

Progress Report on the Implementation of the Decisions of the First Session of the Technical Committee on Natural Resources and, Science and Technology

1. Introduction

1. This report aims at briefly providing information on the level of implementation of the decisions of the 1st meeting of the Committee on Natural Resources and, Science and Technology (CNRST-1). The report covers the period from November 1999 to October 2001. It describes the activities carried out by ECA in direct or indirect response to the directives and recommendations of CNRST-1, and provides information on the activities undertaken by other stakeholders.

2. It is to be recalled that ECA's activities during the above-mention period are carried out within the framework of the biennium 2000-2001 as approved by the United Nations General Assembly and in fulfilment of the mandate given to CNRST by the ECA's Conference of Ministers Responsible for Economic and Social Development and Planning through Resolution No. 826 (XXXII) of April 1996. The planned activities for the biennium 2002-2003 have been articulated within this mandate and in light of the recommendation of CNRST-1.

3. With regard to mineral and energy resources, CNRST-1 took note of the actions taken by ECA to implement the recommendations of the "Second Conference of the African Ministers Responsible for the Development and Utilisation of Mineral and Energy Resources" held in Durban, South Africa, from 21 to 22 November 1997. The Committee noted the importance of these recommendations and asked member countries, ECA and other partners to actively and expeditiously pursue their implementation.

4. With regard to all natural resources, CNRST-1 further re-emphasised that special attention should be given to:

- Upgrading national systems of research related to the application of science and technology for the development of natural resources;
- Protection of environment;
- Participation of women in the development and utilisation of natural resources;
- Establishment of policies which facilitate the participation of the private sector in the development of innovative technologies, as well as in the development of natural resources;
- Investment by member States in the area of research in science and technology;
- Promotion of technologies in new and renewable energy; and

- Co-operation among member States and all other actors involved in the development of natural resources.

5. The report provides information on actions taken to:

(a) Promote and facilitate co-operation among African countries in the areas of natural resources, science and technology;

(b) Facilitate exchange of information and sharing of experiences in natural resources, science and technology; and

(c) Undertake advisory services to member States.

2. Major Developments

6. During the period under review, a number of initiatives have been advanced which will have implications for changing the continent's development environment. Notably these are:

- The adoption of the Millennium Declaration by the United Nations Millennium Summit;
- The adoption of the Constitutive Act of the African Union; and
- The adoption by the 37th Session of Heads of State and Government of the OAU of the Strategic Policy Framework and Programme of Action contained in the consolidated New African Initiative.

7. The initiatives have as a common objective the launching of Africa's development efforts. They further indicate a strong political commitment by African leaders to take full responsibility for the destiny of the continent. The adoption of the Constitutive Act of the African Union is a laudable landmark on the path to African Unity and collective development. These initiatives, together with the ECA's work programme for 2002 and 2003 in the areas of natural resources and science and technology, will provide anchorage for the work of CNRST as they provide a common vision and a structured development framework that should guide the work of the Committee in the future.

3. Activities carried out by ECA

3.1. Mining

8. In response to the recommendations of CNRST-1, ECA's activities on the mining sector during 2001-2002 focused on:

- Harmonisation and promotion of co-operation in the elaboration and implementation of mineral resources development policies and strategies in Africa;

- Promotion of investments in the African mining sector; and
- Promotion of environmentally and socially responsible mining development.

9. In this respect, ECA continued to collaborate with the Southern African Development Community (SADC), Union Economique et Monétaire Ouest Africaine (UEMOA) and Southern and Eastern African Mineral Centre (SEAMIC). ECA has been regularly attending the SADC Mining Ministers Meeting as well as the meetings of the policy organs of SEAMIC. In addition, ECA continued to serve as a member of the Board of Directors of SEAMIC. These three organisations have been very active in harmonising policies, laws and practices impacting on the development of mineral resources in their respective sub-regions. In all these fora, ECA provided strategic support, policy guidelines and exchanged experiences on best practices.

10. SADC has been very active in creating conditions for the development of natural resources. To this effect, it held a workshop on the implementation of the SADC Mining Protocol in April 2001. The workshop reviewed the SADC Mining Programme of Work and examined the successes and failures of each of the sub-committees in which the SADC mining sector is sub-divided, namely, geology, mining and marketing, mineral processing, environment, human resources development and information. The workshop also evaluated developments in the international mining industry, which have impact on the SADC mining sector.

11. The main objectives of the workshop were:

- Improving the institutional framework for the Protocol implementation;
- Developing efficient information flows;
- Creating a climate in which investment is driven by effective stakeholder partnerships;
- Developing a viable small-scale mining sector;
- Improving the competitiveness of skills and the technology base;
- Developing an industry predicated on economic, social and environmental sustainability; and
- Preparing a mining sector strategic plan for SADC through to the year 2020.

