international links, particularly on the Trans-Sahara route. Transport was the most promising field of co-operation for the African States and should be given every stimulus with a view to building up the market and facilitating industrial development.

192. *Conclusions and recommendations:*

1. Transport links bear directly on the promotion of industrial projects. Such links should be developed at the national and multi-national levels;
2. While penetration lines from ports and frontiers to centres of activities are a matter for individual countries, axes of integration and main communication arteries covering more than one country demand multi-national efforts with assistance from external financing sources;
3. African countries should adopt a unified road signs traffic code; as well as uniform railway gauges and should solve all other difficulties that now stand in the way of international communications. A specific study to this effect should be undertaken by ECA;
4. Co-ordination between industrial development projects and transportation projects should be made if projects are to achieve their objectives entirely;
5. Transport proves to be the most promising field of co-operation among African countries and efforts in this direction should be vigorously pursued;
6. Since the promotion of trade among African countries is the desired objective of all African countries, efforts must be made by each African country to facilitate and encourage free movement of businessmen and goods between African countries.

193. There was agreement to stress the need for promoting the export of manufactured and semi-manufactured products from the developing countries to developed countries to overcome their balance of trade deficits and to be able to import their requirements of capital goods and materials for their industrial programmes.

194. It was agreed also that industrial projects and plans should take account of export possibilities and opportunities and make arrangements for promoting and achieving these.

U. INDUSTRIAL STANDARDIZATION

195. In an introductory statement, reference was made by the secretariat to Document E/CN.14/AS/IV/14 and to the resolution and recommendations of the inter-regional seminar on the promotion of industrial standardization in developing countries held at Helsingor, Denmark, in October 1965. Different aspects of standardization were then defined and treated. Standardization is the process of formulating and applying rules for an orderly approach to a specific activity for the benefit and the co-operation of all concerned, and in particular for the promotion of optimum over-all economy taking due account of functional conditions and safety requirements; it is based on the consolidated results of science, technology and experience. Standardization may be either functional or dimensional. Functional standardization includes all standards dealing with "fitness for the purpose". Dimensional standards achieve (a) simplification, (b) unification and typification; and (c) inter-changeability. The aims of standardization are to achieve: (a) over-all economy, (b) protection of consumers, and (c) safety and protection of health and life.

196. Some details of the experience in the field of standardization by some of the African countries that were giving serious thought to the subject, were given. All delegations recognized the importance of standardization not only for improving the quality of goods produced but also for giving meaning to African economic co-operation and trade. It was agreed that standardization will make for rationalization of spare parts and help the mobility of skilled labour. Where standardization is tackled in the early stages of a country's development it tends to reduce costs.

197. The problem of standardization has been made more difficult by the fact that African countries have inherited differing systems, which constitute an inhibiting factor at present among African countries.

198. The necessity of establishing institutes for standardization was recognized. It was also recognized that such centres or institutes are costly to establish and shortage of qualified personnel was another bottleneck among African countries. Because of limited resources both in funds and manpower it was agreed that, in view of the general desire of all African countries to have uniform standards, institutes or centres of standardization should be on multi-national levels as a start. Such centres should adopt uniform standards and pool their resources as well as experience. The help of the ECA, UNDP, UNO, UNO, UNO and other international bodies like ISO was requested in the establishment of such centres; including the necessary testing laboratories, quality control centres and help to set up an African standardization centre or institute.

199. It was further recognized that the sooner the question of standardization was tackled by African countries, the better. It was agreed that standardization should start with small things like electrical appliances, road signs, one system of driving throughout the continent, and then extend to the bigger sectors of industrial enterprises.

200. *Conclusions and recommendations:*

1. Since the introduction of standards in the early stages of a country's development tends to reduce cost, it is recommended that each African developing country not possessing standard institutes should attempt to set up at the earliest possible time, an appropriate machinery or institute for the elaboration and implementation of its national standards;
2. As co-operation between African countries in the field of standardization and the unification of standards among them is essential if co-operation in other fields is desired and intra-African trade is to flourish, the quick formation of an African centre for standardization to promote work on standardization, quality control, and legal and industrial metrology in the African countries along internationally unified lines, is recommended;
3. Financial and technical assistance from the United Nations and its specialized bodies is desirable in the establishment of machinery for standardization, both national and multi-national.

V. HEALTH ASPECTS OF INDUSTRIALIZATION

201. The secretariat introduced the subject and attention was directed to the WHO paper prepared on the subject, which dealt with the human aspects in development, emphasizing health as essential element in all development programmes, since human beings are the most important development resource and the central factor in development.

202. As regards the industrialization drive in Africa it was stated that African countries were both at an advantage and a disadvantage. The advantage stems from the fact that there was the benefit of the experience of the developed countries. On the other hand, although industrial development in Africa entailed in many cases considerable expense, costs in providing infrastructure and general services to industry, provide also opportunities and challenge in planning for the comfort of the workers, their health, recreation, etc. in physical planning of industry are enormous. The developing countries could profit from the experience of the developed countries to provide better living and working conditions for the gainfully employed.

203. In planning for the health, welfare and happiness of industrial workers note should be taken that they are members of a family and a society, and both should be provided for in the general plan. For instance, the members of the family left behind in transferring groups of population from agricultural to industrial areas should be catered for, otherwise social disorganization with its subsequent behavioural changes and mental disorders will follow.

204. It was recognized that adverse influences of industrialization upon health were due to the rapid transfer of large groups of population from agriculture to industry, from villages to industrial centres and cities. If the working environment is not designed according to

occupational health principles, accidents and occupational diseases would occur as well as unnecessary strain and fatigue of the human body. As regards the new social environment of rapidly created industrial centres, overcrowding, bad housing or slums may result; unsanitary disposal sewage refuse and industrial wastes may result in air and stream pollution. Defective food and water hygiene may lead to increased incidence of communicable diseases. Where families were separated as a result of the transfer of populations to new industrial centres and towns, disruption of the traditional family life would result; and this might lead to social disorganization and maladjustment. The impact of urban life on the diet of rural immigrant varies considerably. There are several incidences to indicate that the diets of rural people can quickly deteriorate when they move to urban centres with a subsequent detrimental effect on health.

205. There was recognition of the need to take preventive measures so that the ills and diseases referred to above do not occur or are reduced to a minimum. Certain provisions were suggested:

1. Health and medical services;
2. The guarding of machines and provision of protective equipment to prevent accidents;
3. Adequate sanitary facilities;
4. Visits of health officers both to the factories and the residential areas;
5. A comprehensive housing scheme;
6. Regulated working hours;
7. Paid holidays;
8. Canteen facilities in factories, etc.

These and other measures would help to ensure the health of workers and provide for their welfare and happiness.

206. It was pointed out that where industrialists plan for the health and welfare and happiness of their employees, the output was generally much greater in the long run. But employers should not be relied upon alone to plan for the health and welfare of workers. In agreement with the trade unions, governments should intervene through legislation on working conditions to ensure that employers take adequate measures to see to it that their workers are healthy and happy.

207. In conclusion, the question under discussion—health aspects of industrialization—could be divided into two broad categories:

1. Health conditions and services in the community;
2. Health conditions and services at places of employment.

Both are closely related and complementary to each other.

208. The following four points emerged from the discussions:

1. Co-ordination of action and thinking on the part of African Governments on what should be done in the field of social and health aspects of industrialization. The OAU could be a good medium for doing this;

2. Individual Governments could do much in this field by themselves either (a) by providing for housing, health and recreation facilities and schools, etc., and (b) by using their regulatory and supervisory powers to see to it that conditions of workers were improved with the help of the trade unions, and making their own legislation on working conditions;
3. In seeing to the health aspects of workers, note should be taken of the fact that workers were a part of society. Hence, these services should be provided for them in the framework of the society in which they lived. People in the community other than the workers should be allowed to use hospitals and clinics built specifically for workers attached to a particular industry, where such facilities for the public do not exist. Pensioners should also be taken care of;
4. Physical planning and factory layouts should take into account facilities for improving the health of workers and providing for their welfare.

209. *Conclusion and recommendations:*

1. The necessity to plan industrial projects, from the very beginning, with due consideration to the necessary health measures for the control of the working environment and the prevention of accidents and occupational diseases, should be recognized;
2. There is need to plan from the very beginning for an efficient preventive and curative occupational health service for personnel, providing periodic medical examinations, first aid medical care and health education and counselling. Bearing in mind that the cost of such services is more than repaid by the increase of production and the reduction of cost (through the reduction of absenteeism and the increase in productivity);
3. To give enough care for the creation of a healthy environment outside the factories themselves, such as community health and medical services, housing facilities, community water supply, safe means for the disposal of sewage refuse and industrial wastes and other community services and facilities;
4. To prepare and have available the skilled personnel needed for medical service in factories;
5. To develop the local manufacture of articles and products needed for the expansion of such services in a developing country such as pharmaceuticals, easy made equipment, etc.;
6. To put specifications and standards for the industrial products, especially in the food industries and alike that conform with health principles;
7. To educate and train workers properly in the use of machines and tools before starting work,

as a preventive measure against accidents and enforce other preventive measures relevant to the different industries;

8. To pass laws and regulations for the care of health of the workers, and ensure their enforcement.

W. INDUSTRIAL STATISTICS IN AFRICA

210. In an introduction by the secretariat, the need was stressed for the collection of comprehensive and uniform statistics of industrial production in Africa if the present programme of regional and sub-regional industrial expansion was to be properly guided and directed. Industrial statistics were also essential to the improvement of the national accounts in which so many countries are deficient.

211. Reference was made to the secretariat paper on the subject: Document E/CN.14/AS/IV/10 of 27 January 1966, which brought out clearly that the statistical information presented in the report was not complete. Co-operation of the various countries with the ECA secretariat was stressed to help compile the necessary statistics. The paper also discussed the taking of a general Census of Industrial Production, covering all sectors; agriculture, mining, manufacturing, energy and services, etc.

212. From the discussion it was made clear that the incomplete information contained in the secretariat paper was partly due to long and slow communications with the various countries and the ECA and partly due to the shortage of experienced staff and inadequacy of facilities in many national statistical centres. It was also mentioned that countries occasionally encounter suspicion when collecting information from industrialists.

213. There was also need for the improvement of methods to enable a truer picture of industrial positions to be obtained from time to time. Questionnaires should be so framed as to elicit information easily and unequivocally from those expected to provide it. A matter which deserved attention was the question of secrecy on the part of the officers of statistics centres and the need for such officers to inspire confidence when they set about the task of collecting data.

214. The suggestion from certain delegations that the holding of industrial censuses, being a costly and time-consuming undertaking, should be carried out at fairly long intervals and thoroughly was found to the best that might be done under the circumstances. Since some of the workers engaged in industry in African countries were illiterate and also moved from place to place, the registration of industrial workers became difficult and incomplete. Industrial censuses held at fairly regular intervals provided a truer picture of the industrial position.

215. Delegates received with interest the communication presented on the principles and methods to adopt in the preparation and operation of an industrial census.

216. *Conclusions and recommendations:*

1. All African developing countries should take industrial censuses as frequently as possible;
2. Statistical information should be made available in greater uniformity and consistency within the

framework of United Nations recommendations; and an improvement of statistical methods should be made to enable a truer picture of the industrial situation to be obtained;

3. Successful industrial development in Africa called for a high degree of co-operation between countries and this is one of the principal factors which should also be borne in mind in organizing industrial statistics.

External resources in industrial development

(Agenda item 7)

217. In introducing a discussion on external resources for industrial development, other than finance, the Executive Secretary⁴ of ECA stated that the resources available in the United Nations Development Programme were growing and that it was also intended to increase the share going into industry. In addition, voluntary funds were being made available specifically earmarked for industrial development, to be used in the form of special industrial services established within the framework of the United Nations Centre for Industrial Development, soon to become the United Nations Organization for Industrial Development, and the United Nations Development Programme. These services were designed to make available at short notice high level experts in a wide range of industries to advise on the preparation and implementation of industrial projects; to assist in solving practical problems at the post feasibility stage and prior to financing; to provide on an intermittent basis and for short periods specialists throughout the development of a project; and to provide teams of specialists to examine complex manufacturing techniques. Under the scheme it would also be possible to send national technicians to sources of specialized knowledge in advanced countries; documentary laboratory and designed services would be available; and experts would be available to solve technical problems arising after plants had been established. New areas of assistance were being opened up such as the financing of pilot factories.

218. The Executive Secretary recalled that there were other major sources of technical assistance for the promotion of industrial development provided for example by specialized agencies such as ILO, UNESCO, and FAO. In addition, bilateral donor countries were playing a very large part and were prepared increasingly to co-ordinate their efforts with the United Nations, in particular ECA. He referred to the role of the ECA in this growing effort, such as the wide range of preliminary industrial studies which would soon cover almost the whole range of industry in all four regions of Africa, and also the part played in promoting industrial co-ordination machinery in the sub-regions. This work would continue but in addition it was necessary to proceed further to the point where new industrial developments could be realized in practice. This was the significance of the United Nations machinery described and the growing efforts of the bilateral donors, particularly in the preparation of feasibility and engineer-

ing studies. ECA would continue to remain available as a promoter and a catalyst so as to enable African countries to approach the appropriate sources of assistance, to help them solve a given problem and to carry through their programmes to the stage of final execution. This would be facilitated by the new industrial promotion services the ECA planned to establish at its four sub-regional offices.

219. The UN Commissioner for Industrial Development explained that one of the reasons for the establishment of the special industrial services was to resolve the paradoxical situation in which African countries had frequently urged that more assistance should be given for the promotion of industrial development but had at the same time been unable to take full advantage of services already existing.

220. The representative of FAO drew attention to arrangements made between his Organization and the International Bank to assist countries in the identification and preparation of projects for Bank financing, including projects for the processing of agricultural, fishery and forest products.

221. The representative of the African Development Bank explained the arrangements being made to provide technical services for identification and preparation of industrial projects, in addition to capital financing, in particular of multi-national projects.

222. In the discussion the new arrangements for special industrial services were warmly welcomed as evidence of rapidly increasing and co-ordinated efforts to assist African industrial development. It was suggested that pilot manpower and training units for industrial development should be established, with assistance in staffing and finance from outside Africa and capable of providing assistance to other African countries in the training of technicians and skilled workers. Documentary services should be attached and arrangements made to give fellowships for on-the-job training in advanced countries.

223. A number of delegations drew attention to the need for more flexible arrangements for provision of technical assistance for industry. It was pointed out that insufficient attention was given to the need for technical experts to train their counterparts. Sometimes the duration of the programme was too short. Furthermore, the time taken for example, to reach a decision in respect of requests for Special Fund projects appeared to be unnecessarily long. It was also suggested that in view of the increasing use of the sub-regional approach in African industrialization it might be advantageous if technical assistance experts in industry could serve a group of countries.

224. A number of delegations felt that insufficient effort was being made to provide assistance in industrial development in the less developed African countries.

225. Conclusions and recommendations:

1. Individual countries should finance projects as far as possible from domestic savings because of the high cost of external loans. Through well-planned taxation and sacrifice, considerable savings can be forthcoming from internal

⁴ The text of the Executive Secretary's statement is reproduced in full as annex VIII.

sources so that external financing would become merely supplementary. It was generally agreed, however, that external financing would continue to play an important part in Africa's industrial development, particularly since much of the domestic savings would be taken up in financing the internal economic infrastructure, and also because of fluctuations of the prices of raw materials which constitute the greater part of exports of African countries and frequent falling off in foreign exchange.

2. It is recommended that the forthcoming World Symposium should discuss the question as to how developing countries can be helped to cope with the deteriorating position of their foreign exchange earnings and their consequent dependence on external finance. The United Nations Conference on Trade and Development has already been made aware of the seriousness of the situation.
3. Meanwhile, it is recommended that the conditions of external financing should be improved and adapted to the requirements of developing countries. Such improvement and adaptation should cover volume of loans, applicability to sectors not at present covered, or inadequately covered, especially infrastructure, lower interest rates, extended time-limits for repayments, and increased proportion of external project financing as compared with the national contribution.
4. Technical assistance would be better adapted to the specific needs of each sector if more highly specialized services and experts were provided. In this connexion, the Symposium welcomes the establishment of the United Nations Organization for Industrial Development, under General Assembly Resolution 20892 (XX).
6. It is also recommended that maximum use should be made of joint intra-African possibilities of technical co-operation and mutual assistance, since there are already several examples of successful intra-African co-operation and the African States have begun to accumulate some experience in one or more sectors.
6. African countries should help each other as far as possible to solve the problems of skilled manpower shortages. African countries could exchange manpower in specific fields and educational institutions could set be up in appropriate fields where lack of manpower is liable to cause a bottleneck in industrialization.

Part III

SUMMARY OF THE MAIN RECOMMENDATIONS

General

226. The Symposium welcomes the initiatives already taken by the Economic Commission for Africa in promoting multi-national and sub-regional co-operation. It further recognized the usefulness of the multi-national approach as one basis for widening markets, grouping resources and efforts, thus making possible the establishment of a much wider range of industry in Africa.

227. The usefulness of the studies that have been made by the ECA on sectors of industry was recognized. It was generally agreed that the next phase of the programme—feasibility, engineering and construction studies—should be speeded up, and that ECA, in co-operation with UNOID, the UN specialized agencies and the countries concerned, should continue with studies on types of industries which could be established and developed on a national, sub-regional and regional basis.

228. The Symposium further stressed that the ECA secretariat should continue to draw up programmes for multi-national, sub-regional and regional co-operation in the field of industrial development in co-operation with the countries concerned.

229. It was decided that the problems of the industrial development of Africa, in all its many complex aspects, as brought out during the deliberations of the Symposium, should be set forth in a series of recommendations which would form the basis for continuing review and action. To this end, the Executive Secretary of the ECA was requested by the Symposium to prepare a summary of the main recommendations.

230. The subject headings of the recommendations follow closely on the agenda items and are also based on the main objectives of the Symposium, which were to review the current industrial situation in African countries, discuss problems and prospects of industrial development in Africa at the country, multi-national, sub-regional and regional levels, and consider measures which should be taken both regionally and internationally to accelerate the rate of industrialization in Africa.

