

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

Support to NEPAD

Period of report: 2003

Orientation of work in support of NEPAD

Thirty-four African countries are members of the IAEA. Through its technical cooperation programme, IAEA supports member states' efforts aimed at strengthening institutional capacity building in nuclear sciences and technology and promoting the sustainable application of nuclear techniques for social and economic development. Assistance is delivered in the form of expertise, training opportunities and equipment supply.

Areas of support for NEPAD

Special attention has been paid over the past months to further enhancing planning in order to broaden the contribution of isotopes and nuclear techniques in major areas of special economic and social significance and to better respond to the basic priority needs expressed by national authorities in line with the Millennium Development Goals (MDGs).

In this regard, efforts to reach technical cooperation planning agreements with Member States were intensified in 2003. Country Programme Framework (CPF) documents were signed for Cameroon, Libya, Madagascar and Uganda) and significant progress was achieved in the CPF consultations in several other Member States, including Algeria, Egypt, Ghana, Mali, Niger Sierra Leone, Zambia and Zimbabwe). Multidisciplinary missions supporting CPF development were carried out to Algeria, Gabon, Niger and Zambia.

The IAEA technical co-operation mechanism includes also support to the African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA), which has a membership of 30 African countries. As of September 2003, 8 AFRA Regional Designated Centers (RDCs) have been empowered by AFRA Member States to help promoting peaceful applications of nuclear techniques in the areas of non-destructive techniques, mutation breeding and biotechnology, radiation oncology and medical physics, radioactive waste management, irradiation processing and maintenance of scientific equipment.

In conjunction with its sustained cooperation programmes with African Member States, the Agency supports the sectoral priorities of NEPAD pertaining to *agriculture and market access, human resources development (health, education), infrastructure (water, energy, ICTs) and environment*. In 2003, project disbursements amounted over US\$ 19 million to the following sectors:

- ***Agriculture and market access***

The IAEA's work in Africa related to this cluster supported national and regional programmes in Member States aimed at poverty alleviation and food security goals. The IAEA assistance dealt mainly with the application of peaceful nuclear techniques in pest control, with special emphasis on tsetse eradication, and improving crop and livestock productivity through artificial insemination and feed supplementation. Significant efforts were made by IAEA through technical co-operation mechanisms

towards contributing to global self-reliance and sustainability within the region in this field through development of a regional capability for production and distribution of critical diagnostic kits.

In 2003, support to the Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) continued to be a major thrust of the Agency's technical cooperation programme in the region. IAEA pursued its partnership with the African Union (AU) in support of PATTEC. The Agency took part in PATTEC Policy and Mobilization Committee (PATTEC-PMC) meetings alongside other mandated UN organisations (FAO and WHO). Collaboration between PATTEC and the IAEA has special significance to the NEPAD's objective on "*Extending the Area Under Sustainable Land Management and Reliable Water Control Systems*". In 2003, the Agency continued to contribute directly in the field to the implementation of PATTEC's Action Plan in Botswana, Burkina Faso, Ethiopia, Mali, Kenya, South Africa, the United Republic of Tanzania and Uganda. Assistance has been provided to establish/upgrade tsetse-rearing facilities in Burkina Faso, Ethiopia and the United Republic of Tanzania; to perform test sterile fly release in Mali; to develop standardized recording, reporting and management system for field operations; to collect entomological and veterinary baseline data in target areas; to carry out genetic studies of tsetse fly populations; to establish a DNA extraction laboratory in West Africa; and to develop tsetse prediction maps.

Also, in an effort to encourage close sub-regional and transboundary co-operation between Member States for creation of tsetse free zones, the PATTEC Coordination Office (PCO) and the IAEA worked closely to facilitate consultations between Ethiopia and Sudan, which culminated in the signing of a Memorandum of Agreement in May 2003. Other regions of cooperation include the Kwando/Zambezi region (Angola, Botswana, Namibia, Zambia and Zimbabwe)

Agreement was reached between them in June 2003 to initiate a joint campaign building on the progress made in tsetse control by Botswana in the Okavango Delta. A meeting of the NEPAD Secretariat and the IAEA was held during the Summit Meeting of the African Union Heads of State and Government in July 2003 in Maputo (Mozambique) to discuss the modalities for incorporating PATTEC activities within the NEPAD agenda.