12. In UEMOA, member States agreed in November 2000 to adopt a common mining policy and legislation, including a harmonised fiscal code. The main objectives of this policy are:

- The institution of an attractive environment for mining investments;
- The diversification of mining outputs;

- The transformation of minerals where they are produced;
- The co-existence of industrial mines and small informal mining; and
- The preservation of the environment.

13. In SEAMIC, member States approved a new Shareholders Agreement which allows for the transformation of their accumulated financial contributions to the organisation into equivalent shares and proportionate voting powers. In addition, the Shareholders Agreement will permit the participation of other stakeholders including the private sector, as long as their combined shares do not exceed 20 percent of the total shares, and that they pledge to observe SEAMIC's mission and objectives. Also important was the introduction of Performance Contracts. These contracts will regulate the way in which SEAMIC delivers its services to its member States. It is expected that through the Performance Contracts, the (capacity) utilisation of SEAMIC's services by its member States will increase.

14. In addition to attending mining meetings and conferences where the case of sustained mineral development was promoted, ECA was also busy preparing parliamentary documentation and recurrent and non-recurrent publications including newsletters. Advisory services and fieldwork were also conducted specially on small-scale mining. In this respect, the following was carried out:

- Ad hoc expert group meeting on the establishment of a sub-regional programme for the development of energy and mineral resources in Central Africa

15. This meeting, which took place in Douala, Cameroon from 18 to 20 December 2000, was organised by the ECA Sub-regional Development Centre for Central Africa (SRDC-CA). The main recommendations of the meeting were on strategies and programmes for strengthening sub-regional co-operation in energy and mineral resources development in Central Africa and on the revitalisation of the Central African Mineral Resources Development Centre (CAMRDC). With regard to CAMRDC, the meeting recommended that member States should:

- Pay regularly their financial contributions to the Centre;
- Support the activities of the Centre by utilising more often its services;
- Establish better synergies between national experts and those of the Centre;
- Strengthen national institutions responsible for mineral resources;
- Establish national focal points who would be responsible for the activities of the Centre at national level;
- Strengthen national capacities for data collection and processing; and

- Strengthen regional co-operation for the development and implementation of common mapping programmes in border areas.

16. The meeting further recommended that:

- Member States should adopt a common mining policy;
- Harmonise their mining laws and regulations;
- Transform CAMRDC into a specialised institution of the Economic Community of Central African States (ECCAS);
- Strengthen co-operation with relevant institutions responsible for mining in SADC and COMESA; and
- Support CAMRDC in its revitalisation efforts.

17. The Centre was directed to:

- Approach the host country to rehabilitate the headquarters of the Centre so that it can start with its activities as soon as possible;
- Utilise Information and Telecommunication Technologies (ICT) and Geographical Information Systems (GIS) to prepare promotional data;
- Process and publish mineral data provided by member States;
- Explore possibilities to establish partnerships with reputed international laboratories with a view to providing laboratory services to companies operating in the region; and
- Address environmental issues.
 - A framework for co-operation between African governments and the private sector for the development of the mining sector

18. This study is aimed at assisting African countries with mineral economies to establish optional frameworks for the development of their mining sectors. The study suggests that this development requires collaboration between the public and the private sectors where responsibilities, resources, risks and benefits are shared. Through this collaboration higher productivity and competitiveness can be achieved. It further proposes that governments should move away from engaging in production activities and should confine themselves to policy making and regulation. It however, while mining can be considered primarily a private sector activity, governments have an important role to play in order

to accelerate the development of the sector. This role should focus on:

- Strengthening administrative capacity, legal systems and governance;
- Training manpower;
- Establishing databases of geological and other relevant information and developing networks for data and information dissemination;
- Unbundling mechanisms to mitigate and manage risks;
- Creating an attractive environment for infrastructure development with a view to reducing local transaction costs;
- Establishing conducive, modern and competitive legal and regulatory frameworks and fiscal regimes with a view to attracting and promoting mineral investments; and
- Undertaking investment facilitation and promotion.

19. The study also recognises the role of the private sector as a major source of financial resources, technology, and technical skills. It calls for the creation of an enabling environment to attract foreign direct investment and that will help dispel the perception that Africa is a high-risk destination.

- Newsletter: African Minerals and Energy Update

20. The newsletter focuses on the main events in the mining and energy sectors such as conferences, seminars, meetings, workshops and symposia organised by ECA and/or in which ECA participated. It also provides information on the assistance provided to sub-regional development institutions, particularly to the Southern and Eastern African Mineral Resources Development Centre (SEAMIC). It further elaborates on the status of implementation of some mining and energy projects designed to promote economic co-operation, such as the UEMOA's Common Mining Policy, the West African Gas Pipeline and the West African Power Pool in the ECOWAS sub-region, as well as the Southern Africa Power Pool in the SADC sub-region.