Recommendations

A. GENERAL ECONOMIC CO-OPERATION

1. *The Symposium*

Recognizes the importance and necessity of economic planning at the national level as a necessary pre-requisite for rapid, harmonious and balanced economic development;

Considers it essential that in drawing up development plans countries should take stock of their natural and human resources and then determine the emphasis to be given to the different sectors of the economy;

Recognizes that present efforts in the field of co-operation at the sub-regional and regional levels are likely to result in more efficient national development policies and plans;

Recognizes the advantages of economic co-operation and industrial co-ordination, which would permit economies of scale in major industries and provide the necessary market for economically-sized units;

Also recognizes that the dynamic development of Africa would best be realized through the harmonization of efforts within a framework of sub-regional and regional co-operation;

Considers therefore that sub-regional or multi-national approach is the logical solution to overcome small national markets and other similar bottlenecks;

Welcomes the initiatives already taken by ECA and OAU in promoting sub-regional co-operation;

Recommends that:

- (i) There should be no delay in setting up effective consultation machinery to promote sub-regional co-operation.
- (ii) The establishment of the proposed Intra-African Economic Co-operation Council [see paras. 43, 46, 48, 61, 78(1), (3)].

B. INSTITUTIONS FOR ECONOMIC CO-OPERATION

1. *The Symposium*

Recommends the following steps in order to accelerate and improve the process of industrial integration already initiated:

- (i) Harmonization of national development programmes between countries to make it easier to benefit from industrial integration;
- (ii) Establishment of well-equipped secretariats, to do the preliminary work and follow up decisions, at the level of present or future sub-regional institutions;
- (iii) That for the purpose of promoting the economic integration of Africa at the multi-national, sub-regional or regional levels, a favourable political atmosphere should be established and maintained;

- (iv) Studies within the framework of the OAU and ECA should be undertaken, to lay the basis of an integrated African development plan, a joint trade policy and a joint financial policy to meet the needs of industrialization [see paras. 43, 78(3) (a), (b), (c), (d)].

C. TRADE AND INDUSTRIALIZATION

The Symposium

Observing that individual countries still had more contact and trade with countries outside Africa than with their neighbouring African sister States;

Recognizes the uncertainty of gains in foreign currency, due to steady deterioration in the terms of trade, fluctuations in prices of basic products, and gradual or sudden loss of certain traditional outlets;

Stresses the need to gain access to markets of developed countries for manufactured goods from African countries;

Noting that at the United Nations Conference on Trade and Development an appeal was made to the developed nations to reduce tariffs on goods from developing countries without demanding reciprocity;

Noting that the lack of national markets makes it imperative to encourage intra-African trade in manufactured goods; and that there is scope for increased trade among African countries based on differences of product ranges;

Recommends that:

- (i) Special efforts should be made at the sub-regional and continental levels to improve the transportation system, including transportation between neighbouring countries; in order to promote intra-African trade.
- (ii) Discriminatory tariffs and other measures hindering the free flow of goods should be removed wherever possible, since there is evidence to show that there is scope for increasing trade among African countries.
- (iii) An appeal should be made to UNCTAD to make extra efforts to overcome obstacles to exports of manufactures by developing countries to developed countries.
- (iv) African countries should strive to attain a high level of quality in their industrial products in order to facilitate exports of manufactures [see paras. 52, 69, 72, 77, 78(4) and (5)].

D. SECTOR STUDIES

1. General

The Symposium

Considers that the preponderant role of agriculture in African economies, and especially the reliance of countries on specific commodities, must be corrected within the shortest possible time by embarking on rapid industrialization;

Concerned with the danger of setting up projects which may be desirable but uneconomic;

Recognizes that industrialization must be planned within an all-embracing framework within which all the implications could be properly assessed and allowed for;

Recognizes also that haphazard implementation of industrial projects, especially those which would be underutilized or subsidized by the State, might not be conducive to the realization of the goal of industrial development;

Welcomes the new arrangements for special industrial services outlined by the Commissioner for Industrial Development in his opening statement;

Recommends that:

- (i) The United Nations agencies should work hand in hand with African governments in preparing feasibility studies [see paras. 48, 60, 61, 78 (6)];
- (ii) The United Nations and its specialized agencies should assist African countries in the surveying and evaluation of their natural resources.
- (iii) African countries should plan multi-national industrial complexes [see paras. 48, 60, 61, 78(6)].

2. Engineering industries

The Symposium

Recommends that the various countries should, within the framework of co-operation, approach the industrialized countries of the world with a view to assisting African countries in promoting engineering factories [see para. 82].

3. Iron and steel

The Symposium

Recommends that:

- (i) ECA should give active technical assistance at the national, multi-national, sub-regional and regional levels in connexion with the establishment and development of the iron and steel industry and that every effort should now be made to translate present plans into feasibility and engineering studies which might attract the necessary finance;
- (ii) The standardization of the specifications of semi-finished and finished products, in view of its importance to the future development of the iron and steel industry in Africa, should be studied by the ECA and submitted to the appropriate sub-regional organizations, due consideration being given to the need to conform to international standards;
- (iii) The proposed sub-regional iron and steel authorities should be established as soon as possible, and that ECA should study in co-operation with these authorities the establishment of a regional African authority on iron and steel [see para. 86 (1) (2) (3)].

4. Aluminium

The Symposium

Recommends that:

- (i) The need for African countries to secure a greater share of the world market for aluminium

in accordance with their enormous resources of bauxite and hydro-electric power should be urged at the forthcoming world symposium on industry;

- (ii) Institutions should be established at the appropriate level to promote the use and manufacture of aluminium by African countries, having regard to the producers of other metals, to facilitate co-operation in the development of the industry and to assist in securing a share in markets abroad [see para. 91 (1) and (2)].

5. Chemicals and fertilizers

The Symposium

Recommends that:

- (a) ECA and UNOID carry out surveys and technico-economic studies of other chemical industries, for example, rubber, plastics and insecticides, and determine the needs and potential markets for such industries;
- (b) Priority should be given, *inter alia*, to:
 - (i) The manufacture of concentrated fertilizers, both for local and export purposes, bearing in mind the great increase in population, availability and rational use of natural resources and their local valorization;
 - (ii) Exploitation of Africa's hydro-electric potential and maximum use of manpower resources;
- (c) Studies on the availability and possible utilization of certain raw materials should be undertaken, in particular on sulphur, pyrites, gypsum and natural soda ash, etc.;
- (d) A study on the possibility of using certain processes of production should be made:
 - (i) Gypsum (natural or by-product) for sulphuric acid and ammonium sulphate making;
 - (ii) Possibility of using hydrochloric acid in acidulation of phosphate rock and in the pickling of iron and steel;
 - (iii) Other processes for maximizing economic disposal of chlorine;
 - (iv) Causticization of natural soda ash;
 - (v) The Dual Process for soda ash production;
- (e) Training and applied research should be emphasized:
 - (i) Encouragement of students to take courses in the field of chemical engineering and training of chemical industry personnel;
 - (ii) Creation of chemical engineering departments in universities and polytechnic institutes and strengthening of existing ones;
 - (iii) Establishment of applied research and training centres for research and training, respectively [see para. 101 (1), 1 to 6].

6. Pharmaceutical industries

The Symposium

Noting that pharmaceutical products form one of the largest import items into African countries, that importation of these products is increasing at a high rate and that present *per caput* consumption is relatively low;

Recognizing that most requirements for the manufacture of these products are now available from many sources and that local manufacture in Africa is possible at favourable costs of production and would save foreign exchange;

Recommends that:

- (a) The pharmaceutical industry in Africa be given the priority it deserves in development programmes, with due consideration to quality control;
- (b) The ECA should establish a committee of experts to study the present and expected state of this industry in African countries and ways of obtaining help and of exchanging experience in this field;
- (c) The ECA should prepare in association with WHO, a comprehensive study on:
 - (i) Possible ways and means by which the pharmaceutical industry in Africa can be developed and its quality properly controlled to an extent capable of meeting the rapidly growing needs of the continent with the utmost saving in time and money;
 - (ii) The help that Africa may and should get for this purpose, including access to safe and reliable sources of technology, methods of quality control and other procedures necessary for the development of a pharmaceutical industry [see para. 101 (2), 1 to 3].

7. Forest-based industries and pulp and paper

The Symposium

Requests international organizations, FAO in particular, to assist the African countries in (a) conserving and surveying their forest resources, (b) planning and carrying out reforestation schemes, (c) developing local processing of wood raw materials into sawnwood, plywood, pulp, paper, boards, etc., through feasibility studies and other means, (d) promoting intra-African trade in forest products, through market studies based on sub-regional and regional co-operation, (e) improving marketing and transportation of forest products and (f) expanding training facilities for forestry and forest industries personnel.

Emphasizes the importance of maximum integrated utilization of closed tropical high forests and draws attention to the fact that integrated forest industries are able to multiply the volume used and the value added in processing as compared with local exports.

Recommends the expansion of the manufacturing capacity of forest products to promote exports above all of hardwood veneer, plywood, chipboard and sawnwood and coniferous pulp [see paras. 103, 105 and 116].

8. Building materials industry

The Symposium

Recommends that:

- (i) To cope with the requirements of the economic and social developments, high priority should be given to building materials production in the current and future national economic development plan in African countries;
- (ii) Emphasis should be directed to the development of traditional and new building materials based on local resources, such as building stones, clays, lime, sand, gypsum, bamboo and timber, as well as agricultural and industrial waste products;
- (iii) Building standards should be patterned at the regional and sub-regional levels to suit African conditions in order to ensure reduction of construction costs;
- (iv) An African building materials industry development research centre should be established to work in co-operation with national and sub-regional building research organization, existing or planned, in order to facilitate exchange of information and experiences among African countries [see para. 112].

9. Textiles

The Symposium

Recommends that:

- (i) Textile mills in African countries should be established in relation to existing and potential markets as well as conditions of profitability;
- (ii) Factories for the manufacture of ready-made clothing should be established to provide a source of employment and also to serve as a market for textile mills;
- (iii) Machinery should be used to full capacity;
- (iv) Production standards should be evolved to ensure good quality;
- (v) Industrial research centres should be created to enable the African textile industry to reap maximum benefit from technical advances;
- (vi) Technicians of high calibre should be trained in adequate numbers;
- (vii) Regional or sub-regional co-operation for raw materials production (e.g., viscose and artificial silk) should be encouraged;
- (viii) ECA should continue with studies, in co-operation with United Nations specialized agencies and the countries concerned, on machine capacity, type and quality of current production, raw material availabilities, etc. [see para. 114, 1 to 8].

10. Agricultural industries

The Symposium

Recommends that in its future work FAO should:

- (i) Intensify its assistance to governments in the promotion of industries related to agriculture, fisheries and forestry;

- (ii) Pay increased attention, particularly in the work of the FAO/ECA Joint Agriculture Division, to the identification of areas for co-operation among African countries, including the promotion of intra-regional trade in processed products;
- (iii) Provide further assistance in obtaining information on the extent of African fishery resources.

Expresses the hope that an arrangement similar to the FAO/IBRD Co-operative Programme could be made between FAO and the African Development Bank [see para. 125, 1 to 3].

11. Small-scale industries and import substitution

The Symposium

Draws attention to some of the weaknesses inherent in import substitution programmes, e.g.:

- (i) High-cost import substitution industries under the umbrella of protective tariffs might be a liability;
- (ii) Comparatively less money is saved by import substitution industries than is usually realized;

Recognizes, however, the importance of small-scale industries in national economies;

Noting that small-scale industries generate some employment, add to the production of a number of consumer products, involve comparatively small capital expenditure, can be initiated and developed by African entrepreneurs:

Recommends that:

- (i) Each member State establish state-sponsored institutions to help small-scale industrialists to secure technical assistance for production, management and marketing;
- (ii) ECA, in co-operation with the UN Organization for Industrial Development and other UN specialized agencies, should assist in the preparation of programmes for small-scale industry development and in the establishment of national or multi-national institutions for promoting small-scale industries;
- (iii) The problem of the definition of the term small-scale industry be considered by a committee that might be appointed for the purpose by the ECA [see paras. 58, 68, 70, 128, 130 and 132].

E. SELECTED ASPECTS OF INDUSTRIAL DEVELOPMENT

1. Industrial programming and project evaluation

The Symposium

Notes the overriding need for a great intensification, with UN and other assistance, in the evaluation of industrial projects for which detailed feasibility and engineering studies can be undertaken;

Further notes that since an industrial project can only be considered as a part of the industrial development programme of a country, which in turn is in itself a part of the general plan for the country's economic development, an industrial project should therefore be evaluated

within the framework of the general strategy of industrial development. A project report should point out how the proposed project fits in with the broad national objectives and the development programme of the country;

Is aware that commercial profitability alone is not a sufficient criterion in developing countries seeking accelerated industrial development. National economic profitability should occupy a central place in various considerations applied in appraising industrial projects. The introduction of the measurement of national economic profitability will be a major advance in improving evaluating practices in developing countries. Examination of commercial profitability, however, also has an important role to play;

Recognizes that the execution of approved projects in developing countries has been impeded by delays in the planning of time-schedules and increases in costs. A follow-up should, therefore, be made through continuous reappraisal of projects while in the course of implementation and full use should be made of the information thus made available. The use of network theory, including critical path method in the planning, implementation, construction and follow-up of industrial projects should be further explored;

Recommends that:

- (i) The UN be called upon to speed up the organization of training workshops at national and multi-national levels to help train a nucleus of local personnel who can apply improved practices and procedures in evaluating industrial projects. The widening of the scope of activity of the Institute at Dakar to cover evaluation problems should also be considered;
- (ii) The UN be also requested to prepare a manual on industrial project evaluation which can be used by evaluating agencies and educational and training institutions in developing countries. The preparation of a special volume for the service of African developing countries would be welcomed;
- (iii) To offset the present shortage of African personnel familiar with project evaluation, the African countries should pool whatever technical knowledge and practical experience they may have on the subject.

Suggests:

- (i) The establishment of an African Institute for Industrial Promotion as a positive contribution of the UN in its effort to promote industrial development;
- (ii) That a special seminar or symposium be organized to discuss the principles and factors involved in the choice of location for industrial projects and industrial complexes [see para. 144, 1 to 9].

2. Manpower and planning

The Symposium

Notes that it had been made clear from the survey made by ECA of the manpower requirements and the training

facilities and possibilities in the African countries that an immediate organized effort should be made to help bridge the gap between supply and demand in the various categories and levels of manpower needed for the industrial development of the African developing nations;

Recognizes that training on-the-job offers the quickest and least expensive means for those skills and occupations suitable for this method of training, and also that fuller co-ordination of formal training facilities within plants should be sought to promote the full utilization of all existing training facilities in the preparation of all categories of skills and professions.

Recommends that:

- (i) Accelerated training, retraining and up-grading of labour should have an important role in developing countries as this enables large numbers of workers to be made available quickly for specific jobs to make up for the shortage of skilled manpower for the present and for the immediate future;
- (ii) Planning for manpower requirements should be one of the main objectives in the development programmes of all African nations;
- (iii) Training of technicians, instructors, supervisors and managerial staff should be planned at the regional and sub-regional levels, the location of specific specialized training institutions being selected and distributed among African countries according to studies to be made by the ECA in co-operation with specialized agencies of the UN;
- (iv) Special UN centres for the training of African specialists in problems of industrial development should be organized and run by the UN in the African countries or groups of countries, with local development problems and projects as case studies;
- (v) A training institute for the development of human resources in Africa, including an adequate centre of documentation in all major African languages be established;
- (vi) Exchange of experiences, information and visits among African countries in the field of training and productivity should be organized and encouraged;
- (vii) African countries should help each other as far as possible to solve the problems of skilled manpower shortages by exchanging manpower in specific fields, jointly setting up educational institutions in appropriate fields where lack of manpower is liable to cause a bottleneck in industrialization, and encouraging recruitment of instructors and experts within Africa before turning to outside sources;
- (viii) Expansion of available facilities in Africa for higher education and research should be studied;
- (ix) A special symposium on human resources development, including training, education and productivity, should be organized for the region of Africa [see para. 156, 1 to 11].

3. Financing of industrial development

(a) Internal financing

The Symposium

Recognizes that African countries should make great efforts to increase their national financial resources, and possibilities in this respect are still far from exhausted;

Recognizes also that industrial developing programmes cannot be financed entirely by foreign capital, and that investors are often discouraged by a real or imagined lack of internal financing;

Expresses the view that there are several ways of increasing national financial resources: the use of appropriate fiscal instruments; administrative austerity stimulation of savings through premium bonds; saving certificates, etc.; the use of development banks and reserves accumulated through marketing organizations, etc.;

Recommends that African countries should start industrial development banks or, if such banks exist, they should extend their field of action,

Recommends also that an effort should be made to increase savings and use them properly;

Considers that it might sometimes be advisable to establish more rigid systems of financial control and regulation of bodies promoting small-scale industries, in order to facilitate the granting of loans and foreign exchange for imports of capital goods [see para. 164, 1 to 5].

(b) External financing

The Symposium

Recognizes that it should be the aim of external financing to help break the vicious circle of low-income and small-savings capacity;

Stresses that in many cases financing is not in itself sufficient to promote industrial development and that other forms of technical assistance provided through experts personnel, food aid as provided under the United Nations World Food Programme, etc., were also necessary;

Stresses also that, however great the internal effort, in many cases it was not sufficient to meet all the needs of Africa, and that, therefore, external assistance was required;

Recognizes that the existence of sufficient infrastructure might encourage both national and foreign investment;

Notes that foreign aid should go hand in hand with efforts to improve the conditions of trade, stress being laid, more particularly, on the need to stabilize export commodity prices of the developing countries, to lower or abolish barriers to intra-African trade, and to export African products, particularly manufactured goods, to the developed countries;

Recognizes that external aid is seldom gratuitous;

Considers, therefore, that external finance organizations and the developed countries should be flexible, more liberal and less restrictive in granting financial assistance;

Recommends that African countries should bring all possible attention to bear on the conditions governing the granting of external financial assistance. In particular, suppliers' credit should be carefully examined before being accepted. The foreign currency problem should be considered carefully. Banking activities should be supervised with a view to restricting or eliminating any leakage of capital [see para. 164, 6 to 9].

4. Industrial research

The Symposium

Recommends that:

- (i) Industrial research should be basically planned to meet the development needs of each African country, and each country should be encouraged to build its infrastructure in industrial research;
- (ii) Existing research facilities should be fully utilized before building new ones and African countries with adequate research facilities should provide assistance to neighbouring countries where such facilities do not exist;
- (iii) Specialized research centres should be established in the various countries for the purpose of co-ordinating research projects of a similar or complementary nature and tackling research projects of common interest to a group of countries;
- (iv) A regional scientific information and documentation centre should be established to disseminate technical information and results of research activities on a continental level [see para. 117, 1 to 3].

5. Transport and industrial development

The Symposium

Recognizes that the existing transport network in Africa is such as to breakup the African market and thus hinder multi-national industrial development and the growth of intra-African trade;

Emphasizes the role of transport in integrating national markets and, through international transport links, enlarging market opportunities and providing greater scope for accelerated industrial development, and the specialization of agriculture production;

Notes the work being done by the Economic Commission for Africa designed to assist in the solution of national transport problems, and, in particular, to pave the way for new transport links among African countries;

Recommends that:

- (i) ECA should bring to conclusion as rapidly as possible the studies of other transport links, whether by road, rail, water or air, among all African countries and, based on these studies, to present to African governments a comprehensive report indicating concrete possibilities of transport development in Africa, as an integral part of plans for comprehensive industrial development.
- (ii) ECA should prepare a detailed study of the technical problems to be solved as a pre-con-

dition for the eventual linking up of the African railway systems, in particular standardization of the railway gauge, axle loads and loading gauges of tracks and in the sphere of rolling stock, loading gauges, coupling systems, braking systems and height of buffers;

- (iii) ECA should continue with studies on the technical problems to be solved as a pre-condition for linking up the African road systems, and adoption of a unified road signs traffic code;
- (iv) International agencies and bilateral donors, should assist with finance and technical personnel the efforts of African countries who wish to undertake studies for and carry out integrated development programmes with a view to eliminating the fragmentation of the African market through the improvement of internal transport links [see paras. 179, 182, 183, 191, 1 to 8, and 192, 1 to 6].

6. Industrial standardization

The Symposium

Recognizes that the introduction of standards in the early stages of a country's development tends to reduce costs;

Is aware that co-operation between African countries in the field of standardization and the unification of standards among them is essential if co-operation in other fields is desired and intra-African trade is to flourish.

Recommends that:

- (i) Each African country not possessing standard institutes should attempt to set up at the earliest possible time, an appropriate machinery or institution for the elaboration and implementation of its national standards;
- (ii) The establishment, as soon as possible, of an African centre to promote work on standardization, quality control, and legal and industrial metrology in African countries along internationally unified lines;
- (iii) The UN and its agencies be requested to provide financial and technical assistance for the establishment of machinery for standardization, at both national and multi-national levels [see para. 200, 1 to 3].

7. Health aspects of industrialization

The Symposium

Recognizes the necessity:

- (i) To plan from the very early stages of industrialization an efficient preventive and curative occupational health service for personnel, providing periodic medical examination, first aid, medical care, and health education, bearing in mind that the cost of such services is more than repaid by the increase of production and the reduction of cost (through the reduction of absenteeism and the increase in productivity).

- (ii) To give enough care for the creation of a healthy environment outside the factories, such as community health and medical services, housing facilities, community water supply, safe means for the disposal of sewage refuse and industrial wastes, etc.;
- (iii) To prepare and have available the skilled personnel needed for medical service in factories;
- (iv) To draw up specifications and standards for industrial products, especially in the food and allied industries that conform to health requirements [see para. 209, 1 to 8].

8. Industrial statistics in Africa

The Symposium

Notes that successful industrial development in Africa calls for a high degree of co-operation between countries and that this is one of the principal factors which should also be borne in mind in organizing industrial statistics [see para. 216, 1 to 3].

F. EXTERNAL RESOURCES IN INDUSTRIAL DEVELOPMENT

The Symposium

Recognizes that individual countries should finance projects as far as possible from domestic savings because of the high cost of external loans. Through well-planned taxation, considerable savings can be forthcoming from internal sources so that external financing would become merely supplementary;

Agrees, however, that external financing would continue to play an important part in Africa's industrial development, particularly since much of the domestic savings would be taken up in financing the internal economic infrastructure, and also because of fluctuation of the prices of raw materials which constitute the greater part of exports of African countries;

Notes with satisfaction the great efforts now being made by the United Nations to give a more appropriate place to industry in the distribution of funds available for the promotion of development;

Notes also that in addition voluntary funds are being made available specifically earmarked for industrial development;

Notes that more flexible procedures are being established and that new organs for industrial development have now been established, particularly the United Nations Organization for Industrial Development;

Notes also the existence of new possibilities, particularly of assistance by providing pilot factories, for example;

Expresses the hope that the new arrangements will help to resolve the paradoxical situation in which African countries have urged that more assistance should be given for the promotion of industrial development but have at the same time been unable to take full advantage of services already existing;

Takes note of the plans of the African Development Bank to provide technical services in the identification and preparation of industrial projects, in addition to capital financing;

Recommends that:

- (i) The forthcoming world symposium should discuss the question as to how developing countries can be helped to cope with the deteriorating position of their foreign exchange earnings and their consequent dependence on external finance;
- (ii) The conditions of external financing should be improved and adapted to the requirements of developing countries. Such improvement and adaptation should cover: volume of loans, lower interest rates, extended time limits for repayments, increased proportion of external project financing as compared with the national contribution, and applicability to sectors not at present covered or inadequately covered, especially infrastructure;
- (iii) The United Nations organs concerned should continue to give attention to developing more flexible rules suitable particularly for the less developed countries of Africa in respect of local costs and such matter as counterpart expenditures required under United Nations assistance programmes;
- (iv) The Commissioner for Industrial Development and the Executive Secretary of ECA should render all assistance to African governments in presenting their requests to the appropriate organs of the United Nations and in speeding up the treatment of these requests;
- (v) Maximum use should be made of joint intra-African possibilities of technical co-operation and mutual assistance [see para. 225, 1 to 6]

Part IV

AFRICAN INDUSTRIAL DEVELOPMENT PROJECTS

231. This part of the report sets out, as background, summary data on industrial development projects in Africa in the next decade. The projects listed are either planned by the Governments concerned, or regarded as possible, subject to detailed feasibility studies, in the light of the studies carried out so far by the Economic Commission for Africa. Projects of purely national interest are not included. All those listed, require access to the markets of two or more countries and are accordingly planned or envisaged primarily within a sub-regional approach. It is evident that in the more developed countries of Africa the size of the markets, particularly by 1975, will be such as to make possible the establishment of a considerable range of industries primarily for national markets, whereas the same industries in other countries and sub-regions will be viable only on a multi-national basis. This largely accounts therefore for the lower number of industries shown in North Africa, for example, than in the other sub-regions.

232. Data are presented on estimated additions to capacity between 1965 and 1975, except in the case of Central Africa where total estimated capacity is shown (the difference for the range of industry shown is rather small). An indication is given as to the type of market primarily in view, by the use of the following symbols:

Mn = multi-national (i.e. at least one other country beyond the domestic market);

Sr = sub-regional (i.e. the whole or the bulk of the market in the sub-region to which the country belongs);

Os = overseas (i.e. primarily for export outside Africa).

233. The sources are:

<i>East Africa</i>	Papers prepared for a conference on economic co-operation held in Lusaka in 1965;
<i>Central Africa</i>	The Report of the ECA Mission on Economic Co-operation in Central Africa;
<i>North Africa</i>	The Report of the ECA Mission on Industrial Co-ordination to Morocco, Algeria, Tunisia and Libya, and studies subsequently carried out by ECA;
<i>West Africa</i>	Papers prepared for a conference on industrial co-ordination for West Africa, held in Bamako in 1964, and subsequent studies prepared or in the course of preparation by ECA for a conference to be held in Niamey later in 1966.

234. It should be noted that data are not presented on the UAR and the Sudan, since the industrial development of these two countries has not yet been examined by ECA

within a multi-national framework. It should also be noted that data for West Africa are necessarily incomplete, since the preparations for the conference to be held in Niamey are still in progress. This is also partly true of North Africa, where a series of studies are in progress.

235. It should be stressed that the data presented are in summary form and partly provisional. For fuller details, reference is made to the sources cited.

EAST AFRICA

Chemicals:

	Tons	
<i>Nitrogenous fertilizers:</i>		
Uganda	300,000	(Mn)
Rhodesia	400,000	(Mn)
Mauritius	60,000	(Mn)
<i>Phosphate fertilizers:</i>		
Tanzania	180,000	(Mn)
Uganda	125,000	(Mn)
Rhodesia	240,000	(Mn)
<i>Potash fertilizers:</i>		
Ethiopia	600,000	(Sr & Os)
<i>Caustic soda/chlorine:</i>		
Ethiopia	10,000	(Mn)
Kenya	22,000	(Mn)
Rhodesia	12,000	(Mn)
<i>Insecticides:</i>		
Ethiopia	8,000	(Sr)
Kenya	16,000	(Sr)
<i>Viscose rayon:</i>		
Ethiopia	24,000	(Sr)
Zambia	23,650*	(Sr)
<i>Polyethylene:</i>		
Tanzania	19,000	(Sr)
<i>PVC</i>		
Rhodesia	12,000	(Sr)
<i>Explosives:</i>		
Zambia	45,000	(Sr)
<i>Petroleum products:</i>		
<i>Lubricant factory:</i>		
Kenya	100,000	(Sr)
<i>Forest industries:</i>		
<i>Pulp and paper, including conversion:</i>		
Ethiopia	46,000	(Mn)
Kenya	152,000	(Sr & Os)

* Includes 3,560 tons sodium xanthate.

	Tons		Non-metallics:		
Tanzania	168,000	(Sr & Os)	Cement:		
Uganda	60,000	(Mn)		Tons	
Malawi	35,000	(Mn)	Ethiopia	225,000 ^b	
Rhodesia	46,000	(Mn)	Kenya	300,000	(Mn)
Madagascar	40,000	(Mn)	Tanzania	505,000 ^b	
Zambia	24,000	(Mn)	Uganda	120,000 ^b	
			Malawi	70,000 ^b	
Textiles:			Madagascar	350,000 ^b	
<i>Cotton spinning and weaving:</i>	Million square yards ^b		Rwanda	100,000	(Mn)
Ethiopia	165		Zambia	380,000 ^b	
Somalia	28		<i>Sheet glass:</i>		
Kenya	135		Ethiopia	6,500	(Mn)
Tanzania	160		Kenya	10,000	(Mn)
Uganda	90		Zambia	8,000	(Mn)
Malawi	52		Metals:		
Rhodesia	65		<i>Integrated iron and steel:</i>		
Madagascar	60		Uganda	460,000	(Mn)
Burundi	27		Rhodesia	560,000	(Mn)
Mauritius	13		Zambia	510,000 ^c	(Sr)
Zambia	83		<i>Integrated aluminium plant:</i>		
<i>Rayon weaving:</i>			Malawi	100,000	(Sr)
Ethiopia	55		<i>Aluminium rolling mill:</i>		
Somalia	5		Malawi	10,000	(Mn)
Kenya	26		Tanzania	10,000	(Mn)
Tanzania	27		Ethiopia	10,000	(Mn)
Uganda	25		Zambia	10,000	(Mn)
Malawi	10		<i>Tin smelting:</i>		
Rhodesia	73		Rhodesia	12,000	(Os)
Madagascar	30		Rwanda	3,500	(Os)
Burundi	4		<i>Copper rolling mill:</i>		
Mauritius	8		Zambia	10,000	(Sr)
Rwanda	2		<i>Ferro-chrome and calcium silicium:</i>		
Zambia	32		Rhodesia	18,000	
<i>Wool and synthetics:</i>				+28,000	(Os)
Ethiopia	25		Metal products:^d		
Kenya	14		<i>Tanks, boilers, gas cylinders:</i>	Tons per annum	
Tanzania	3		Rhodesia	15,000	
Uganda	10		Kenya	7,000	
Malawi	2		<i>Heavy gas structures:</i>		
Rhodesia	20		Zambia	10,000	
Madagascar	4		<i>Wire ropes and cables:</i>		
Mauritius	2		Kenya	12,500	
Rwanda	2		Zambia	15,000	
Zambia	12		<i>Wire gauze and netting:</i>		
<i>Cordage and bagging materials:</i>	Tons		Kenya	7,500	
Ethiopia	15,000	(Mn)	Zambia	7,500	
Kenya	12,000	(Mn)	<i>Wire fencing:</i>		
Tanzania	53,000	(Mn)	Rhodesia	9,000	
Uganda	20,000	(Mn)	<i>Domestic stoves:</i>		
Zambia	6,000	(Mn)	Kenya	1,250	
			Tanzania	1,250	
Rubber industries:					
<i>Motor vehicles:</i>	Sets				
Ethiopia	600,000	(Sr)			
<i>Tyres and tubes:</i>					
Kenya	600,000	(Sr)			
Tanzania	600,000	(Sr)			
Uganda	600,000	(Sr)			
Madagascar	600,000	(Sr)			
Zambia	600,000	(Sr)			

^b All are primarily for domestic markets but with the intention of a steady growth of sub-regional exchanges in view of the wide range of finished products.

^c 1980.

^d All multi-national.

Mechanical engineering :^d

<i>Internal combustion engines:</i>	<i>Units</i>
Kenya	9,000
Zambia	9,000
<i>Sewing machines:</i>	
Kenya	55,000
Madagascar	55,000
<i>Food-processing machines:</i>	<i>Tons per annum</i>
Kenya	4,500
Rhodesia	4,500
<i>Excavators:</i>	
Kenya	5,500
Tanzania	5,500
Rhodesia	5,500
Zambia	5,500
<i>Agricultural machines:</i>	
Kenya	7,500
<i>Stone-crushing machines:</i>	
Uganda	8,000
<i>Wire-drawing machines:</i>	
Uganda	75,000
<i>Hoisting machines:</i>	
Kenya	4,500
Tanzania	4,500
Uganda	4,500
Zambia	4,500
<i>Weighing machines:</i>	
Ethiopia	2,000
Rhodesia	3,500
Zambia	3,500
<i>Tractors:</i>	<i>Units</i>
Tanzania	15,000
<i>Typewriters, etc.:</i>	
Kenya	25,000
<i>Pumps:</i>	<i>Tons per annum</i>
Ethiopia	2,500
Kenya	3,500
Tanzania	3,500
Uganda	3,500
Rhodesia	6,000
Zambia	6,000
<i>Valves:</i>	
Zambia	4,000
<i>Steam generators:</i>	
Uganda	7,000
<i>Lathes:</i>	
Kenya	3,000
<i>Metal saws:</i>	
Tanzania	1,000
<i>Drilling machines:</i>	
Zambia	2,000
<i>Textile machines:</i>	
Kenya	9,000

Electrical machines :^d

<i>Machines switch-gear, etc.:</i>	<i>US \$ million</i>
Ethiopia	4
Somalia	5
Kenya	10
Rhodesia	10
Zambia	10
<i>Refrigerators and air-conditioning machines:</i>	
Uganda	1.8
Malawi	1.8
<i>Insulated cables:</i>	
Ethiopia	2.4
Kenya	2.5
Rhodesia	6.6
<i>Bulbs and lamps:</i>	
Kenya	4.9
<i>Radio receivers, etc.:</i>	
Tanzania	8.6
Uganda	2.6

Transport equipment :^d

<i>Freight cars:</i>	<i>Tons per annum</i>
Kenya	13,500
Rhodesia	13,500
<i>Wheels and axles:</i>	
Rhodesia	9,000
<i>Passenger cars:</i>	<i>Units</i>
Tanzania	65,000
<i>Trailers:</i>	
Tanzania	17,500
<i>Commercial vehicles:</i>	<i>Tons per annum</i>
Kenya	7,000
Tanzania	7,000
Rhodesia	7,000
Zambia	7,000
Uganda	7,000

CENTRAL AFRICA

Food:^d

<i>Sugar:</i>	<i>Tons</i>	
Chad	6,000	(Mn)
Congo (B)	45,000	(Mn)
Cameroon	24,000	(Mn)
Congo (DR)	70,000	(Mn)
<i>Processed meat:</i>		
Chad	5,000	(Mn)
Cameroon	1,000	(Mn)
<i>Canned vegetables and fruit:</i>		
Congo (B)	32,000	(Sr)
<i>Processed rice:</i>		
Chad	5,000	(Mn)
<i>Flour:</i>		
Chad	6,000	(Mn)
Congo (B)	10,000	(Mn)

^d All multi-national.^d Data on the food industries are in the course of preparation but not yet complete for the three sub-regions.

<i>Soluble coffee:</i>	<i>Tons</i>		<i>Sheet glass:</i>		
C.A.R.	2,000	(Os)	Congo (DR)	7,000 tons	(Sr)
<i>Cocoa butter:</i>			<i>Metals:</i>		
Cameroon	16,000	(Os)	<i>Integrated iron and steel:</i>		
<i>Chemicals:</i>			Congo (DR)	220,000 tons	(Sr)
<i>Potash:</i>			Gabon or Congo (B)	400,000 tons ¹	(Sr)
Congo (B)	350,000	(Os)	<i>Metals and metal products: Metal frames and fixtures:</i>		
<i>Ammonium sulphate:</i>			Chad	1,000 tons	(Mn)
Cameroon	100,000	(Sr)	<i>Metal furniture:</i>		
<i>Insecticides:</i>			Chad	1,200 tons	(Mn)
Congo (DR)	2,150	(Mn)	Congo (DR)	54,000 pieces	(Mn)
<i>Vegetable oils:</i>			<i>Tools:</i>	<i>Tons</i>	
Chad	30,000	(Sr)	Cameroon	2,000	(Mn)
C.A.R.	7,500	(Sr)	Congo (DR)	2,000	(Mn)
<i>Cattle cake:</i>			<i>Screws, nails, bolts:</i>		
Chad	2,000	(Mn)	Gabon	500	(Mn)
C.A.R.	1,200	(Mn)	Cameroon	2,000	(Mn)
<i>Matches:</i>			Congo (DR)	7,500	(Mn)
Cameroon	12,000	(Sr)	<i>Heavy structures:</i>		
<i>Forest industries:</i>			Congo (B)	7,000	(Sr)
<i>Pulp and paper:</i>			<i>Light structures:</i>		
Gabon	150,000	(Os)	Congo (B)	2,000	(Mn)
Congo (B)	100,000	(Os)	Cameroon	4,000	(Mn)
<i>Plywood:</i>			<i>Mechanical:</i>		
C.A.R.	43,000 m ³	(Os)	<i>Agricultural machinery:</i>		
Gabon	13,000 m ³	(Os)	Congo (B)	500	(Mn)
Congo (B)	60,000 m ³	(Os)	Congo (DR)	600	(Mn)
Cameroon	50,000 m ³	(Os)	<i>Tool/machinery:</i>		
Congo (DR)	35,000 tons	(Os)	Cameroon	200	(Mn)
<i>Veneers:</i>			Congo (DR)	1,200	(Mn)
C.A.R.	20,000 m ³	(Os)	<i>Sewing machines:</i>		
Congo (B)	40,000 tons	(Os)	Congo (DR)	25,000 items	(Sr)
<i>Fibre and particle board:</i>			<i>Office machines:</i>		
C.A.R.	25,000 m ³	(Os)	Congo (DR)	100,000 items	(Sr)
Congo (DR)	2,000,000 m ³	(Os)	<i>Scales:</i>	<i>Tons</i>	
<i>Textiles:</i>			Cameroon	1,500	(Sr)
<i>Spinning/weaving cotton:</i>			<i>Saw blades:</i>		
Chad	15,000,000 m ³	(Sr)	Congo (B)	500	(Mn)
C.A.R.	17,500,000 m ³	(Sr)	<i>Lifting gear:</i>		
C.A.R.	2,400 tons	(Sr)	Congo (B)	1,500	(Sr)
	(roselle)	(Sr)	Cameroon	1,500	(Sr)
Cameroon	1,400 tons	(Sr)	<i>Metal containers:</i>		
Congo (B)	1,500,000 m ³	(Mn)	Cameroon	3,000	(Sr)
Congo (DR)	150 mln. m ³	(Mn)	<i>Electrical:</i>		
<i>Dyeing/printing:</i>			<i>Radio:</i>		
Chad	8,000,000 m ³	(Sr)	Gabon	25,000 items	(Mn)
Cameroon	7,000,000 m ³	(Sr)	Congo (B)	30,000 items	(Mn)
<i>Non-metallics:</i>			<i>Transformers:</i>		
<i>Cement:</i>			Cameroon	250 tons	(Sr)
Gabon	90,000 tons	(Mn)	Congo (DR)	200 tons	(Sr)
Congo (B)	100,000 tons	(Mn)			
Cameroon	45,000 tons	(Mn)			
<i>Asbestos cement:</i>					
Congo (DR)	6,000,000 m ³	(Sr)			

¹ By 1980.