- Mineral resources and the alleviation of poverty in Africa

21. This paper was prepared by ECA secretariat for presentation to the special session of the Conference of African Ministers of Energy and Mining held in Ouagadougou, Burkina Faso, from 29 November to 3 December 2000. The paper notes that despite its impressive wealth, Africa remains poor. It further indicates that, in general, earnings from mineral exports have not been ploughed back into productive activities and have not contributed to improving the quality of life of local communities. The paper proposes several policy, institutional and technological instruments to transform mining in Africa into an instrument of sustainable development and poverty alleviation.

- Competitiveness of small-scale enterprises in the African mineral and energy sectors: Case of Eastern and Southern Africa

22. This report presents the results of a desk study and field missions to Kenya, Tanzania, South Africa, Zimbabwe and Zambia aimed at identifying the constraints, factors and issues impacting upon the competitiveness of small-scale enterprises in the energy and mineral sectors of those countries, and outlining areas of intervention by major stakeholders to address constraints. The study proposes that appropriate regulations should be put in place to promote small-scale enterprises that would reduce restrictions and improve the regulatory framework governing the sector and the system for granting licenses. In addition, it proposes that (i) the agencies overseeing the sector should be properly resourced with adequate human resources, funding and equipment to effectively and efficiently administer it; (ii) access to financial resources should be facilitated through affordable interest rates and mobilising grants and loans; (iii) human resources and skills should be developed by facilitating access to training on production, processing and business management; (iv) access to mineral resources should be extended by finding and allocating additional suitable ground for small-scale mining; (v) appropriate technology should be developed; and (vi) access to information (including information on markets) should be expanded.

23. The study reiterates that to develop a competitive SSE sector there is need to create supporting research and development infrastructure that is capable of carrying out pioneering work on appropriate technologies for the sector. These technologies should be simple to use, robust, affordable and adapted to local environment and conditions. These technology innovations should be achieved through enhancement of local capacity to acquire, develop, internalise and adapt modern technologies. In addition, there is need to follow strategies that contribute to the reduction of transaction costs, improve productivity, increase the rate of return on investments and reduce risks to the environment.

- A compendium of best practices in the small-scale mining sub-sector.

24. The compilation of the Compendium has to await the outcome of studies which have been commissioned by the Mining, Minerals and Sustainable Development (MMSD) project and consultation with the Collaborative Group on Artisanal and Small-scale Mining (CASM). It is expected that the compendium will be prepared during the biennium 2002-2003. Once prepared, ECA plans to organise a regional seminar to review and draw lessons from best practices in small-scale mining.

- Vth Session of the Indaba Conference on Investment in African Mining

25. The Indaba Conference that is organised on a yearly basis in Cape Town, South Africa, is one of the most important venues for promoting investments in the mining sector in Africa. ECA has been participating regularly in this event with a view to keeping abreast with the developments in the mining sector in Africa and enhancing collaboration and networking with other organisations and stakeholders.

- Special Conference of African Energy and Mining Ministers

26. The special session of the Conference of African Ministers of Mining and Energy held in Ouagadougou, Burkina Faso from 29 November to 3 December 2000 noted earlier, focused on actions to be taken regarding: (i) the harmonisation of mining policies and legislation, (ii) resources development and alleviation of poverty; and (iii) the partnership to be established between the government, mining companies, and local communities for sustainable development. The Conference decided to:

Promote harmonisation of mineral policies and legislation by:

- Urging member States to harmonise their mining policies and legislation;
- Encouraging member States to undertake analysis on mining policies and legislation in their respective countries in order to identify similarities and differences for better co-ordination of their policies and legal instruments;
- Strengthening the exchange of mining information among different sub-regions upon completion of harmonisation of mining policies and legislation; and
- Establishing a technical group, comprising of one representative from each sub-region, to endeavour to harmonise the policies and legislation at the level of the continent.

Address poverty alleviation by urging governments to:

- Establish adequate macro-economic programmes that could create opportunities for increasing national income from mining;
- Take the necessary measures for a better redistribution of the rent derived from the exploitation of mineral resources so that it can contribute efficiently to alleviation of poverty; and
- Establish suitable modalities to incorporate the needs of the community into mining investment or development plans by involving communities in decision making.

Remove financial, technical, and institutional constraints by:

- Facilitating access to capital;
- Developing innovative guarantee mechanisms for the small-scale mining sector;
- Instituting a conducive regulatory framework in order to attract investment for large-scale mining;

- Promoting training;
- Organising a forum on mineral markets to address their cyclical volatility, in particular gold;
- Facilitating local beneficiation of minerals to add value to African mineral products;
- Address artisanal mining needs in both national and sub-regional level; and
- Assisting women in mining by providing enough resources to enable them to create an African Women in Mining Network so as to reinforce regional integration.