Refrigerators:			
Congo (DR)	20,000 items	(Sr)	
Cameroon	5,000 items	(Sr)	
Heaters:			
Cameroon	1,500 tons	(Sr)	
Batteries:			
Cameroon	25,000 units	(Sr)	
Light bulbs:			
Cameroon	5,000,000 items	(Mn)	
Engines:			
Cameroon	2,000 tons	(Sr)	
Transport:			
Bicycles:			
Chad	15,000 tons	(Mn)	
C.A.R.	6,000 items	(Mn)	
Cameroon	20,000	(Mn)	
Congo (B)	20,000	(Mn)	
Vehicle assembly:			
Congo (B)	4,000	(Sr)	
Cameroon	6,000	(Sr)	
Rolling-stock for railways:			
Congo (B)	1,500 tons	(Sr)	
Cameroon	1,500 tons	(Sr)	
Assembly-motorbikes:			
Cameroon	6,000 items	(Sr)	
WEST AFRICA			
Chemicals:			
Phosphate fertilizers:			
	<i>Tons</i>		
Ivory Coast	93,000	(Sr)	
Senegal	35,000	(Sr)	
Togo	116,000	(Sr)	
Nitrogenous fertilizers:			
Nigeria	225,000	(Sr)	
Explosives:			
Nigeria	10,000	(Sr)	
Chlorine-caustic:			
Ghana	10,000	(Sr)	
Guinea	10,000	(Sr)	
Viscose-rayon:			
Nigeria	24,000	(Sr)	
Calcium carbide:			
Dahomey	12,000	(Sr)	
Forest industries:			
Pulp and paper industries:			
Ghana	60,000	(Sr)	
Ivory Coast	50,000	(Sr)	
Nigeria	192,000	(Sr)	
Veneer and plywood:			
Ghana	146,000 m ³	(Os)	
Guinea	12,000 m ³	(Os)	
Ivory Coast	107,000 m ³	(Os)	
Liberia	16,000 m ³	(Os)	

Nigeria	151,000 m ³	(Os)
Senegal	4,000 m ³	(Os)
Panels:		
	<i>US \$ million</i>	
Ghana	1.5	(Sr)
Ivory Coast	0.7	(Sr)
Nigeria	1.9	(Sr)
Sierra Leone	0.7	(Sr)
Textiles:		
	<i>Million square yards^a</i>	
Cotton systems:		
Dahomey	8	
Gambia	8	
Ghana	115	
Guinea	15	
Ivory Coast	45	
Liberia	5	
Mali	30	
Mauritania	2	
Niger	15	
Nigeria	280	
Senegal	75	
Sierra Leone	30	
Togo	7	
Upper Volta	15	
Rayon weaving:		
Dahomey	3	
Gambia	3	
Ghana	44	
Guinea	6	
Ivory Coast	17	
Liberia	0.8	
Mali	2	
Mauritania	0.8	
Niger	7	
Nigeria	108	
Senegal	29	
Sierra Leone	12	
Togo	3	
Upper Volta	6	
Non-metallics:		
	<i>Tons</i>	
Cement:		
Dahomey	200,000	(Mn)
Senegal	400,000	(Mn)
Ghana	60,000	(Sr) ^a
Glassware:		
Ghana	10,000	(Mn)
Guinea	10,000	(Mn)
Ivory Coast	12,000	(Mn)
Mali	5,000	(Mn)
Nigeria	10,000	(Mn)
Togo	5,000	(Mn)
Safety glass:		
Ghana	6,000	(Mn)
Nigeria	10,000	(Mn)
Metals:		
Iron and steel:		
Liberia	700,000	
Mali	100,000	
Nigeria	300,000	

^a All are primarily for domestic markets but with the intention of a steady growth of sub-regional exchanges in view of the wide range of finished products.

^a Aluminous cement.

	<i>Tons</i>
Metal products	150,000 (1/3 Mn or Sr)
Mechanical engineering	90,000 (Mn or Sr)
Electrical engineering	40,000 (Mn or Sr)
Transport equipment	125,000 (3/4 Mn or Sr)

NORTH AFRICA

Chemicals:

	<i>Tons</i>	
Fertilizers	<i>Ammonia:</i>	
	Libya	330,000 (Os)
	Algeria	200,000 (Mn & Os)
	<i>Ammonium phosphates:</i>	
	Morocco	150,000 (Os)
	Tunisia	200,000 (Os)

Textiles:

<i>Cotton spinning:</i>		
Algeria	9,378 ^o	
Morocco	12,500	
Tunisia	4,600	
<i>Cotton weaving:</i>		
Algeria	8,500 ^o	
Morocco	13,000	
Tunisia	3,500	

^o All are primarily for domestic markets but with the intention of a steady growth of sub-regional exchanges in view of the wide range of finished products.

	<i>Tons</i>
<i>Rayon weaving:</i>	
Morocco	6,500 ^o
Tunisia	1,500
<i>Wool spinning:</i>	
Morocco	8,000 ^o
Tunisia	860
<i>Wool (woven):</i>	
Morocco	3,700
Tunisia	200

Non-metallics:

<i>Glass:</i>		
Algeria	20,000	(Sr)
Morocco	10,000	(Sr)

Metals:

<i>Integrated steel works:</i>		
Algeria	300,000	(Mn)
Tunisia	140,000	(Mn)
Morocco	300,000	(Mn)

Metal products ¹	220,000	<i>Tons mainly national</i>
Mechanical engineering ¹	140,000	
Electrical engineering ¹	55,000	
Transport equipment ¹	195,000	

¹ Because of the higher concentration of demand the extent to which plants in this sub-region will operate on a multi-national basis depends more on the possibilities of specialization on the need to secure economies of scale.

ANNEXES

ANNEX 1

List of documents

Symbol and title

- E/CN.14/AS/1/1/1. Industrial development in UAR
 E/CN.14/AS/1/1/2. Industrial development in Niger
 E/CN.14/AS/1/1/3. Industrial development in Liberia
 E/CN.14/AS/1/1/4. Industrial development in Cameroon
 E/CN.14/AS/1/5. Industrial development in Uganda
 E/CN.14/AS/1/6. Industrial development in Nigeria
 E/CN.14/AS/1/7. Industrial development in Sudan
 E/CN.14/AS/1/8. Industrial development in Tanzania
 E/CN.14/AS/1/9. Industrial development in Zambia
 E/CN.14/AS/1/10. Industrial development in Kenya
 E/CN.14/AS/11/2/a/1. Expected trends in rolled steel consumption
 E/CN.14/AS/11/2/a/2. Blast furnace experience and practice in UAR
 E/CN.14/AS/11/b/1. Prospects of development in UAR cotton textile industry
 E/CN.14/AS/11/c/1. Fertilizers industry in UAR
 E/CN.14/AS/11/c/2. Basic chemicals in UAR
 E/CN.14/AS/11/d/1. Pulp and paper industry in UAR
 E/CN.14/AS/11/e/1. Food processing in UAR
 E/CN.14/AS/11/f/1. Development of building materials industry in UAR
 E/CN.14/AS/11/h/1. Engineering products in UAR
 E/CN.14/INR/AS/11/2/i. Engineering industries in Africa
 Part I
 E/CN.14/INR/AS/11/2/i. Engineering industries in Africa
 Part II
 E/CN.14/INR/AS/11/2/i. Engineering industries in Africa
 Corrigendum I. Part II
 E/CN.14/INR/AS/11/2/i. Engineering industries in Africa
 Addendum 1. Part II
 E/CN.14/INR/AS/11/2/i. Engineering industries in Africa
 Part III
 E/CN.14/AS/11/j/1. Africa and the aluminium industry
 E/CN.14/AS/11/2/K. Policy aspects of industrial development in Africa
 E/CN.14/AS/11/2/1. Le Concept d'import-développement économique
 Addendum 1. Le Concept d'import-développement économique
 E/CN.14/AS/11/1/1. Report on small and medium industries in Bechuanaland
 E/CN.14/AS/11/1/2. Small industry in UAR
 E/CN.14/AS/11/1/3. Development of forest industry in Africa
 E/CN.14/AS/11/1/5. Building materials industry in Africa
 E/CN.14/AS/11/2/1. Priority criteria in project evaluation in UAR
 E/CN.14/AS/11/2/2. Some aspects of project implementation
 E/CN.14/AS/11/6/1. Manpower requirements and the training of technical and managerial personnel in the UAR
 E/CN.14/AS/11/1/7. Economic significance and contributions of industries
 E/CN.14/AS/11/15/1. Design in industries for a developing nation
 E/CN.14/AS/11/15/2. Promotion of design facilities in industrially developing countries
 E/CN.14/AS/11/16/1. Standardization in UAR
 + Addendum I. Standardization in UAR
 E/CN.14/AS/11/17. Some essential requisites for industrial development of removable natural resources
 E/CN.14/AS/11/18. Food and food products industries

Symbol and title

- E/CN.14/AS/11/19. Industries processing agricultural products other than food
 E/CN.14/AS/11/20. Development of forest industries
 E/CN.14/AS/11/21. Fisheries industries
 E/CN.14/AS/11/22. Prospects for the development of the chemical industry in Africa
 E/CN.14/AS/11/23. The iron and steel industry in Africa
 E/CN.14/AS/11/24. The textile industry in Africa
 E/CN.14/AS/11/25. Development of small-scale industry in Africa
 E/CN.14/AS/IV/2(PA/257.65 WHO). Health aspects of industrialization
 E/CN.14/AS/IV/3. FAO's relations with industry through the freedom from hunger campaign
 E/CN.14/AS/IV/A. Standardization in Africa
 Addendum 1. Standardization in Africa
 E/CN.14/AS/IV/5. Industrial research in Africa
 E/CN.14/AS/IV/6. Industrial finance in four African countries
 E/CN.14/AS/IV/7. Industrialization—Economic integration and transport
 E/CN.14/AS/IV/8. Aspects of planning to meet manpower requirements in connexion with industry
 E/CN.14/AS/IV/9. Les besoins de main-d'œuvre et la formation du personnel technique et de direction
 E/CN.14/AS/V/3. Technical assistance for industrial development—The African experience
 E/CN.14/AS/V1/1. Provisional agenda
 E/CN.14/AS/V1/2. Aide-mémoire
 E/CN.14/AS/V1/3. Notes for the information of delegates
 E/CN.14/AS/V1/4. External sources of financing
 E/CN.14/AS/V1/5. Introductory note
 E/CN.14/AS/V1/6. List of documents
 CID/SYMP.A./1. } Issues in the financing of industrial development
 CID/SYMP.B./1. }
 CID/SYMP.C./1. }
 CID/SYMP.A./2. } Industrial project evaluation
 CID/SYMP.B./2. }
 CID/SYMP.C./2. }
 CID/SYMP.B./3. Some aspects of industrial research with particular reference to Africa
 CID/SYMP.B./4. The United Nations training programme in industrial development and planning for African government officials
 CID/SYMP.A./5. } List of United Nations documents on industrialization
 CID/SYMP.B./5. }
 CID/SYMP.C./5. }
 CID/SYMP.A./6. } Issues and policies in the promotion of small-scale industries
 CID/SYMP.B./6. }
 CID/SYMP.C./6. }
 CID/SYMP.A./7. } Textile industries in developing countries
 CID/SYMP.B./7. }
 CID/SYMP.C./7. }
 CID/SYMP.A./8. } United Nations technical co-operation activities for industrial development
 CID/SYMP.B./8. }
 CID/SYMP.C./8. }
 CID/SYMP.A./10. } Training of technical personnel for industrialization in the developing countries
 CID/SYMP.B./10. }
 CID/SYMP.C./10. }
 CID/SYMP.B./11. Financing of industrial development with particular reference to Africa by J. T. Simpson

Symbol and title

- CID/SYMP.B./12. The experiences of the central American economic integration programme as applied to East Africa, by M. S. Wionozek, Consultant
- CID/SYMP.B./13. Linkages between industry and agriculture by Ester Boserup, Consultant
- CID/SYMP.B./14. The role of small-scale industry in African industrial development, the East African experiences, K. G. V. Krishna, Consultant
- FERT/CONF.1/REPORT. Report on the proceedings and recommendations of the inter-regional seminar on the production of fertilizers held at Kiev
Report of the inter-regional seminar on the promotion of industrial standardization in developing countries held at Helsingor, Denmark
- E/C.5/75. Problems of industrial development

Contributed papers

- Special programme of the GATT for the expansion of trade of the developed countries (Paper prepared by the General Agreement on Tariffs and Trade—INT (66)II)
- ILO activities relating to the development of small-scale and hand-craft industries in Africa 1960-1965 (Information paper prepared by the International Labor Office D.24(3)1965)
- Some aspects of management development in Africa (Information paper prepared by the International Labor Office)

ANNEX II

List of participants

MEMBERS

ALGERIA/ALGÉRIE

- M. Hachemi Baghriche (Chef)
Membre du cabinet du Ministre de l'industrie et de l'énergie
- M. Rachid-Reda Brixi
Administrateur civil (D Plan)
- M. Djannal Eddine Ghornati
Conseiller
Ambassade d'Algérie
Le Caire
- M. Ali Kechairi
Administrateur civil
Direction du plan
- M. Yahya Triki
Secrétaire
Ambassade d'Algérie
Le Caire

CAMEROON/CAMEROUN

- Mr. Peter Asongwe
First Secretary
Embassy of Cameroon
Cairo

CHAD/TCHAD

- M. Mahamat Gabdou
Directeur du commerce, de l'industrie et des transports

ETHIOPIA/ÉTHIOPIE

- H. B. Lij Endalcachew Makonnen (Head)
Minister for Commerce and Industry
- Ato Tekle-Haimanot Gabre Mariam
Assistant Minister
Ministry of Commerce and Industry
- Ato Gebre Michael Paulos
Director, Industry Department
Ministry of Commerce and Industry

- Ato Berhanu Wakwaya
Deputy Director-General
Ministry of Commerce and Industry

GHANA

- H.E. Mr. J. L. Appah-Sampong (Head)
Ambassador Extraordinary and Plenipotentiary
Embassy of Ghana
Cairo
- Mr. T. Abdah
First Secretary
Embassy of Ghana
Cairo
- Mr. Kwaku Agyei-Gyamfi
Senior Industrial Promotion Officer
Ministry of Industry
- Mr. Isaac Bissue
Economics Officer
- Mr. Samuel Abbey Quaye
First Secretary
Embassy of Ghana
Cairo

GUINEA/GUINÉE

- M. F. Karim (Chef)
Secrétaire d'État au développement économique
- El Haj Bari Gawado
Ambassadeur extraordinaire et plénipotentiaire
Ambassade de Guinée
Le Caire
- Mr. B. Kassoury
Directeur général de la coopération technique et des affaires économiques
- M. B. Mamadou
Chef de la Division Afrique-Asie à la
Direction générale de la coopération
Ministère des affaires étrangères

KENYA

- Hon. T. J. Mboya, M.P. (Head)
Minister for Economic Planning and Development and
Chairman of the Seventh Session of ECA
- Mr. F. Kanyua
Industrial Development Officer
- Mr. John Ndihi
Counsellor
Embassy of Kenya
Cairo
- Mr. J. B. Wanjui
Executive Director
Industrial and Commercial Development Corporation

LIBERIA

- Dr. Cyril Bright (Head)
Deputy Director-General of National Planning
- Mr. J. Jellico Bright
Research Officer
National Planning Agency
- Mr. M. A. Jones
Under-Secretary
Department of Commerce and Industry

LIBYA/LIBYE

- Mr. M. Hawisa (Head)
Director
Production Department
Ministry of Industry

Mr. A. El Azaby
Head of Foreign Trade
Ministry of Economy

MADAGASCAR

S.E. M. René Rasidy (Chef)
Ministre de l'industrie
Mlle Céline Rabevazaha
Chef du service des études au Commissariat général au plan
M. Désiré Robson
Directeur de l'industrie

MALI

S.E. M. Hamacire N'Douré (Chef)
Ministre de la coopération et de l'assistance technique
M. Moussa Ouologuem
Premier Secrétaire
Ambassade du Mali
Le Caire
M. Bakary Touré
Conseiller technique
Ministère des travaux publics

MAURITANIA/MAURITANIE

M. Muhammed Lugman (Chef)
Chargé d'affaires
Ambassade de Mauritanie
Le Caire
M. Athie El-Hadj
Premier secrétaire
Ambassade de Mauritanie
Le Caire

MOROCCO/MAROC

M. Ahmed Benani (Chef)
Chef de cabinet
Ministère de l'industrie
M. Radwan Akkor
Secrétaire général
B.E.P.I.
M. Hasean Fassi
Secrétaire
Ambassade du Maroc
Le Caire

NIGER

M. Ali Diaroumeye (Chef)
Conseiller technique au Ministère des finances et des affaires économiques
M. Oumarou Moussa
Chef de Bureau
Direction du Crédit à la BURN

NIGERIA

Mr. N. A. A. Okuboyejo (Head)
Senior Assistant Secretary (Projects)
Ministry of Economic Development
Mr. C. Ezeji-Okoye
Senior Assistant Secretary (Projects)
Ministry of Industries
Mr. Lamidi Alabi Maliki
Assistant Secretary
Embassy of Nigeria
Cairo

SENEGAL

S.E. M. Alioune Sene (Chef)
Ambassadeur extraordinaire et plénipotentiaire
Ambassade du Sénégal
Le Caire

M. A. M. Diaw
Secrétaire d'ambassade
Ambassade du Sénégal
Le Caire

M. Djibril Yade
Premier Secrétaire
Ambassade du Sénégal
Le Caire

SIERRA LEONE

Mr. Jolliffe A. M. King
Assistant Industrial Development Officer
Ministry of Trade and Industry

SOMALIA/SOMALIE

M. Awad Haji Mussa
Chargé d'Affaires
Embassy of Somalia
Cairo

SUDAN/SOUDAN

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Minister of Commerce and Industry
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Embassy of the Republic of the Sudan
Cairo
Mr. Moheidine El Darouti
Inspector
Ministry of Finance
Mr. Abdalla Fadlalla
Senior Inspector
Ministry of Commerce and Industry
Mr. Fawzy Ibrahim
Ministry of Commerce and Industry
Mr. Abdel Magid Osman
Assistant Inspector (Industry)
Ministry of Commerce and Industry
Mr. Abdel Rahim Shaddad
Managing Director
Industrial Development Corporation
Mr. El Amir Yousif
Industrial Bank
Mr. Bagir Yuasif
Economic Section
Council of Ministers

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Chef de la Section industrie à la Direction du Plan
M. Ferdinand Djomeda
Attaché d'administration au Ministère du commerce
M. Otto Gartner
Ingénieur civil des mines

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M. Tawfik Mazigh (Chef)
Sous-Directeur
Division de l'industrie
Secrétariat d'État au Plan d'économie nationale
M. Mohammed Maoui
Chef du service des statistiques industrielles

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Deputy Premier for Industry

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Rapporteur
Permanent Manpower Committee
Ministry of Planning
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Assistant Professor
Faculty of Engineering
Cairo University
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Egyptian General Organization for Building Materials
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Industrialization Organization
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Director-General
Egyptian General Organization for Metallurgical Industries
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Under Secretary of State
Ministry of Industry
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Director-General
Egyptian General Organization for Small-scale Industries
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Head, Engineering Department
Industrialization Organization
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Engineering Syndicate
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Director-General
Egyptian General Organization for Standardization
- Mr. Nabil Salam
Department of African Affairs
Ministry of Economy and Foreign Trade

Dr. F. Abdel Sayed
Director-General
Egyptian General Organization for Chemical Industries

Dr. Hamad El Sayeh
Under Secretary of State
Ministry of Economy and Foreign Trade

Dr. M. A. Selim
Chairman
Egyptian General Organization for Chemical Industries

Mr. Isa Shahin
Chairman
Spinning and Weaving Plant
Alexandria

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National Bank of Egypt

Dr. G. Shawki
Assistant Professor
Faculty of Engineering
Cairo University

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Chairman
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Under Secretary of State
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Dr. Charles Stino
Director-General
Industrial Control
Ministry of Industry

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Manager
Iron and Steel Plant

Dr. A. Tawfik
Deputy Director-General
Egyptian General Organization for Building Materials

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National Bank of Egypt

Dr. Abbas Zazou
Under Secretary of State
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Mr. M. El Zeiny
Director-General
Vocational Training Department
Ministry of Industry

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National Research Centre

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Aswan

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Chairman
Uganda Development Corporation

Mr. Edward Bewayo
Assistant Secretary
Ministry of Commerce and Industry

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Senior Industrial Officer
Ministry of Industries, Mineral Resources and Power
Mr. Y. Messian
Industrial Economist

UPPER VOLTA/HAUTE VOLTA

M. Hyacinthe Ouedraogo
Directeur du développement industriel

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Economist
Planning Office

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Economist (Section Officer)
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Ministry of Finance

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Deuxième secrétaire
Ambassade de France
Le Caire

M. Antoine Thiard
Ingénieur au Ministère de l'Industrie

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M. Georges Le Brun Keris
Union des industries textiles françaises

M. Georges de Lannurien
Syndicat des bureaux d'études techniques françaises

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Secrétaire général du bureau de recherches géologiques et minières

M. Jean Monsempe
Délégué général de l'Union interfédérale des industries de l'habillement

M. Mathieu Prevot
Association française pour le progrès dans le domaine de
l'ennoblissement des textiles

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Minister-Counsellor
Embassy of Spain

Dr. Eloy Guerra
Labour Attaché
Embassy of Spain
Cairo

Don Fernando Díaz Velasco
Commercial Counsellor
Embassy of Spain
Cairo

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Director
ILO Office
Addis Ababa

Mr. E. Pauli
ILO representative
International Labour Office
Geneva

FAO

Dr. A. R. Sidky (Head)
Assistant Director-General for Near Eastern Affairs and
FAO representative for Near East
FAO Near East Office
Cairo

Mr. K. C. Abercrombie
Chief, Investment, Trade and Price Analysis Branch
Economic Analysis Division
FAO
Rome

Mr. R. Eklund
Regional Forestry Officer for East Africa
ECA
Addis Ababa

Mr. D. Faulkner
Regional Animal Production and Health Officer
FAO Near East Office
Cairo

Mr. K. Hamad
Regional Forestry Officer for the Near East
FAO Near East Office
Cairo

Mr. R. W. Harrison
Acting Director
Fishery Economics and Products Division
Department of Fisheries
FAO
Rome

Mr. R. N. Poduval
Regional Planning Economist
FAO Near East Office
Cairo

Mr. J. R. Pollakoff
Regional Food Technologist
FAO Near East Office
Cairo

Mr. S. G. Thieme
Agricultural Products Processing Specialist
FAO
Rome

WHO/OMS

Dr. N. O. Shoib
Director, Health Services
WHO Regional Office for the Western Mediterranean
Alexandria

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Industrial Commissioner
New York

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Inter-regional Adviser
New York

Dr. H. Singer
Director, Policies Division
New York

Mr. M. C. Verghese
Inter-regional Adviser
New York

GATT

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Trade and Development Department
Geneva

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Convener for Africa
Cairo

UNCTAD

Mr. Sahdev Vohra
Director
Manufactures Division
Geneva

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Resident Representative
Cairo

Mr. Manzur Zaidi
Deputy Resident Representative
Cairo

INTER-GOVERNMENTAL ORGANIZATIONS

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First Vice-President
Tunis

AFRO-ASIAN ORGANIZATION FOR ECONOMIC CO-OPERATION

Dr. Mohamed Ali Rifaat
Secretary-General
Cairo

Mr. Mohamed Fouad Rateb
Public Relations
Cairo

EUROPEAN ECONOMIC COMMUNITY

Mr. André Huybrechts
Administrateur principal
Chef du Service des études de développement
Bruxelles

EUROPEAN INVESTMENT BANK

Mr. Henri Leroux
 Conseiller économique à la Direction des études
 Bruxelles

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 Cairo

Mr. Fathalla El-Boghadady
 Second Attaché
 Economic Department
 Cairo

Mr. Fouad Koussa
 Acting Director
 Economic Department
 Cairo

Mr. Elias Al Maalouf
 Second Secretary
 Economic Department
 Cairo

Mr. Ibrahim Hassanali
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 Cairo

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Mr. Gratien Pognon
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 Addis Ababa

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Secretary of the Symposium/Secrétaire du Colloque

Mr. B. D. Nomvete

Secretary of the Commission/Secrétaire de la Commission

Mr. A. Sylla

Directors of Sub-regional Offices/

Directeurs des bureaux sous-régionaux

Mr. A. Ben Abdelmoumen
 (North Africa/Afrique du nord)

Mr. B. Kassé
 (West Africa/Afrique de l'ouest)

Mr. F. A. Y. Jaisey
 (East Africa/Afrique de l'est)

Substantive Officers/Fonctionnaires des divisions techniques

Mr. A. F. Ewing (Special Adviser to Executive Secretary)

Mr. J. H. Mensah (Head of Economic Development Division)

Mr. K. K. Apeadu (Head of Research Division)

ANNEX III

Agenda

- Item 1. Opening addresses
2. Election of officers
3. Adoption of agenda and organization of the work of the meeting
- Item 4. *General Debate*
 - (a) Reports on activities in the field of Industrial development—statement by the Secretariat
 - (b) Reports on institutions for economic co-operation—statement by the Secretariat
 - (c) Country statements
 - (d) Problems of industrial development
 - (i) Problems of industrial development (E/C.7/5)
 - (ii) Policy aspects of industrial development in Africa (E/CN.14/AS/II/2/k)
 - (iii) The experiences of the Central American economic integration programme as applied to East Africa (CID/SYMP.B./12)
 - (iv) Import substitution (E/CN.14/AS/II/2/1)
 - (v) Linkages between industry and agriculture (CID/SYMP.B./13)
- Item 5. *Sector studies*
 - (a) *Engineering industries*
 - (i) Engineering industries in Africa—Part I (E/CN.14/INR/AS/II/2/i)
 - (ii) Engineering industries in Africa—Part II (E/CN.14/INR/AS/II/2/i)
 - Engineering Industries in Africa—Part II (E/CN.14/INR/AS/II/2/1/Cor.1)
 - Engineering industries in Africa—Part II (E/CN.14/INR/AS/II/2/1/Add.1)
 - (iii) Engineering industries in Africa—Part III (E/CN.14/INR/AS/II/2/1)
 - (b) *Iron and steel*
 Iron and steel industry in Africa (E/CN.14/AS/III/23)
 - (c) *Aluminium*
 Africa and aluminium industry (E/CN.14/AS/II/1)
 - (d) *Basic chemicals*
 - (i) Prospects for the development of the chemical industry in Africa (E/CN.14/AS/III/22)
 - (ii) Report on the proceedings and recommendations of the inter-regional seminar on the production of fertilizers held at Kiev (FERT/CONF.1/REPORT)

- (e) *Forest-based industries, and pulp and paper*
 - (i) Development of forest industries (E/CN.14/AS/III/20)
 - (ii) Development of forest industry in Africa (E/CN.14/AS/III/3)
 - (f) *Building materials*
Building materials industry in Africa (E/CN.14/AS/III/1/5)
 - (g) *Textiles*
 - (i) The textile industry in Africa (E/CN.14/AS/III/24)
 - (ii) Textile industries in developing countries (CID/SYMP.B.7)
 - (h) *Agricultural industrialization*
 - (i) Economic significance and contribution of industries based on renewable natural resources (E/CN.14/AS/III/1/7)
 - (ii) Some essential requisites for industrial development of renewable natural resources (E/CN.14/AS/III/1/7)
 - (iii) Food and food products industries (E/CN.14/AS/III/18)
 - (iv) Industries processing agricultural products other than food (E/CN.14/AS/III/19)
 - (v) Fisheries industries (E/CN.14/AS/III/21)
 - (iv) FAO's relations with industry through the freedom from hunger campaign (E/CN.14/AS/IV/3)
 - (i) *Development of small-scale industries in Africa*
 - (i) Development of small-scale industries in Africa (E/CN.14/AS/III/25)
 - (ii) The role of small-scale industry in African industrial development (CID/SYMP. B./14)
 - (iii) Issues and policies in the promotion of small-scale industries (CID/SYMP.B./6)
- Item 6. *Selected aspects of industrial development*
- (a) *Industrial programming and project evaluation*
Industrial project evaluation (CID/SYMP.A./2)
 - (b) *Training of technical and managerial personnel*
 - (i) The needs of manpower and training of technical and managerial personnel (E/CN.14/AS/IV/9)
 - (ii) Aspects of planning to meet manpower requirements in connexion with industry (E/CN.14/AS/IV/8)
 - (iii) The United Nations training programme in industrial development and planning for the African government officials (CID/SYMP.B./4)
 - (iv) Training of technical personnel for industrialization in the development countries (CID/SYMP.B./10)
 - (c) *Issues in the financing of industrial development*
 - (i) Issues in the financing of industrial development (CID/SYMP.B./1)
 - (ii) Industrial finance in four African countries (E/CN.14/AS/IV/6)
 - (iii) External sources of financing (E/CN.14/AS/VI/4)
 - (iv) Financing of industrial development with particular reference to Africa (CID/SYMP.B./11)
 - (d) *Institutions and techniques of industrial research*
 - (i) Industrial research in Africa (E/CN.14/AS/IV/5)
 - (ii) Some aspects of industrial research with particular reference to Africa (CID/SYMP.B./3)
 - (iii) Transport, natural resources and power (statement by United Nations)
 - (e) *Export of manufactured products—problems of supply, marketing and promotion*
Industrialization—Economic integration and transport (E/CN.14/AS/IV/7)
 - (f) *Industrial standardization*
 - (i) Standardization in Africa (E/CN.14/AS/IV/4)
 - (ii) Report of the inter-regional seminar on the promotion of industrial standardization in developing countries held at Helsingor, Denmark

(g) *Health aspects of industrialization*

Health aspects of industrialization (E/CN.14/AS/IV/2)

(h) *Industrial statistics in Africa*

Industrial statistics in Africa (E/CN.14/AS/IV/10)

Item 7. *External resources in industrial development*

(i) Technical assistance for industrial development—The African experience (E/CN.14/AS/V/3)

(ii) United Nations technical co-operation activities for industrial development (CID/SYMP.B./8)

Item 8. *Any other business*Item 9. *Adoption of report**Plenary sessions:* Items 4, 7, 8 and*Committee I:* Item 6 (Selected aspects of industrial development)*Committee II:* Item 5 (Sector studies)

ANNEX IV

Speech delivered by Dr. Mustafa Khalil, Deputy Premier for Industry and Mineral Resources, at the Inauguration of the Symposium on Industrial Development in Africa—as deputy of His Excellency El Sayed Gamal Abdel Nasser, President of the United Arab Republic

In the name of God, the kind, the merciful.

In the name of President Gamal Abdel Nasser, President of the UAR, we inaugurate the Symposium on Industrial Development in Africa.

I have the pleasure to convey the greetings of the President of the UAR and his wishes for the success of this important and historic Symposium in realizing the aspirations of the liberal and developing peoples of the African continent.

Gentlemen,

I seize this opportunity to welcome you on behalf of the UAR people and express our happiness at meeting you here as representatives of your friendly countries and peoples, standing together in a brotherly united effort to promote the progress of our glorious continent. Africa is striving today to wipe out the remnants of a long imposed stagnation, trying to catch up with the technical and industrial progress achieved in international fields and to develop its newly liberated economy on a sound, well planned scientific basis in the light of modern methods.

We are proud and happy that the United Nations chose to convene this Symposium in the UAR. Our country has been working sincerely and seriously at rebuilding its economic and social life, co-operating positively and conscientiously with African and other developing countries, as well as with the advanced ones which believe in peaceful co-existence, equality and respect for the people's will.

As the eastern and western civilizations mingled over our African territory, they seriously affected the development of the ancient Egyptian personality. This mingling, coupled by its inherent capacity enhanced its experience and thus enabled it to face and outlive the repeated blows dealt by Imperialism and exploiting powers throughout ancient times.

In these difficult events our country has delved heroically and emerged enriched with valuable impressions of the different cultures and civilizations with which it has come into contact. It is these acquired experiences that qualified the Egyptian people with the necessary capacity and perseverance that are essential for a nation to achieve what has been achieved in the last thirteen years, i.e. since the glorious revolution of July 1952. In spite of the tumbling set up caused by despotic rule, by ruthlessness and exploitation, we were able to shake off the burden left by long years of dark and unjust rule and start building up a brand new socialist society. We delved with confidence into the strife of the great changes in order to provide means of prosperity and establish justice for all.

At first, the outlook was rather gloomy and crowded with dilemmas: serious deterioration of the economic sector which was on the verge of explosion due to an ever-growing population and no corresponding increase in the national income, almost complete stagnation in the cultivable areas, over and above, a rather meagre contribution of industry to the national economy.

This sad state of affairs was not limited merely to retarded economy and unfair land and wealth distribution. National economy was wholly owned or controlled by imperialists and foreign monopolies. Banks in Egypt were owned by foreigners who exploited national savings to invest them in projects of no benefit whatsoever to the country. The same applied to insurance companies and commercial agencies concerned with exports and imports.

Under these circumstances our economy depended on one single raw material, namely, cotton which represented more than 85 per cent of our total exports.

It was therefore natural that the newly adopted socialist policy be coupled with great efforts in the field of industry in order to liberate our economy from the limited sphere that paralyzed it before the revolution and free it gradually from complete dependence on agricultural production.

The UAR Charter stipulates that our great national task incumbent upon our policy rests upon three essential points and express all its national principles.

We must wage war against imperialism with all possible means and efforts, disclose all its secrets, and attack it in all its hiding places.

We must work towards establishing peace, because only thus can we find the one opportunity to safeguard national progress, "ensure International co-operation and prosperity for all the world because all the nations must enjoy the right to live prosperous, without discrimination".

It is stipulated in the Charter that international co-operation to ensure prosperity for the whole world is a natural extension of the fight against imperialism... against exploitation and the logical form of behaviour to attain peace.

Prosperity is indivisible and international co-operation to attain it is the safest assurance to attain world peace. Peace cannot survive in a world based on different social strata.

International co-operation for world prosperity is the only hope to achieve peace.

These differences between nations should be smoothed out and replaced by love instead of hatred.

International co-operation for prosperity on behalf of advanced countries is the only human form of thinking for all alike.

Industry is the basic support of national entity and can realize the greatest economic and social aspirations.

Industry is the creative power that complements a well-studied, objective planning and renders possible the execution of its programmes without difficulty. It is not easy to arrest the advance of industry, since it can expand the volume of production in a revolutionary decisive manner.

We must tackle industry objectively, taking into consideration the economic and social evolution.

From the economic point of view, we have to turn our attention to the latest scientific developments.

We must set aside the old belief that the use of machinery will not open a wide enough field for hand labour since modern mechanization requires a minimum of human power to work it.

This might be true at present but will be no longer correct in the far future. New machinery can speed up the volume of production, this in turn can invade new and wider industrial markets thus opening new opportunities before workers.

Gentlemen,

The greater part of mineral and natural resources has not yet been discovered, only scientific and industrial efforts can force the earth to disclose its wealth for the service of humanity.

These resources can therefore be the backbone of heavy industry, and this in turn will help in producing new productive tools.

Heavy industry should be given particular attention since it is the basis for future modern industry.

Local industries must be established either on a small or general scale in both the agricultural and mineral domain. This will enhance their market value, thus increasing industrial production, and offering greater opportunities for hand labour.

Attention should be given to consumption industries which offer opportunities for work, and answer the needs of the consumer, increase our hard currency funds, expand our exports to new markets and give us a greater chance in commercial competition.