Promote partnership between government, mining companies, local communities in order to achieve for sustainable development

27. Considering the critical role and importance of the mining and energy sectors as driving forces for socio-economic development in Africa and the need to organise regular meetings among African mining leaders, and in order to create an effective mechanism to ensure follow-up and implementation of recommendations and resolutions adopted in mining and energy fora, the Ministers further decided to:

- Explore measures to organise regular meeting of African mining and energy Ministers.
- Urge the Economic Commission for Africa (ECA) and OAU to look at modalities to resume the organisation of regular meetings of African Ministers responsible for Mining and Energy.
- Sensitise at national and sub-regional levels, the Economic Planning and Finance Ministers on the importance of the energy and mining sector and on the need to allocate adequate resources for its development; and
- Ensure that regional and sub-regional institutions are involved in the implementation of the various recommendations, and come with an implementation programme.

28. The Ministers acknowledged the importance of the proposed Africa- United States Conference on Energy scheduled for 11-15 December 2000 and urged member States to attend it. ECA contributed a paper as mention above and helped service the meeting.

- Seventh Meeting of the Board of Directors (BOD) of SEAMIC

29. The Seventh Meeting of the Board of Directors (BOD) of the Southern and Eastern African Mineral Centre (SEAMIC) was held in Dar Es Salaam, Tanzania from 6 to 9 March 2000. Despite the fact that the introduction of a shareholding system in SEAMIC would imply that the members of SEAMIC would only be those who have shares in the organisation, the BOD suggested that ECA, without being a shareholder, would continue to be part of the Policy Organs and the Board of Directors of SEAMIC. In this regard, ECA attended the meeting of the legislative organs of the Southern and Eastern Mineral Centre (SEAMIC) that took place at the Centre's headquarters in Dar-Es-Salaam, Tanzania from 22 to 26 May 2000, namely the meeting of the Standing Committee of Officials, which was presided over by ECA, and the meeting of the Governing Council.

30. In these meetings, the Work Programme and Budget for 2000-2001 for the Centre was approved together with the suggested amendments to the Financial Rules and Regulations. A Shareholding Concept and Performance Contracts were also introduced.

3.2. Energy

31. CNRST-1 urged that the recommendations of the Second Conference of the African Ministers Responsible for the Development and Utilisation of Mineral and Energy Resources held in Durban, South Africa, from 21 to 22 November 1997, should be implemented expeditiously in particular those aimed at:

- (i) The establishment of policies which facilitate the participation of the private sector in the development of natural resources;
- (ii) The promotion of natural resources; and
- (iii) The strengthening of co-operation among member States and all other actors involved in the development of natural resources.

32. In response to CNRST-1 request, ECA prepared and carried out the following studies and out the activities respectively:

- Framework for enhanced government-private sector co-operation in the development of energy

33. The aim of the study is to assist African countries establish appropriate policy, institutional, legal and regulatory frameworks for attracting private sector participation in the development of energy.

- Framework for rural electrification with emphasis on new and renewable energy sources, including mini-hydropower stations

34. This study, which is under preparation, aims at establishing appropriate policy and institutional frameworks for implementing rural electrification programmes for African countries particularly by

promoting the utilisation of new and renewable sources of energy.

- Rural electrification project framework documents (prototypes)

35. The aim of the planned study is to propose model project documents for rural electrification projects using new and renewable sources of energy.

- Establishment of the West African Power Pool (WAPP)

36. The Implementation of the West African Power Pool (WAPP) Project started with the adoption of the Indicative Master Plan by the First ECOWAS Energy Ministers Meeting held in Accra, Ghana, in November 1999. The Energy Ministers signed the Inter-Governmental Memorandum of Understanding (MoU) for implementing the project in their second meeting held in Lome, Togo, in September 2000. The Draft Inter-Utility Memorandum of Understanding was adopted by the Chief Executives of the national power companies at the ECOWAS meeting held in March 2001 in Dakar, Senegal.

- Establishment of the Regional Electricity Regulatory Association in the SADC region

37. Progress is being made with the establishment of the Regional Electricity Regulatory Association (RERA) in the Southern African Development Community (SADC) region. An added impetus was given by the SADC Energy Ministers at their meeting held in Kinshasa, Democratic Republic of Congo, from 4 to 8 June 2001. Because there is an increasing integration of electricity systems in southern Africa, it was deemed necessary to review the current regulatory arrangements and RERA is intended to be the vehicle to achieve this. Neighbouring countries have agreed to form an integrated electricity market, which will provide significant benefits arising from economies of scale and shared resources. Indeed, the successful regional integration of electricity systems requires a framework for transactions to take place, arrangements for systems operations, and a system of tariffs for use of transmission infrastructure. Many countries in the region have either established or are in the process of setting up regulatory bodies. These regulatory authorities are beginning to examine the implications that increasing interconnections and cross-border trade may have on their roles and responsibilities.