Besides, food industries are of great help in stabilizing rural economy and are in great demand by markets in developed countries.

From a social point of view, industry helps to establish among human beings the equilibrium necessary between production and consumption.

In fact, industry is the practical support for effective revolutionary rights, which labourers have been enjoying since the issue of the 1961 socialistic laws. These ensure minimum wages and positive participation in administration, as well as a share in profits and of seven hours work per day.

Programmes of industry included in the second economic and social plan development aim at increasing the annual production of crude petroleum to 12 million m³, of iron ore to 1,577,000 tons, spun cotton to 199,000 tons, woven cotton material to 107,000 tons, spun wool to 13.6 thousand tons, woven wool to 5,000 tons, artificial fibres to 19.3 thousand tons, spun jute to 19,000 tons, cane sugar to 835,000 tons, food oil to nearly one million, fertilizers to 7 million tons.

Gentlemen,

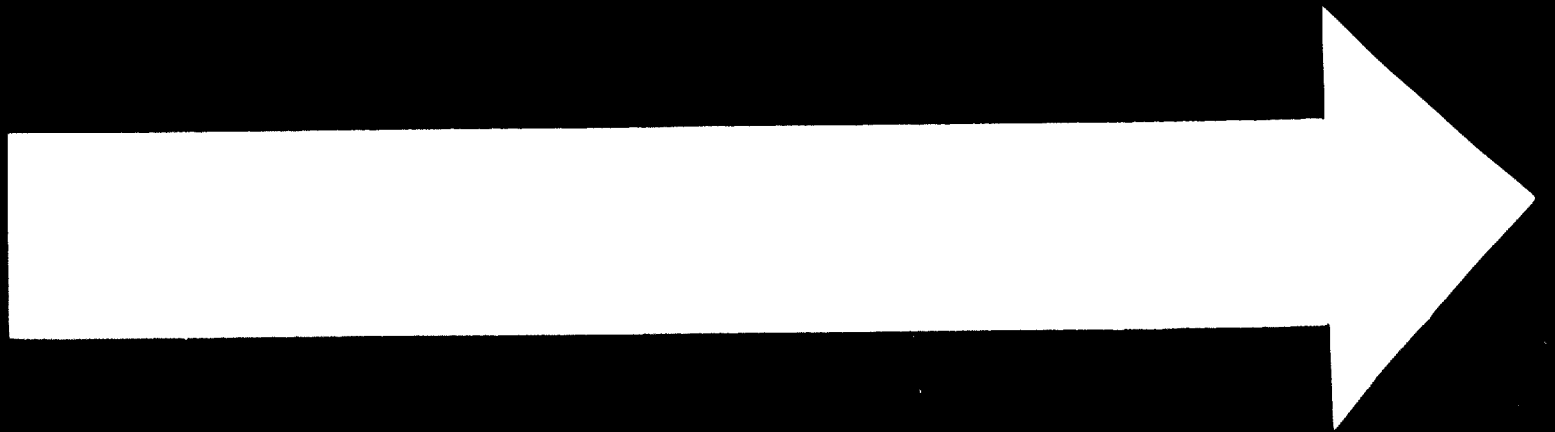
The experience of the UAR in the domain of industrial development is worthy of scrutiny as a living example of what can be achieved by a developing country with limited resources and a newly acquired independence. Inviting you to study our experience does not in the least imply that it is applicable in some other country with different circumstances. Its study may present the opportunity of acquiring experience, and discovering the results of the experiment and the mistakes made while applying the plan, in getting to know the extent of available possibilities that can be recruited to meet the needs of the masses deprived for ever so long, to consolidate economic independence, eradicate the evils of retardation, and catch up with the world progress in all respects.

From the onset our Revolution has believed that no change could be brought about in our social set up without applying an industrial scheme that would increase our resources, establish a just distribution of wealth and provide fair opportunities for all.

But the obstacles that stood in the way were numerous, as in the past no real attention was given to industrial concerns and that is denoted by the fact that the invested capital in this field did not exceed 12 per cent of the total capital invested in the various companies. Consequently, in Egypt, up to 1952, the contribution of industry to the national income was a meagre 10 per cent.

Among the causes that retarded industry here, we can point out the lack of well-studied scientific planning which was not available then. So, naturally, this planning needed to be given the right attention to enable the country to step rapidly forward so as to overcome obstacles and realize the set aims.

The progress so far achieved in the industrial field was made possible mainly because we closely abided by scientific planning and the wilful drive of the masses to reach the aims eagerly desired. In its turn, this led to hastening the implementation of the first industrial programme in Egypt, and which cost L.E. 330 million and was achieved in three years instead of five, that is, before starting the all-inclusive national plan intended for the social and economic promotion, to raise the national income in one decade. Industry had an important role in realizing the development aims. The first five-

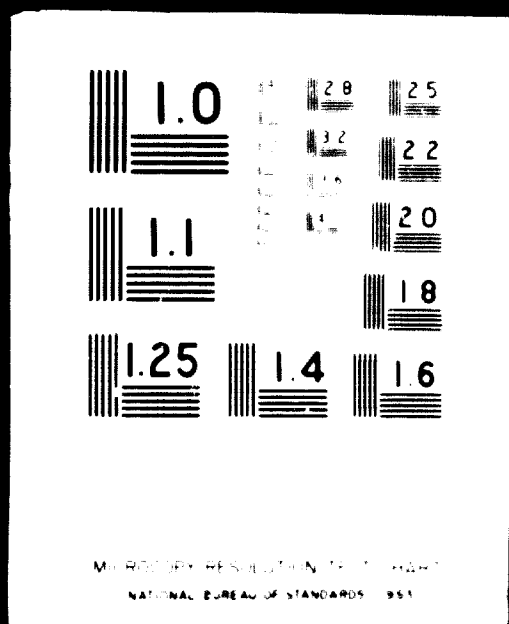


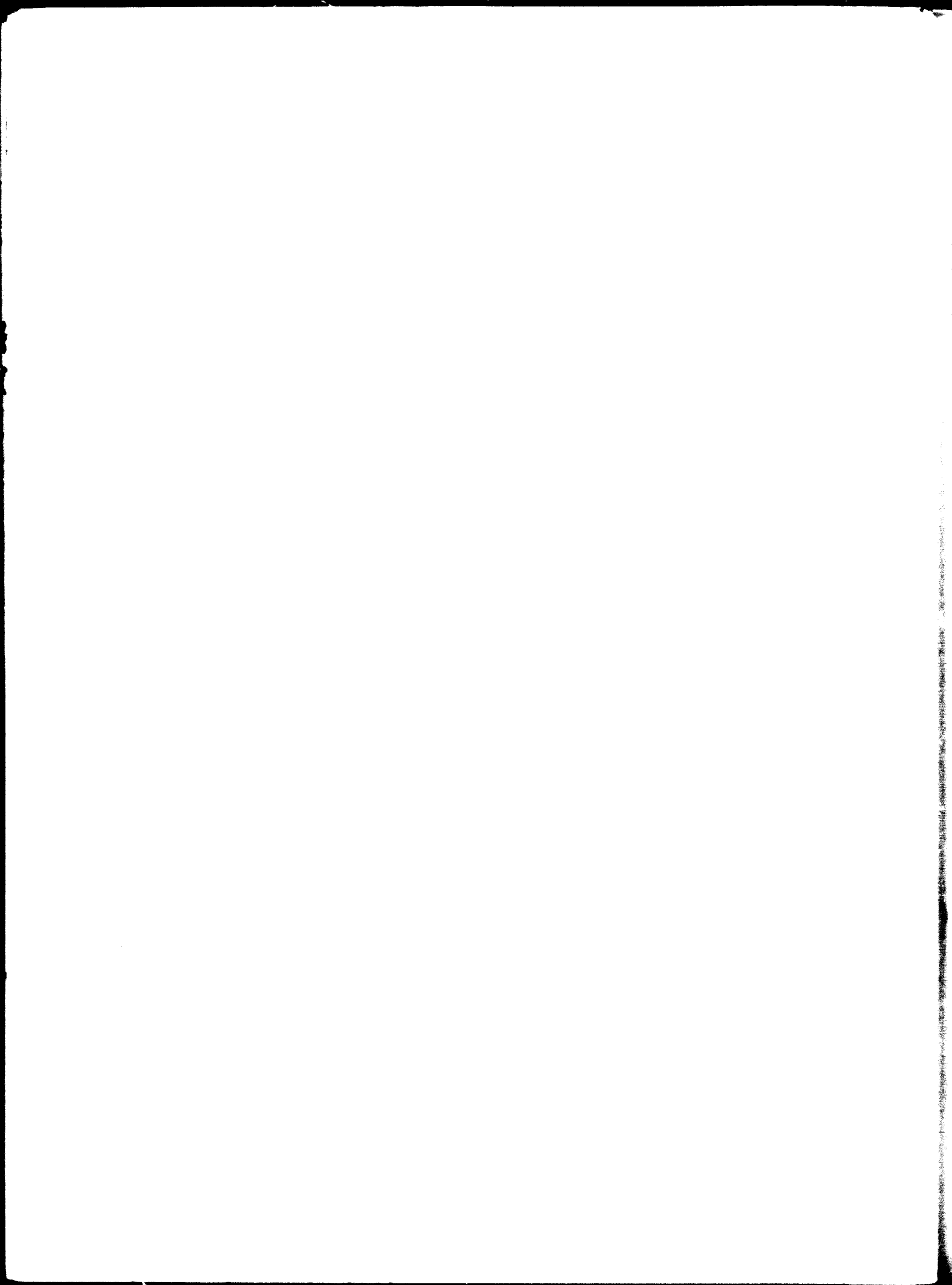
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year plan—executed between 1960/61 and 1964/65—comprised several important industrial projects, their cost totalled some L.E. 800 million besides L.E. 140 million earmarked for electric projects.

The second five-year plan was started in mid-1965, and comprises the third industrial programme which is intended to consolidate the heavy and basic industries thus furthering our productive capacity and industrial revolution, their cost was estimated to amount to L.E. 1,000 million.

These industrial projects have changed and will go on changing our social set up in terms of aims and figures as denoted in the researches submitted by the UAR delegation to this Symposium.

We take pleasure in inviting you to study our experiment in the field of industry and shall be pleased to hear your comments and criticism as these can improve our efforts and hasten our drive towards further progress.

Gentlemen,

The problems and obstacles our country had to face and overcome represent in a general way what your continent has to endure. I am sure each delegation has brought with it a number of such problems that can be discussed here, and which sprout from similar roots, though they may have different details.

Our rich continent produces 98 per cent of diamond, in the whole world, 40 per cent of the gold, 87 per cent cobalt, 70 per cent palm oil, 60 per cent cocoa, 28 per cent ground-nuts, 25 per cent copper, 25 per cent tin, 17 per cent coffee, 50 billion tons iron reserves and over 50 per cent of the world's reserves of bauxite, phosphat. and manganese.

This continent, so rich with natural resources, has lived through the ages in poverty, most of its peoples deprived of a fair share of its wealth, with just a bare minimum to keep them alive.

The African nations are now on the way to liberate their countries and recover their natural resources. As each flag of freedom is hoisted in a newly independent country, the nation finds itself facing a number of problems, treasuries are empty, if not burdened with debts, natural wealth controlled by foreign concessions; sometimes a serious shortage of qualified staff with technical and scientific knowledge and experience necessary for carrying the duties required of an independent country.

These African people go on striving to stabilize the corner stones of independence, spurred by the memory of the victims who fell during the fight, and whose blood was shed as a price. All these people, one after the other, face the problem of securing the funds and foreign currencies needed for constructive investments and for meeting the people's expectations. At such moments the African finds himself forced to choose between accepting foreign exploitation hidden behind the flags of apparent independence, or refusing to have that independence bared from the means of liberating him, and to face all costs of exploitation. He has to venture on a hard path in order to attain his goal.

The African countries, like other developing independent countries that are now emerging with great expectations after long years of retardment undoubtedly need the co-operation of the more advanced states to build up and consolidate their newly-formed structures. These nations certainly need a clearly set up scheme of co-operation with the developed countries in order to avoid being lured into the easy path which may lead them back to their unhappy past. This scheme should conform with the general framework of international co-operation that is based on reciprocal benefits to all participants, well above petty exploitation and greed because, as we all know, a liberal national economy is the basic criterion and guarantee of true independence.

Equally important also is the re-organization of relations between the developing countries that produce primary and raw materials, and the countries with advanced industries, on sound foundations that would safeguard the interest of both sides and restore faith where despair and doubt had settled for ages.

It would be advisable that this Symposium comes to realize the importance of executing the recommendations put forward by 84 developing countries at the Trade and Development Conference held in Geneva in 1964, namely:

- I. Economic relations must be established on the basis of mutual respect for their sovereignty, the right for self-determination and no interference in domestic affairs.
- II. All countries must co-operate in setting a new world trade system to promote and increase the exports of developing countries.
- III. Advanced countries must reduce, or abolish customs barriers and formalities now imposed and in particular with regard to the products of developing countries.
- IV. Advanced countries that are members of economic regional organizations must agree on trade politics ascertaining that the integration of their economy will not affect their imports from developing countries.
- V. International assurance of ever-increasing international financial aid to expand the volume of exports of developing States, and hastening their economic progress.
- VI. Countries must allot a large share of the funds saved due to disarmament to improve economic expansion in developing countries.
- VII. Advanced countries and international organizations must take a positive stand towards the public sector in the developing countries without any financial, technical or commercial discrimination because of its important role in speeding up industrial production and in increasing their exports.
- VIII. To establish a permanent secretariat for this Symposium, which will work in co-operation with the African Organization Economic Committee and the UN Centre for the development of Industry and Specialized Agencies to co-ordinate plans for industries between African countries on a continental level as one complete whole, not divided into geographical regions.

Gentlemen,

The attempts of our African developing States to achieve economic expansion after their political liberation, cannot take place in a vacuum ... This is a difficult and complex task that requires regional and international united efforts. No doubt our African States which have suffered from problems more or less similar, are impressing need for a closer co-operation and integration so as to make use of the resources and experiences available in some of them, for the benefit of the continent as a whole We shall not be able to carry on our co-operation and integration if we remain isolated from the developed countries where possibilities and experiences are found Nevertheless, these countries must clearly realize the essence and depth of the evolution at hand in our countries and our determination to have no flaw marring our freedom and independence while concluding bilateral agreements.

It is also important, during this decisive period in the history of world development that the UN and its Specialized Agencies should increase the technical and material aid to African liberated countries, in order to stabilize their sovereignty, raise their standard of living and give them the opportunity to participate with the developed countries in building up a new world where equality, love and peace will prevail.

We hope that the discussions of the reports and other valuable topics on the agenda of this Symposium would lead us to constructive decisions that will consolidate co-operation on the regional and international level, help us to make use of our natural resources, and the international and bilateral agreements and aids, for the benefit of building up and developing our liberated countries.

Gentlemen,

Allow me to express, once more, in the name of the UAR the very best of wishes for the success of this great Symposium. I hope you will enjoy your stay in the UAR, Cairo is both thrilled and proud to receive you.

I also take this opportunity to express my sincere thanks to the responsible members of the Economic Commission for Africa, the United Nations Centre for Industrial Development and all the specialized African agencies that have participated to make a success of the preparatory work of this Symposium.

Before closing, I should like to extend my sincere thanks to the Secretary-General of the Arab League for its close co-operation.

Thank you.

ANNEX V

Speech by the Chairman of the Economic Commission for Africa, the Honourable Tom Mboya, Minister of Economic Planning and Development, Kenya, at the opening of the Industrial Symposium, Cairo, 27 January 1966

The convening of this Symposium reflects the radical change in thinking about the economic development of Africa within recent years. Not more than five years ago it was still thought that the continent was condemned to remain indefinitely a supplier of raw materials to the developed world and an importer of manufactured goods. Now this approach has been wholly discredited both within Africa and even by some of the people and agencies who previously believed in it.

The decision to set up a United Nations Organization for Industrial Development has set the seal of international approval on the new approach to the economic development of Africa and other developing areas and to the division of labour between the different countries of the world. But industrialization will not happen of itself: we must plan and prepare for it. This Symposium is an appropriate moment for us to take stock of the extensive work carried out by ECA on industry in the last four years and to set our course for the future, on the basis of co-operation and African solidarity.

Africa's basic problem is to remove widespread poverty and the economic insecurity caused by dependence on the exports of raw materials. In its initial stages economic development can proceed for a long time through the export of agricultural and mining products. But experience shows that in relation to the increase in the world prosperity, markets for agricultural products grow relatively slowly. Meanwhile, we in the poorer countries are faced with a rapid growth in population and with the higher standards of life demanded by the masses. It has been calculated that a 1 per cent increase in the per capita income of an industrialized country increases the demand for food and raw materials by only 0.6 per cent, but that the same increase in per capita income in a country importing manufactured articles will lead to an increase of 1.8 per cent in the demand for imports. Superimposed on this has been a tendency for the terms of trade to move against the less developed countries. Unless we in Africa built up quickly our domestic sources of supply for enough of the industrial products which are required for the modernization of our countries, we will either become increasingly indebted to—and hence politically dependent on—foreign countries, or have our progress undermined by balance of payments difficulties.

Our countries have a need to increase the production of agricultural commodities, both food and raw materials, for domestic food markets, for domestic industrial enterprises, and also for export. But both history and contemporary experience teach us that exclusive dependence upon agriculture is not a viable basis for development policy. Industry must play in Africa the same part that it has played elsewhere in raising standards of living and providing increased employment opportunities for the masses. We do not face a choice—we do not have to choose industry and agriculture. There

is no contradiction between agriculture and industry and we must reject those who come to tell us that our future lies only in agriculture. We must equally reject those who try to persuade us that it is not yet ripe for industrial development in Africa. We must plan for a balanced development of the economy so that these two sectors support and reinforce each other. It is particularly unacceptable for African countries with such a large proportion of their labour employed in agriculture to get into balance of payments difficulties through importing food to meet the growing demands of the population: such a situation clearly demonstrates a failure of public policy on the part of our countries. But industrial development has so long been neglected that a supreme effort is needed to correct the lopsided structure of the African economies.

I should particularly like to draw your attention to the importance of heavy industry which can produce machines capable of producing more machines and thus augment steadily the real capital of a country, while making its economic development less dependent upon external influences.

Irrespective of economic and social systems, the pattern of successful industrialization everywhere has shown the rapid development of the heavy industry sector.