- Energy Pooling in the East African Community (EAC)

38. Plans for Kenya and Tanzania to connect their power grids to the South African Power Pool (SAPP) have been disclosed early in 2001. Feasibility studies on the Kenya-Tanzania-Zambia transmission lines are scheduled for completion in December 2002. The governments of Kenya, Tanzania and Zambia have also approved a project implementation programme that will allow for the review of the studies and ensure that a developer is selected by December 2002. The project involves three phases: Nairobi-Arusha, Arusha-Mbeya, and Mbeya-Pensulo (Zambia). Tanzania will have to reinforce its internal transmission lines between Arusha and Mbeya so as to match the anticipated power capacities. Feasibility studies for the Tanzania-Kenya Power Interconnector, funded by the governments of Kenya and Tanzania, are due for completion by January 2002. Although feasibility studies for the Zambia-Tanzania 330kV interconnector were completed in 1998, these have now to

been reviewed and updated¹.

39. The Kenyan government will fund a complementary study on the viability of extending the Kenyan oil pipeline from Eldoret to Kampala in Uganda. Kenya is also financing the complementary study. These resources will be recouped from the private sector firm licensed to build and manage the pipeline. The European Investment Bank funded the first study, and the report was submitted to the two governments in 1999. Once implemented, the extension will result in a significant reduction in the cost of oil products in Uganda, Rwanda, and the eastern part of the Democratic Republic of Congo; all of which import refined oil products through Kenya. A consultant will review and update work that has so far been carried out, including a feasibility study carried out by an international consultant in May 1995, and also undertake a cost-benefit analysis of competing modes of transport².

- OAU/AEC meetings on the establishment of the African Energy Commission (AFREC)

40. The OAU/AEC General Secretariat convened the meeting of African Energy Experts in Cairo, Egypt, from 22 to 25 May 2000. The meeting considered the proposal for the establishment of the African Energy Commission (AFREC) and reviewed the draft constitution of the Commission. The Conference of African Ministers of Energy held in Algiers, Algeria from 23 to 24 April 2001, considered the recommendations of the Cairo meeting and decided on the immediate establishment of the African Energy Commission. The Assembly of Heads of States and Governments of the OAU, held in Lusaka, Zambia, from 9 to 10 July 2001, endorsed that decision. The Summit requested the OAU Secretary General to cooperate very closely with Algeria, the host of AFREC, and the Bureau of the Conference of African Ministers of Energy on the implementation of the provisions of the Convention and the speedy establishment of an interim structure of the Commission to enable it to begin its activities without delay.

- US-Africa Energy Ministers' Conferences within the Africa Energy Initiative

41. The first US-Africa Energy Ministers meeting was convened by the Secretary of Energy of the United States of America in Tucson, Arizona, on 13-15 December 1999. The Ministers agreed to initiate a sustained co-operative effort through governmental leadership and participation of the private, and other sectors, including regional and sub-regional economic, intergovernmental, multilateral and non-governmental organisations, to support the growth of adequate, accessible, environmentally safe and sound, secure, and affordable energy supplies. The Ministers reaffirmed their commitment to putting in place policies and undertaking programmes that will enhance investment and partnerships in clean energy technologies and the efficient production and utilisation of traditional energy sources. and increase access to energy for Africa's people.

42. The African Energy Ministers and representatives of the United States Secretary of Energy met in Durban, South Africa, at the second Africa-U.S. Energy Ministers Meeting on December 11-15, 2001, to advance a co-operative partnership developed in the March 1999 U.S. -Africa Ministerial meeting, in Washington, D.C. The meeting was held under the auspices of the "Blueprint for U.S.-Africa Partnership" and in light of the joint statements agreed to at the Tucson Conference aimed at strengthening energy co-operation between the U.S and African countries. In this meeting, Ministers

focused on policies and practices that promote economic development, address environmental concerns, encourage private investment, enhance regional integration, and increase access to energy to the people of Africa. Successful policies and practices would lead to the creation of a sustainable energy infrastructure in Africa in the 21st Century and would advance Africa's economic and social development.

43. The Ministers endorsed a Declaration on the Promotion of Sustainable Energy Development and Co-operation in Support of the Environment, confirming their agreement to implement sustainable energy policies and promote clean energy options. In addition, aware that private investment and partnership are crucial to meeting Africa's growing energy needs in the 21st Century, they issued a Declaration on the Implementation of Investment Principles for the Energy Sector.

- High-level Regional Meetings on Energy and Sustainable Development

44. As part of the process of preparation of the Ninth Session of the Commission for Sustainable Development (CSD-9), the United Nations Department of Economic and Social Affairs (UN-DESA), in collaboration with the United Nations Development Programme (UNDP) and the World Energy Council (WEC), decided in 1998 to undertake a global study aimed at assessing the world energy situation. African regional consultations were organised in Nairobi, Kenya, from 25 to 26 January 2000, to provide experts in energy from the Africa Region with an opportunity to review and comment on the World Assessment draft report. The experts were also requested to provide additional information specific to Africa, and identify and articulate options that are of particular relevance or importance to the region. Another High-Level Regional Meeting on Energy and Sustainable Development was also convened in Nairobi, Kenya, from 10 to 13 January 2001, to consider the revised draft report on the World Energy Assessment before its submission to the session of the Commission on Sustainable Development which was held at the United Nations Headquarters in New York in April 2001.

3.3. Water

45. One of the more specific recommendations of CNRST-1 was for ECA to implement the decisions and recommendations of the meeting of Chief Executives of African River/lake Basin Organisations (RBOs) organised by ECA in mid 1999. The decisions and recommendations of this meeting were numerous and were directed to both ECA, the RBOs and other partners.

46. To this effect, ECA, on its part, organised the 7th and the 8th annual meetings of the Interagency Group for Water in Africa in 2000 and 2001 respectively. All African RBOs were invited to these meetings. The seventh meeting was attended by, among others, the representatives of both the Zambezi River Basin Authority (ZRA) and the Niger River Basin Authority (NBA). ECA presented at this meeting a report on the decisions and recommendations of the earlier meeting of the RBO Chief Executives and urged the Interagency Group for Water in Africa member agencies to cooperate among themselves in the implementation of the RBO Chief Executives' meeting decisions.

47. The seventh Interagency Group for Water in Africa (IGWA) meeting decided that in order to bring the African RBOs in the mainstream of IGWA member agencies' activities, future meetings of the body

should be held at selected RBO headquarters. One of the recommendations of the Chief Executives' meeting was to organise their meetings on a routine basis. The 7th IGWA meeting decided that if that is to be done, then the RBOs should finance their own participation at such meetings and should possibly also host them by rotation. Accordingly, the Niger Basin Authority offered to host the 8th annual meeting of IGWA at their headquarters in Niamey, Niger and all African RBOs were invited to the meeting. Unfortunately, none of these RBOs except the host NBA participated at the meeting.

48. In response to other recommendations of the RBO Chief Executives' meeting and the CNRST-1, ECA carried out the following activities in the water sector:

i) Organised the 7th annual meeting of IGWA (hosted by FAO in Accra) in January 2000. Its report was finalised and disseminated.

ii) Organised the 8th annual meeting of IGWA (hosted by NBA at Niamey, Niger). Its report was finalised and disseminated in 2001.

iii) Prepared a comprehensive report on the implementation status of the decisions/recommendations of all previous IGWA meetings since the Group's inception in 1992, which presented at the 8th annual meeting of IGWA.

iv) Participated at the March 2000 Second World Water Forum in the Hague and organised an exhibition on ECA activities in water sector in Africa at the Forum. ECA also participated at the activities of Africa day and the in special session on Lake Chad Basin Strategic Action Plan organised at the World Water Forum.

v) Organised in Addis Ababa in July 2000 jointly with AfDB and OAU secretariats, an expert group meeting and prepared a Strategic Action Plan for implementation of the African Water Vision 2025. This was a follow-up to the Africa Water Vision 2025 incorporated as an integral part of the Global Water Vision adopted at the Second World Water Forum

vi) Prepared a comprehensive preliminary report on inter-basin water transport from the Obangui River System to the Lake Chad Basin to restore the receding water surface area of the Lake Chad, a follow-up to the Lake Chad Basin Strategic Action Plan.

vii) Prepared a comprehensive study on "Transboundary River/lake Basins Water Development in Africa: Prospects, Problems and Achievements". The study is the first ever-comprehensive account of issues and efforts of transboundary water development in Africa in some sixteen major river/lake basins in Africa. It concludes that although these basins have tremendous potentials for development, efforts so far have been only partially successful and accordingly recommends concerted efforts, by all stakeholders, for integrated development of these resources.

3.4. Science and Technology

49. CNRST-1 recommended that member States and ECA build capacities in the area of sustainable development of natural resources and also to define a strategic vision in the area of science and technology and the valorisation of natural resources in the context of globalisation. It further recommended that support mechanisms be put in place to facilitate the sharing and exchange of experiences and knowledge in the area of science and technology and natural resources. In addition, ECA was requested to acquire capacity to provide technical, advisory and training services to member States to enable them to set up appropriate mechanisms for commercialising research and linking research to industry.