Our knowledge of the state of industry in Africa—what is being done or planned and the future perspectives—is still steadily growing. Nearly four years ago the ECA launched its industrial programme with a study entitled "Industrial Growth in Africa." In this paper it was argued that Africa could reach broadly the present levels of economic development of Western Europe by the end of the present century by approximately doubling its agricultural output per head and by a 25-fold increase in industrial production per head. The implications of such a structural transformation of Africa are that the share of agriculture would fall from 35 per cent in 1960 to 20 per cent by the end of the century and that of industry rise from 20 per cent to 40 per cent. It is only required that total industrial output increase at about 8 per cent from 1960 to 1980 and thereafter at 9 per cent for this target to be reached. Considering the small base from which we start, it is apparent that the objective of bringing Africa's industrial potential to the projected level should be fairly easy to achieve given sound policies and a steady will. In fact, when judged by the targets in some development plans in Africa these growth rates appear to be quite modest. In the scheme for co-ordinated industrial development in the East African Sub-region discussed recently at Lusaka, it was implied that with realistic planning the level of gross domestic product in that area could increase from a little under US\$ 5½ billion in 1961 to over 10 billion in 1975 and that gross industrial output could increase by nearly 3½ billion dollars. A scheme implying similar orders of magnitude of growth is put forward by the recent ECA mission on economic co-ordination in Central Africa. I have cited these figures to illustrate the vast yet perfectly realizable perspectives. How far such expansion will go towards closing the gap between Africa and the developed countries by the end of the century naturally depends on the rates of growth achieved by the developed countries themselves. Our main concern however is to grow as fast as we can and not just being worried about the date when the gap will be closed.

Whatever industry we attempt to build, the same sort of problems arise. An accurate knowledge of natural resources is required. Although there is much more to be learned, we already know that we have in Africa the natural resources to feed a vast range of industries. Cheap energy has to be obtained. While Africa is rich in energy resources, only a fraction of them have been harnessed. Industry cannot grow without efficient transport. But we can get ourselves out of the vicious circle since new transport links can themselves be justified in strictly commercial terms by the specific development possibilities now opened up. These three subjects—natural resources, energy and transport—are vitally important, but they are not on the agenda of this Conference.

We need technical studies to establish the economics of specific industrial projects and their relationship to other projects. We have to acquire and apply the most appropriate techniques, which partly means, creating channels for transferring technology from other areas

to Africa, and partly a substantial increase in applied research on African problems. Industrial projects have to be fitted within a programme which in turn would be woven into the national development plan. Projects have to be developed in a sequence, from the preliminary study through the economic and technical feasibility studies to the engineering studies on the basis of which tenders can be invited and the building of the industry can start. Manpower at all appropriate levels has to be trained. Finance has to be found and incentives provided, including frequently tariff protection, so that new projects are profitable—and this applies just as much whether it is the state or a private entrepreneur which is building the industry. And here we have to distinguish between commercial profitability and national, or even multi-national, profitability during the whole revenue-earning life of the industrial equipment. But at all times adjustments can be made from the point of view of national economic profitability allowing for the fact that the real cost of a project to the economy may be greater or less than the cost to the enterprise. A variety of policy devices can be used in assisting industrialization including pricing policy, protective duties, taxes and subsidies.

There is yet another major consideration which lies at the heart of ECA's thinking on industrialization and which should, I suggest, be a major theme of this Symposium. African development plans have so far been drawn up largely in isolation one from another. There are those who argue for an all-African plan to be drawn up immediately. But at the present stage most of us believe this approach to be unworkable. There is of course much scope for the development of small and medium scale industry to serve national markets. But there are many industrial projects which are not feasible on a national scale but become so when undertaken for groups of countries, owing to the advantages of international specialization and the importance of economies of scale. This is the essence of the case for sub-regional integrated development. But this should not be confused with common markets in the European sense of the term. In part of Western Europe a common market has been established, grouping together advanced economies whose established industries can gain wider markets and where the removal of barriers to trade can facilitate further growth. In Africa our main problem is not the liberalization of trade: we have to promote the development of industries which do not now exist, by co-ordinating the efforts of groups of countries.

The ECA has carried out comprehensive studies on industrial development possibilities in each of the four sub-regions of Africa; there have already been meetings to discuss these and more are planned. The Maghreb countries have established common institutions at the ministerial and expert level which they are running themselves, although with assistance from the ECA. They are not only carrying out industrial studies in greater and greater depth, but are actively and regularly negotiating among themselves on their industrial development. The recent conference in Lusaka recommended the establishment of similar institutions for the East African Sub-region, the Governments of which are now in possession of a most comprehensive series of preliminary industrial studies covering almost all sectors. These countries also are counting on continuing help from the ECA secretariat.

Five of the six countries of Central Africa have also, through the Treaty of UDEAC, established their own permanent institutions and it is to be hoped that a way will shortly be found for the association of the sixth country in the sub-region, the Democratic Republic of the Congo. The ECA through its recent mission has prepared a comprehensive report now in the course of being finalized for consideration at a meeting of the Central African Sub-region to be held in April.

At Bamako in October 1965 the countries of the West African Sub-region examined a number of preliminary studies and have subsequently made progress in the iron and steel sector, again by the setting up of their own machinery. The ECA secretariat is now in the course of preparing a further series of sector studies which will be considered at a conference of the West African Sub-region to be held in May, when it is hoped that permanent institutions for economic co-operation in West Africa will also be established.

The picture which is emerging is of four sub-regions which have or will shortly have their own permanent institutions. Moreover, each sub-region is already or will shortly be in possession of a comprehensive series of preliminary industrial studies. Some of the projects cut across sub-regions, e.g., copper fabrication. The secretariat hopes to prepare before the end of 1966 a continental inter-industry balance on the basis of the sub-regional balances. The Commission has also established a Working Party on Industry which will make annual review of the sub-regional activities with a view to ensuring that these are not in conflict with eventual economic co-operation and integration on a regional basis. The phase of preliminary study will soon be over and it will be possible to concentrate efforts and resources on the next steps. I should like to consider these briefly.

First of all a massive effort is required to prepare feasibility and engineering studies. Africa has to acquire its own machinery for this purpose and train its own personnel. Meanwhile it requires, and will continue to require for some time, extensive assistance from outside the continent. This can be done partly through the United Nations Special Fund and partly by approaches to countries with bilateral aid programmes, many of whom have shown themselves ready to help. Within the sub-regional approach requests for feasibility and engineering studies have to be grouped, since a number of the industries are being planned to serve the markets of several countries for related products. In addition, whether it is for small- or large-scale projects, we need access to reputable organizations and for this purpose much more could be done by the World Bank and the United Nations Development Programme to establish industrial promotion and advisory services, both at the national level, as has been done in Tanzania, and at the sub-regional level, as is being done in the Maghreb.

We need to augment rapidly facilities for training African manpower for industrial development at the managerial and professional-technical level, at the middle level and for the production line. At the highest level we shall continue to take advantage of the overseas training facilities offered by the developed countries. But all at levels we can do much more within Africa by making increased use of training facilities which already exist in a number of countries, by building new institutions to serve several countries, especially in advanced technological training and by training within enterprises.

Industrial development on the scale now envisaged will require massive capital formation. Much more can be done to generate savings domestically and indeed in large measure an increase in domestic savings is the automatic by-product of growth. Yet we must continue to obtain for a long time to come external finance, particularly at the earlier stages of our efforts at industrialization. Furthermore, if the burden of indebtedness is not to rise to impossible levels, the proportion of grants and soft loans in total capital assistance will have to be increased. The sub-regional approach and the grouping of countries for the building of the larger industries will increase the attractiveness of such projects for external finance. There have been other recent improvements towards this end, e.g., the World Bank's Convention for the Settlement of Investment Disputes, the scheme proposed by the OECD for a multilateral guarantee of foreign investment against non-commercial risks, and the World Bank scheme being worked out for compensatory development finance. National investment guarantees and investment codes can also be useful. The ECA has already published a preliminary survey and the harmonization of the different national schemes is now likely to be discussed at a sub-regional level. We in Africa must avoid a competitive scramble for foreign capital. In this connexion I should like to refer to the proposed African Council for Economic Co-operation which was first mooted at the Seventh session of the ECA. Detailed proposals are now being examined by African governments. I hope we can co-ordinate and stand *vis-à-vis* foreign capital through such a body.

I do not think this Symposium need spend too much time on discussing Africa's relationship with other economic unions such as the European Common Market and the Commonwealth. The relationships of some African countries to these economic groupings

have been valuable to the countries concerned. Yet it is inevitable that there will be changes as African industrialization and sub-regional integration gathers force. Meanwhile the climate for growing co-operation between African countries and the developed countries is such that there are very good prospects indeed of increasing assistance, particularly for industrial development, whether through technical advice, training or finance. What we need to do now is to define much more closely what we want and above all develop our mechanisms for co-operation among ourselves.

I should now like to make some suggestions about what I think we should try to get out of this Symposium. First of all I believe the time has come when we can define precisely and comprehensively the basic strategy of industrial development in Africa, basing ourselves on the main pillars of co-ordinated development in the four sub-regions as a step towards an eventual all-African approach.

Secondly, while I do not believe this is the right forum for a detailed discussion of each industrial sector—since this can be pursued more fruitfully at the sub-regional level—we can take stock of the opportunities for co-operation between sub-regions which must be identified with the concrete possibilities in each sector.

Thirdly, we should try to arrive at specific recommendations on the steps to be taken on the different aspects of industrial development at both the national and sub-regional level: notably feasibility and engineering studies and the training of Africans in this field; the transfer of technology and applied research in Africa; training industrial manpower at all levels; financing, domestic and external; standardization; incentives for industrial development; industrial promotion and institutional arrangements for co-ordinated industrial development.

Fourthly, since this is one of a number of regional symposia to be followed later by a world symposium, we should before we separate define clearly the position Africa should take at the world symposium.

It is sometimes argued that the programming of industrial development and the training of manpower are such vast problems that nothing serious can be done for a long time. This is wholly wrong. In not more than a decade the UAR has worked out a comprehensive national plan with detailed industrial programmes as part thereof and has already achieved extensive industrial development. Ghana, Ivory Coast and Tunisia are making rapid strides in the same direction. Africans who a few years ago were unknown and regarded as untrained are now in charge of vast projects. We are only at the initial stages of iron and steel production but we can see from India's experience how within the period of construction of an iron and steel works virtually all the types of manpower which are needed to run it can be trained. It used to be thought that it took three years to train a skilled worker, but the UAR is now doing this in about six months. Similarly it is sometimes argued that a blueprint for the whole of Africa has to be drawn up before real industrialization can get under way. This is also wrong. Thanks largely to the work recently done by the ECA, all the elements are now available for a rapid move forward in the industrialization of Africa.

Let me conclude therefore by asserting once again that Africa cannot hope to narrow the gap between the nations of the haves and those of the have-nots without accepting fully the urgent need for public policy that will promote an effective programme of industrialization. Nor do I believe that we can exert enough pressure on the developed nations and the various agencies they still control unless we are committed to co-operation in development planning within Africa. The ECA together with the OAU Economic and Social Commission can help us meet this challenge.

ANNEX VI

Statement by Mr. G. Pogson, Assistant Secretary-General of the Organization of African Unity, on behalf of the Administrative Secretary-General of the Organization of African Unity

It is my pleasant duty to convey the warm greetings of the Secretary General of the Organization of African Unity to you, Mr. Chairman,

and to all the delegations here present, and to tell you that the Organization of African Unity is eagerly awaiting the conclusions of this Symposium.

The fact is that Africa, to consolidate and maintain her political independence, must win the battle for economic development. This means that our continent, while increasing and improving its agricultural output, must find the best ways and means of becoming an industrial power at the earliest opportunity.

This fact, thrust upon us by the realities of modern life, has been stressed time and again by all the African leaders. It has prompted all the activities of the Economic Commission for Africa since that body was first set up, and you all know that the Organization of African Unity has always listed accelerated economic development in general, and industrial development in particular, among the main objectives of African unity.

Nobody, therefore, expects this Symposium to reaffirm—in whatever terms or however forcefully—the need and the advantages for Africa to move forward from the primary-producer stage and to become an industrial power.

The conclusions of many meetings at the regional or sub-regional level, the various studies undertaken by Governments and the vast amount of research work done by the Economic Commission for Africa give ample proof that Africa possesses abundant and varied natural resources, and that she also has men—that is to say, potential technicians. It is now realized that she could have started various industries in keeping with international standards if she had not long been the victim of the colonial system which broke up her enormous market in order to create an easy outlet to stimulate industrialization in the European countries.

Beyond the political framework of States, independent Africa needs to re-group her resources, unite her efforts and expand her markets. The Organization of African Unity has set up the structure and defined the working methods which can overcome with ease the political obstacles to that rapprochement between States on which this aspect of the African development strategy depends. The Symposium would be something of a disappointment if it merely confirmed this strategy. What Africa expects of it is that, duly noting the general trends in national industrialization policies and sub-regional activities, our Symposium will define the main lines for co-ordinated and rationalized industrial endeavour in Africa, and will lead—over and above the many plans—to a choice of new projects, the concrete, lively and convincing expression of an undoubtedly sound proposition, guaranteed by the complementary nature of national economies, the vast proportions of the market, the association of varied and considerable resources, combined efforts co-ordinated plans and joint management.

If this Symposium enables such projects to be undertaken in a short space of time, there can be no doubt that it will have already achieved a resounding success. No doubt, either that it will have enabled a solution to be found to the other aspect of the problem of African industrial development: that of foreign resources. There is no point in each of us here being convinced all over again that, for a long time to come, foreign capital and technical resources will continue to be an indispensable contribution to the industrialization of the African continent and to its over-all struggle for economic development. In this respect, the special usefulness of this Symposium will depend on how far rationalization of Africa's industrialization may lead to a new approach to the problem of outside help. The assistance Africa expects from other continents must not be interpreted as charity, affording the outside world a pretext for controlling our future. It must be regarded as a genuine investment in the framework of world co-operation. We hope the discussions will abundantly prove that African industrialization is a sound proposition both for the Africans themselves and for possible investors in assistance, who will have as security the natural wealth of this Continent and the determination of all Africans to co-ordinate and align their efforts to develop that wealth.

There can be no doubt that the profitable aspect thus demonstrated will open the way for more intensive and sustained international co-

operation for African economic development—a co-operation in which all partners know that they are equal, and that each will have his fair share of the profit.

We in the Organization of African Unity are convinced that this Symposium will mark an important date in the history of Independent Africa because, like many ECA experiences at the sub-regional level it fulfils all the conditions for achieving the major objectives determined by common agreement between the Economic Commission for Africa and the Organization of African Unity. At all events, that is the success we wish you, for you alone can give positive satisfaction to the very real hopes the peoples of Africa are placing in this Symposium.

ANNEX VII

Statement by the United Nations Commissioner for Industrial Development, Dr. I. H. Abdel-Rahman, at the opening of the African Industrial Symposium, Cairo, 27 January 1966

May I first welcome all the participants in this important conference on behalf of the Secretary-General of the United Nations, and also specifically on behalf of the Centre for Industrial Development of the United Nations. My welcome also extends, of course, to the experts and participants from non-African countries and the United Nations specialized agencies and other organizations here represented. The United Nations is most grateful to the Government of the UAR for acting as host to this meeting and for the excellent arrangements for this conference which they have made. I hope, Sir, you will convey to the President of the Republic our gratitude for the opening words which you have spoken on his behalf. Finally, may I also thank our colleagues from ECA, and specially the Executive Secretary—Mr. Robert Gardiner for the tremendous job they have done in preparing and documenting this conference. I believe you will agree that the documentation which ECA has prepared for us here is of great value and significance, even beyond the immediate purposes of this symposium.

Our conference here is the second of four meetings which are being held in the four under-developed regions of the world. Moreover, all these four regional meetings, of which ours here is one, in their turn are preparatory in nature, in so far as they are designed to lead up to and prepare the ground for an international symposium to be held next year in 1967. I emphasize this because when these four regional meetings are completed, African countries will have the opportunity of comparing their problems and decisions as they emerge from this conference, with the problems and decisions of neighbours in Latin America, Asia and the Middle East. Our problems here are of course not identical; but I believe we all agree that we may gain greater insight into our own problems by comparing them with the experience and approach of other regions. For example; the problem of regional and sub-regional co-operation is important in Africa. In this respect, there is useful experience in Latin America, both from the Latin American free trade association and also from the Central American integration programme. This is indeed shown by the fact that one of the documents before us specifically describes this experience to us. None of us would refuse to learn from these experiences what we can. It will be our task in the Centre for Industrial Development in the United Nations in New York to sift and compare the results and the trends of discussion at your meeting here with those of the other regional meetings in order to derive from them the best possible preparation for the international symposium next year. In this connexion, I am particularly glad to welcome among us here also invited experts from the industrially advanced countries which will, we hope, play a leading part at the international symposium. I am happy that they have this chance to ascertain themselves at first hand, and at an early preparatory stage, the ideas brought forth at this meeting. On our side, we must remain conscious that many of the recommendations which may be made here will depend for their implementation on full co-operation with advanced countries, and with the financing institutions of which they are the major contributors.

H.E. the Honourable Tom Mboya has just mentioned the new United Nations Organization for Industrial Development which the General Assembly of the United Nations decided to establish less than a month ago, and you may wish me to give you a few details. The new organization will be an autonomous organization within the framework of the United Nations. Thus, it will have the same status as, e.g. the United Nations Development Programme formed by the merger of the former Special Fund and EPTA, and like UNCTAD, the new trade organization which we may recall received an important impetus here in Cairo from the declaration of the developing countries. The fact that the new industrial organization will be in the framework of the United Nations means that its administrative expenses and its research expenses will be met from the general budget of the United Nations. Its operational activities however, will be met by special voluntary contributions from member countries. I am glad to report to you that there has already been an immediate generous response to the idea of special voluntary contributions for the purpose of furthering industrialization. I recognize with special gratitude generous contributions made by the United States, the United Kingdom, the Federal Republic of Germany, Sweden, the Netherlands and others which have announced their willingness to contribute. These voluntary contributions already amounting to more than US\$ 5 million are now available as additional contributions within the framework of the United Nations Development Programme, earmarked for special additional industrial services. I shall refer later in a little more detail to these additional services. The Resolution of the General Assembly set up a special preparatory committee which will meet in March 1966 to draft the rules and modes of procedure of the new organization. In advance of the meetings of this committee, I am not, of course, in a position to give you much detailed organizational information. The purpose of the new organization and of the additional funds which will become available to it, is to arrange for more effective and more integrated activities of the United Nations aimed at the more rapid and more efficient industrialization of the developing countries, African countries among them. I am sure that the detailed procedures of the new organization will be oriented towards the fulfilment of this purpose.

One of the main features of the new orientation given to the industrialization work of the United Nations will be a fresh approach to the inter-relation between pre-investment and the actual investment or financing process of industry. Hitherto, the approach of the United Nations has been based on the principle of a distinct time sequence between the process of pre-investment on the one hand (consisting of economic and technical feasibility studies), and the subsequent process of finding the finance for the actual investment on the other hand. This picture is reasonable and appropriate when you deal with infra-structure such as transport or power projects, or with agriculture. However, experience has increasingly shown that this approach is inappropriate in the field of industry. We all know how much time and money can be wasted, how much frustration can be experienced, by undertaking extensive and expensive feasibility studies and engineering, only to find that all this effort has come to nothing because the financing sources were not interested; or only to find that the financing sources insisted on making their own feasibility studies all over again, before being willing to consider a financial commitment or even interest. The special industrial services now to be undertaken by the Centre for Industrial Development, and later by the new organization, will be based on the different principle of trying to attract and interest the prospective investor at the earliest possible stage. We want to obtain an early financial expression of interest, a preliminary decision to help with the financing if engineering studies of specified types show favourable opportunities. In this way, we hope to bridge the action gap which now exists between the pre-investment work and actual financing. I think you will agree that this action gap has been a tremendous hurdle in African industrialization, and that African countries have much to gain if the efforts to overcome this hurdle could be successful.

For this reason, the Centre at present and the new organization in future, attach great importance to close relations at all stages of

our work with financing agencies such as the International Bank family, specially the IFC, with the regional development banks such as the African Development Bank in Abidjan, the Inter-American Development Bank in Washington and the new Asian Development Bank in Manila, the European Investment Bank in Brussels and the financing institutions in the main industrial countries. I believe that in developing such relations, and helping to direct these mighty financial resources more and more effectively, into the industrialization of Developing countries we can make a vital contribution, and ideally complement the work done in the regions, and done so effectively here in Africa in collaboration with the ECA.

Although it is too early for me to tell you much organizational detail about the new organization which still has to be decided, I can tell you something now about the substantive contents of our work and about the spirit in which we approach our task. Our main principle is to promote the most rapid and efficient industrialization. Please note the word "efficient". An inefficient high-cost plant, as we all know, can be a liability rather than an asset. For this reason, industrialization to us is much more than the establishment of new factories. It includes also the efficiency of operating of both new and old factories. It includes also the full utilization of existing capacities. It includes the development of integrated industrial systems taking maximum advantage of backward and forward linkages within industry. It includes the orientation of industries towards a maximum contribution to agricultural productivity. Above all, however, we believe that industrialization, to be really effective, lasting and self-sustaining must be securely based in the institutions, policies and capacities of the developing countries. The secret of progressive industrialization in the technically advanced countries lies in the way in which new industries arise, almost automatically and almost effortlessly, out of the natural development of the human and technological resources of these countries. It arises out of their institutions, their policies and their administration geared to the promotion and implementation of new industrial developments. It is a constant process of improvement and new creation. We in the United Nations Centre of Industrial Development believe that our objective must be more far-reaching and more fundamental than to think in terms of specific new projects only. We must try to create the same foundations, the same pools of training and technology, the policies and institutions from which industrialization arises, and which make industrialization effective and cumulative.

In this context, I believe that the regional and sub-regional economic co-operation so essential in Africa and so rightly emphasized in the work of ECA, takes its place as one of the most important aspects in this total picture. Regional and sub-regional co-operation is essential if larger units of more efficient scale are to arise, if duplication and waste are to be avoided, if policies are to be harmonized, and if technological and training facilities of a higher order are to be developed. We are thus very happy to see that emphasis has been given to this aspect in the agenda of this conference and in the preparatory documentation. We look forward to the conclusions which you will reach in this respect. At the same time, we will all agree that this is only one aspect of the problems of industrialization, although an important one, and our deliberations here are not limited to this one aspect.

The approach to our task which we have developed in the Centre in New York can perhaps be best described by giving you a broad outline of our organization. The three major Divisions of the Centre deal, respectively, with specific branches of industry (such as fertilizers, textiles, engineering, etc.), with general problems of policies and programming (including financing, small scale industries and industrial estates), and industrial institutions, research and training. I think it is clear that our broad picture of the need for a secure basis of industrialization is reflected in this organizational structure. I have no reason to believe that the new organization will not find this structure equally suitable for its widened purposes. Our detailed programme of work in the Centre is also based on this broad approach, and falls within the broad divisions which I have indicated to you.

Although a complete policy of industrialization must embrace all these approaches that I have tried to describe to you, we cannot naturally hope in ten working days to cover all these issues in equal depth. It is for you to select those matters for emphasis which you believe are the most important issues for Africa to bring to the attention of the world community at the international gathering next year. There are the issues which are essentially national, relating to projects, policies, resources, training, etc. There are the issues which call for sub-regional or regional co-operation. There are the issues which call for even wider international co-operation, whether bilaterally between countries or multi-laterally through international organizations. All these different types of issues are pertinent to your meeting here, and you will not wish to neglect any of them entirely. Naturally to us in the Centre, it will be particularly important to study your proceedings here for those matters that can be a fruitful basis for international co-operation, and could thus be placed before a world forum next year.

What we hope for from this meeting, then, is an African view which places in proper perspective the measures that are most important in speeding up African industrialization. You can be sure that your recommendations will be very carefully studied in the United Nations bodies—and I am sure also by industrial countries, financing institutions, and by countries in other developing regions of the world. The results of this meeting will be an important element in determining the nature of the international symposium, its agenda and its action. In the United Nations, we shall also study them very carefully for any indication they may give us how we can make the United Nations role in promoting sound industrial development more effective and more integrated. I need hardly say that this latter aspect is of particular value at this moment when the desire for more effective United Nations action is so widespread and has been manifested by the decision to create a new organization. Last but not least, I hope that this conference will also be of value to the individual participating African countries themselves. Ultimately, we all know that the real effort must be made, the real decisions must be taken, in the individual countries themselves. We certainly have a very good start at this meeting with the comprehensive and excellent documents which have been placed before us. I shall be glad to transmit your recommendations first to the Committee for Industrial Development meeting in April in New York, and later to the International Symposium. In conclusion, I hope you will permit me to express once more on all our behalf our gratitude to the Government of the UAR, and to the encouraging words of welcome given to us by Deputy Prime Minister—Dr. Moustafa Khalil on behalf of President Gamal Abdel Nasser, and to the Chairman of the Economic Commission for Africa, the Minister of Economic Planning and Development of Kenya, the Honourable Tom Mboya. May I wish you a successful and enjoyable meeting.

ANNEX VIII

Opening statement by Mr. R. K. Gardiner, Executive Secretary
ECA, on Item 7 : external resources for industrial development
(other than finance)

The international organizations have found it so far particularly difficult to devote to the requirements of industrial development the same degree of attention and resources as in other fields. The conception and methods of operating have been mainly developed for infrastructure or agriculture, and when we try to apply them to industry, they do not seem to work in the same way. Much attention has been given recently to developing different or additional methods of giving technical assistance for industrial feasibility studies, training, etc., and it may be useful for African countries to know of facilities and opportunities now available.

The United Nations Development Programme wishes to devote a higher share of its resources to manufacturing industry. This Programme has now about \$160-170 million available yearly and the amount is expected to increase to at least \$200 million per year over the next year or two. We are particularly anxious to help all devel-

oping countries to make requests for Special Fund projects in the easiest and quickest manner and now we have a preparatory allocation in the form of a fund which we are quite ready to use rapidly and flexibly to help countries to draft industrial requests to the Special Fund. The contingency allowances under the United Nations Development Programme are also available for industrial projects and can be used at short notice as an additional way of meeting those technical assistance requests which are beyond the scope of the regular two-year country programmes.

The United Nations Special Fund, now part of the United Nations Development Programme, stands ready, as in the past, to help establish industrial research institutes, industrial promotion centres, industrial advisory groups, industrial estates and to undertake specific market studies or feasibility studies for major projects or groups of projects. In addition, the Special Fund is now authorized to establish industrial pilot factories and the first project of this kind has been approved last month, for a pilot factory in Rwanda to produce insecticides from pyrethrum. Delegations here may wish to consider therefore quite specifically the potential value to their countries of pilot factories in which new materials or new processes can be tested, and risks greatly reduced by postponing full commercial production until technical and economic difficulties have been solved and problems clarified. The executing agency on behalf of the United Nations Special Fund for such pilot factories will be the Centre for Industrial Development in New York, which will soon become the "United Nations Organization for Industrial Development".

It is reasonable to assume that eventually about 20-25 per cent of the funds of the United Nations Development Programme should be available for industrial projects, i.e.: about \$40 million a year. The share of Africa might well be about \$15 million.

In addition to these funds, the United Nations has recommended special voluntary contributions to finance now "special industrial services". The kind of activities which can now be financed from these voluntary funds are as follows:

(a) *Ad hoc* assignment of high-level experts, whose services may be requested on relatively short notice, to advise on specific questions related to the preparation and implementation of industrial projects;

(b) Assistance of the different stages of new manufacturing projects, particularly the practical problems during the post-feasibility stage of the project, until appropriate financing is assured;

(c) Expert services on an intermittent basis to make available specialists for brief periods of time during the development of the project, whenever the need for the particular skills arises;

(d) Industrial projects involving complex manufacturing techniques in more than one field of specialization frequently require the co-operation of several specialists; *ad hoc* arrangements can be made with specialized institutions or consulting engineering organizations with accumulated experience in the specific field, who are prepared to make available on short notice teams of experts to handle simultaneously the specialized aspects of the job;

(e) In other instances, the situation may require a totally different approach; instead of sending a team of experts to work on the spot, it may be necessary to bring one or more national technicians to the sources of specialized knowledge abroad, either to obtain the required assistance or to learn from first-hand observation the solutions found to technical problems in industrialized areas;

(f) Assistance in solving specific problems which may or may not be part of a field project. Quite frequently, the need arises for technical documentation, computations or data of a particularly complex nature, laboratory analysis of a type not available locally, design work of a specialized nature, etc. Frequently these are marginal aspects of the project concerned, but more often than not, they are key requirements to assure the technical soundness of the project;

(g) Confidential consultations at a high policy level on matters relating either to specific projects of industrial development policies and advice on industrial project promotion problems;

(h) Assignments of a "trouble shooting" nature to solve technical

problems arising in connexion with the operation of plants and machinery, flow of materials, quality control, etc.

The voluntary contributions to finance these special services described already amount to over \$5 million and more can be expected. These new services will form an additional part of the new United Nations Organizations for Industrial Development (at present the Centre for Industrial Development) and are administered jointly by the Centre and the United Nations Development Programme. Requests can be made according to a country's own preference to the United Nations Resident Representatives through the ECA, or directly to the Centre for Industrial Development in New York.

So far, the strengthening of the machinery of the United Nations, through the new orientation of the United Nations Development Programme and of the Centre for Industrial Development—shortly to become the United Nations Organization for Industrial Development—has been described. But there are other major sources of external resources which can be drawn upon to promote industrial development.

Reference should be made to the important contributions the specialized agencies are making in their respective fields for example: the ILO in manpower planning and the training of the industrial labour force; UNESCO in the training of high-level manpower including scientific and technical personnel; and the FAO both in training and in the development of the whole range of agro-allied industries, including food processing and the forest based industries. Three specialized agencies working in the industrial development field have been cited; there are others. Furthermore, all the specialized agencies are part of and drawn on the resources which are available from the United Nations Development Programme.

The bilateral donor countries also, of course, play a very large part and are prepared increasingly to co-ordinate their effort with the United Nations, and in particular the Economic Commission for Africa.

It remains to put the role of the ECA in perspective in this growing effort. The ECA, during the last three or four years, has carried out a wide range of preliminary industrial studies which in the course of this year will have covered almost the whole range of industry in all four sub-regions of Africa. It has also played its part in promoting industrial co-ordination machinery in the sub-regions and promoting generally economic co-operation. It will continue to do so as required. The time has now come when this work has to be carried further forward, to the point where new industrial developments can be realized in practice. This task will fall primarily on the machinery already described, particularly the United Nations Development Programme, the United Nations Organization for Industrial Development and the bilateral donor countries. The ECA will remain constantly available as a promotor and a catalyst, so as to enable African countries to approach the appropriate source of assistance to help them solve a given problem, and carry through their programmes to the stage of final execution. This will be facilitated by the new industrial promotion services ECA plans to establish at its four sub-regional offices.

One final point should be made. In this statement, problems of financing have not been considered since they have been examined under another item of the agenda. However, under the new system the point should be made that the United Nations machinery will now be available for the purpose of contacting possible sources of finance at an early stage and ascertaining that there are reasonable possibilities of finance becoming available before too much money and time is invested in expensive and detailed feasibility, and still more expensive engineering studies.

It may now be convenient to sum up in broad outline what are the appropriate agencies by type of problem or area of activity:

1. Extensive preliminary and prefeasibility studies have already been carried out, concerned primarily to identify specific possibilities of industrial development at the national or sub-regional level. The ECA and the CID will, however, continue to be available to carry out this kind of work.

2. The time is now ripe for feasibility and engineering studies on an extensive scale and these can be carried out by the United Nations Special Fund and the bilateral donors. Such studies can be either for national or multi-national projects. The ECA has played and can continue to play an initiatory role and the detailed preparation of requests from countries or groups of countries can be done with the help of the United Nations Development Programme.

3. Assistance in training of all kinds can be provided by the CID, ILO, UNESCO and FAO in their respective fields. The United Nations Special Fund is in a position to help in the setting up of new institutions whether national or sub-regional, and the bilateral donors are also ready to play a part in this context, in addition to their existing role in training Africans abroad in more specialized fields.

4. The setting up of industrial promotion machinery of all kinds at the national level can be assisted, in co-operation with CID and ECA, through the recruitment, within the normal country programmes, of technical assistance experts. Recourse may be made to contingency funds wherever needed. The United Nations Development Programme through its Special Fund is in a position to help in the creation of specific new institutions.

5. The same applies broadly to the establishment of institutes for industrial research and standardization and frequently this may be more appropriate on the basis of groupings of countries.

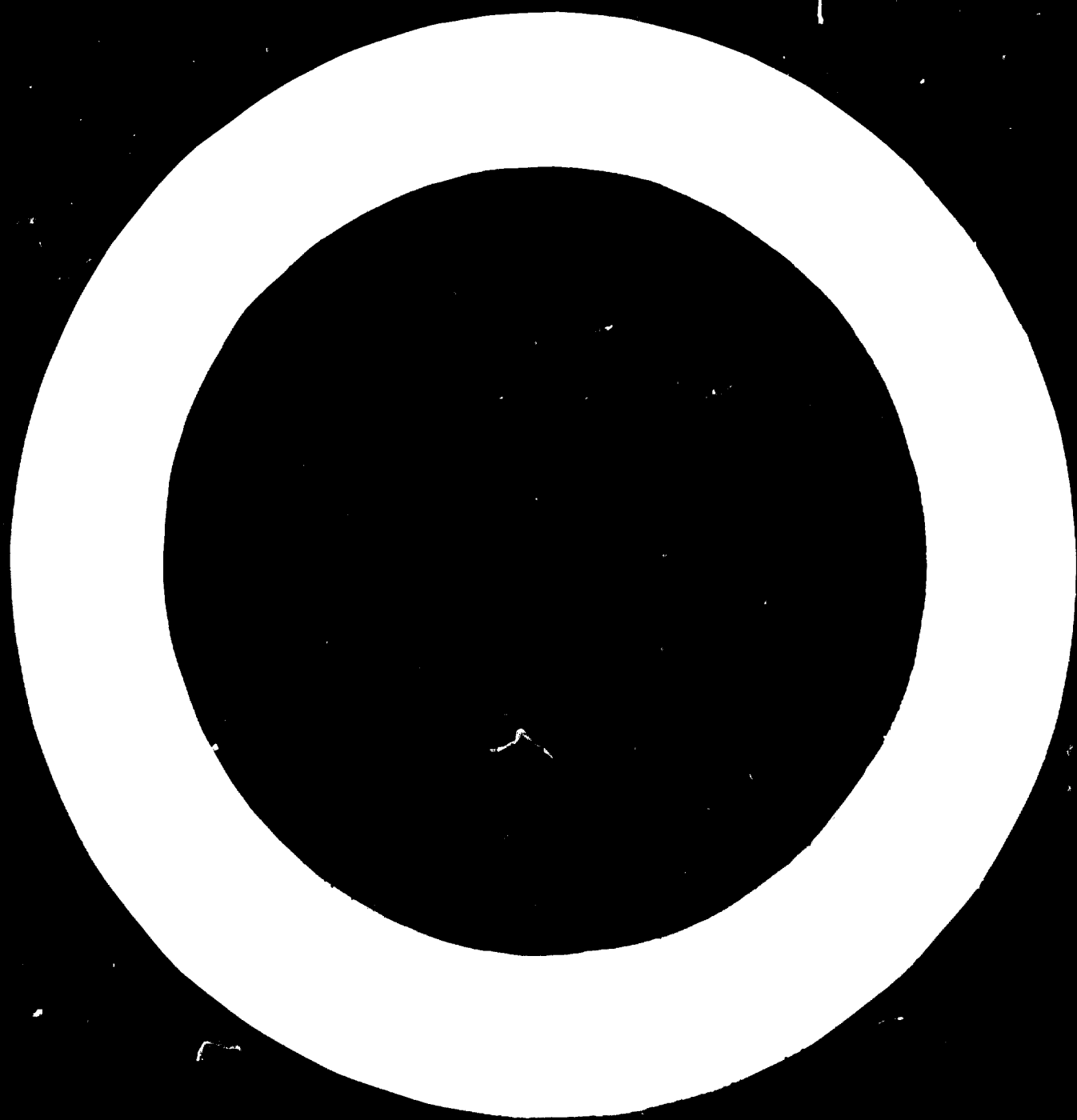
6. For the provision of a wide range of high-level advisory services, the new United Nations special industrial services are now available.

7. The African Development Bank is in a position to play an increasing part in identification of projects and in feasibility studies.

In conclusion, I would like to make two points: the first is that it is, of course, up to the governments of African countries, or where appropriate groups of governments, to make requests to the United Nations Development Programme. In this context it may be useful to remind delegates that the preparation of the programme for the biennium 1967-1968 is now in hand and this is the time therefore to formulate requests in the industrial field.

The second point is that while we have endeavoured in this introductory statement to explain the range of external resources available and the specific facilities offered under the different services, it would seem appropriate for this Symposium to make recommendations so as to encourage both the flow of external resources and to ensure that these resources are effectively used. I have in mind particularly specific recommendations concerning the carrying out of feasibility and engineering studies; manpower planning and training for industrial development; industrial promotion; the promotion of industrial research and standardization; and various forms of technical assistance for industry.





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