50. In the area of science and technology, ECA's activities aim at assisting member States in building their scientific and technological capabilities to address Africa's development potential. As science and technology is cross-cutting and pervading all areas of the economy, responsibilities in each sector of activities (information and communication technology (ICT), agriculture, water, energy, mineral, women,... etc.) are diffused throughout ECA's Divisions. The small science and technology team situated in the Food Security and Sustainable Development Division (FSSDD) serves as the focal point of ECA in matters related to science and technology in general. The activities of the team thus cater for cross-cutting science and technology issues, with emphasis on food security and sustainability.

51. The activities aim at strengthening the capacity of member States in tackling regional and sub-regional issues in science and technology through the organisation of a regional forum, the analysis of key issues of interest to member States, advocacy, awareness raising, networking and technical co-operation. The activities also aims at strengthening international co-operation and inter-agency co-ordination, harmonisation and liaison with institutions and organisations concerned with science and technology in Africa.

52. The activities contribute to: (1) Increasing member States' awareness and commitment to apply science and technology to alleviate poverty and ensure food security and sustainable development; (2) Increasing co-operation between African countries in the area of science and technology; (3) Promoting effective science and technology policies and strategies for addressing the nexus issues; and (4) Sharing relevant information on science and technology and best practices and enhanced communication amongst science and technology.

53. In 2000-2001 the activities in the area of science and technology were seriously inhibited by the high-level of staff vacancies which are however being addressed through ECA's current recruitment campaign. The most important activities carried out during this period included:

- Servicing of Intergovernmental / Expert Meetings

This included:

- Organisation of the third meeting of the Advisory Board on Science and Technology (October 2000). Advice, assistance and guidance have been received from the Board on ECA's work programme in science and technology and on issues for African Development. Critical reviews were carried out for a number of papers, documents and

monographs that were produced by the Secretariat with the assistance of consultants, resource persons and visiting fellows. Strong support was given to the promotion of networking in science and technology policies in Africa. Advice was also received on the content and organisation of CNRST-2.

- Contribution to the preparation and servicing of CNRST-2 Meeting (2001).
 - Contribution to the preparation of the second Meeting of the Committee on Sustainable Development (CSD2) (2001).
 - Contribution to the organisation of an *Ad Hoc* Expert Group Meeting on Indigenous Food Technology (2001).
 - Organisation of the fourth meeting of the Advisory Board on Science and Technology (2002). Organisation of the fifth meeting of the Advisory Board on Science and Technology (2003).
- Policy analysis

Papers and reports were prepared on:

- Technological capability building in the South: lessons and opportunities for Sub-Saharan Africa (2000). The study outlines a practical strategy for technological development relevant to Africa, drawing on the lessons of the successes of Newly Industrialising Countries (NIC) in this field.
 - Technological transitions: technical upgrading of indigenous food technology in Africa (2000). The paper outlines a down-to-earth methodology for upgrading traditional or indigenous food technology in Africa using a participatory approach.
 - Report to CNRST-2 on "Issues in Science and Technology for the Competitiveness of Natural Resources (2001)". The report discusses conceptual issues related to competitiveness, the role of science and technology in the competitiveness of nations, institutional and human capacity building, systems of innovation and new and emerging technologies for the competitiveness of natural resources and Africa.
 - One Policy Brief on science and technology for sustainable development (2002).
- Networks and Models

The main work included:

- ESTNET: Preparatory work was carried out for the launching of ESTNET - a collaborative network of science and technology policy-making institutions and policy-

makers in Africa. As a resource centre for information, communication and collaboration on science and technology policies, issues and management in Africa, ESTNET seeks to provide a virtual space where a learning community of science and technology policy-makers, managers, analysts and policy-making institutions can network, share information dynamically and build important databases on science and technology of interest to Africa. Activities aim at improving upon the existing website, training the network operators, further developing and expanding the databases, promoting connectivity, launching and marketing the network, updating and maintaining the website, and assisting member States and relevant institutions in using and benefiting from the network.

- PEDANA: Contribution to the PEDANA model - a computer-assisted model which captures the long-term interrelationships between Population, Environment and Agriculture variables, including technological inputs, and their impacts on food security.
- International Co-operation and Inter-Agency co-ordination and Liaison

The activities included attending relevant meetings and/or co-operating with member States and key international agencies. The main ones were:

- Participation in an International workshop on African Systems of Innovation (Aalborg, Denmark, March 2000). The workshop provided an opportunity for ECA to (1) review the more than decade long research on the National System of Innovation (NSI), including some of the NSI characteristics in the European, USA, Japan, Latin America, NICs and Transitional economies; (2) share empirical research on innovation and development in Africa by focusing at various levels: firm- level, sectoral / meso level, macro / national level; (3) discuss globalisation, innovation and development in the specific African context and the state of Africa's system of innovation; and (4) analyse African industrial and economic development strategies using a NSI approach.
- Participation in the Fifth Session of the United Nations Commission on Science and Technology for Development (CNSTD), Geneva, May 2001. The findings and policy orientations promoted by CNSTD in the field of science and technology are in line with ECA's thinking and policy advice. New and emerging technologies present both opportunities and challenges, particularly in the area of food security and sustainable development. In order to seize these opportunities and face the challenges, African countries should launch national technology assessments and dialogues involving all stakeholders. The objective of these national exercises is to identify weaknesses, strengthen institutional, managerial and entrepreneurial capacities, develop medium-term visions, formulate strategies, policies and plans of action and raise public awareness and government commitment to science and technology development. One appropriate generic framework for such national assessments is NIS approach. This approach encourages private sector participation in technological upgrading and promotes networking, partnering and clustering. CNSTD works on themes of great interest to ECA namely: "Information technology", "Networking and Partnerships", "Biotechnology for Food Production", "Gender and science and technology", etc. CNSTD

and ECA are both developing a network on Science and Technology policies, issues and management and there is need to ensure close collaboration and complementarity. In addition, CSTD chose for its sixth session the theme: "Technology Development and Capacity Building for Competitiveness in a Digital Society". This theme is similar to the theme chosen for the second meeting of the ECA Committee on Natural Resources and Science and Technology (CNRST2), namely: "Enhancing Africa's Competitiveness: Policy Issues in Natural Resources and Science and Technology" This illustrates the need for ECA to follow closely and participate in the activities of CSTD.

- Co-operation and liaison with member States, key international, regional and sub-regional intergovernmental and non-governmental institutions in science and technology (e.g. CGIAR, CORAF, AAS, PUST, OAPI, ARIPO, ATPS, AFRISTECH, MAGTECH, MARWAN) which are concerned with science and technology for sustainable development.
- Co-ordination and harmonisation with other United Nations Agencies and institutions concerned with science and technology for development, such as the UNU/INRA, UNCTAD, FAO, UNESCO, UNIDO, UNEP, WIPO, JIU, etc.).

- Technical co-operation

- Periodic provision of advice and technical support to member States and institutions on request on various issues related to science and technology development.
- Backstopping of ECA-sponsored institutions in science and technology, including the African Regional Centre for Technology (ARCT) and the African Regional Centre for Engineering Design and Manufacturing (ARCEDEM). In May 1977, the ECA Conference of Ministers adopted resolution 827 (XXXII) on the rationalisation of ECA-sponsored institutions and called for their implementation by member States in close co-operation with ECA. Among the recommendations in the area of science and technology is the merging of ARCT and ARCEDEM. The merging process started, but is being implemented at a relatively slow pace.

4. Conclusion

54. The development, exploitation and utilisation of natural resources in today's environment requires the involvement, collaboration, and the establishment of partnerships between several stakeholders including governments, the private sector, bilateral and multilateral development agencies, local communities, NGOs and other partners. The extent of activities described in this report reflects, to a certain degree, these new developmental relationships and dynamics.

55. ECA has, within the resources made available to it, carried out advocacy and advisory activities, raised awareness, undertook policy analysis and provided capacity building services to African member States with the objective of strengthening regional co-operation, and improving the competitiveness of African natural resources products in a globalising world.

56. During the period under review, there has been a general decline in the prices of primary commodities, including minerals. The continent also witnessed a decrease in the inflow of foreign direct investment (FDI). In addition, the crisis in Asia reduced the appetite of international investors to invest in new and emerging markets where risks are perceived to be higher. The effects of globalisation and science and technology-based competitiveness made the situation more acute.

57. To improve the investment climate, Africa has recognised that it should:

- Create an enabling policy environment;
- Promote good governance, peace and stability;
- Train human resources;
- Provide reliable supporting infrastructure;
- Improve the capacity for technology acquisition and innovation;
- Increase the capacity to mobilise financial resources; and
- Promote of public-private partnerships.

58. This view point has been articulated in many of the conferences, meetings and workshops organised during the period under review, and in studies prepared by different stakeholders including ECA. Unfortunately, the infrastructure to promote greater utilisation of the African natural resources base, which should be based on a strong science and technology network, has not improved much. In that regard, most of the pronouncements on the need to harness science and technology could be translated into visible and measurable results. However, the awareness levels on what constitutes critical issues for natural resources development in Africa has been raised considerably.

59. In the future the focus should be on less ambitious but implementable programmes and projects. These should be aimed at improving the backward/forward and lateral linkages. The optimal framework to achieve these objectives should be based on an expanded co-operation between African countries. Since a natural resources-driven sustainable developments strategy requires support from a strong science and technology infrastructure member States and other stakeholders will need to provide additional and sustained support to the existing Centres of Excellence in science and technology and establish new ones where required.

1 The East African, Nairobi reported this on 23 April 2001.

2 These news were reported in the East African in 16 April 2001