Another strategic area of significance to NEPAD concerns livestock production. During 2003, the IAEA TC programme in Africa continued to focus on strengthening the region's technical capabilities for diagnosis and control of animal diseases in support of national and regional zero-surveillance programmes. The IAEA pursued its co-operation with the AU's Pan-African Bureau of Animal Resources (AU/IBAR) in support of the objectives of the multi-million dollar European Union-funded Pan-African Programme for the Control and Eradication of Major Epizootics (PACE) programme (PACE). In this connection, quality assurance systems in a national laboratory (National Veterinary Research Institute VOM - Nigeria) and technical advice were provided concerning daily operations of laboratories in Angola, Benin, Gabon, Kenya, Mali, Nigeria and Sudan. Furthermore, the IAEA regional expert assisted a new IAEA Member State, Eritrea, in the formulation of a project proposal in livestock development, which is to be submitted to IAEA for consideration under the 2005/06 TC Programme. Consultations were held in December 2003 with AU/IBAR to discuss future partnerships with the IAEA in the areas of technology transfer to help eradicate major livestock diseases in Africa.

- **Human resources development (health, education)**

Within its mandate, IAEA is strongly committed to contribute to the on-going international effort to fight the ever-

expanding scourge of HIV/AIDS pandemic. In 2003, a new major regional project was initiated focusing on building the necessary technical capacities and human resources to enable Africa to undertake a programme on vaccine research and trials specific to needs and requirements. It is expected that the involvement of the IAEA in the global effort towards tackling the HIV/AIDS scourge will bring institutional, operational and technical capabilities that can contribute to UNAIDS.

Another related regional project was initiated by the IAEA in 2003 with the aim of enhancing member states' capacity to reduce all forms of malnutrition among the most vulnerable groups, including the HIV/AIDS infected, through the use of stable isotope in evaluation and monitoring of ongoing and planned nutrition intervention programmes/projects. Ten countries are participating in the project. Member states have chosen to focus first on the technology on established programmes in 3 countries – Ethiopia, Senegal and Uganda. These will act as demonstration projects for the other participating countries.

- ***Infrastructure development***

The 3 major areas of the IAEA programme where its contribution has been directed to support NEPAD's short-term plan pertain to:

- a) Water resources*

Water is on the top of development agendas of Governments and relevant international organizations and bilateral partners in Africa. Rational water resources management is a major goal in the context of sustainable development.

In 2003, the Agency continued its assistance to African member states aimed at strengthening further the regional and national technical capabilities and expertise in the implementation of national isotope hydrology programmes. The Agency also helped several countries, through national

and regional technical cooperation projects, to gain a better understanding and quantifiable estimates of the groundwater and surface water resources, to design and implement national strategies for national exploitation and management of these resources, and to enhance the safety of dams and artificial reservoirs. There were also over 30 national and regional IAEA-supported projects under implementation in Africa. Four sub-regional cooperative initiatives were launched consistent with member states' approach to the implementation of programmes related to shared aquifers. These pertain to the following: (i) the sustainable development and equitable use of the common Nile Basin water resource, (ii) the Nubian Sandstone Aquifer, (iii) the Iullemeden Aquifer, and (iv) the North Western Sahara Aquifer.

- b) Energy planning and economics*

The availability of energy is an essential condition to ensure macro-economic growth and stability in the context of sustainable development. In 2003, the Agency continued to provide assistance to 14 African member states. IAEA activities are aimed at transferring its methodologies and tools for energy demand forecasting, integrated energy planning, least-cost electricity system. As part of IAEA support, 30 participants from 14 African countries concerned were trained in Abuja, Nigeria on how to use the IAEA Wien Automatic System Planning Package (WASP) Model for determining optimal generating capacities of their country's power system. This will help the participants in the application of methodologies to develop future expansion plans for the electric power sector to meet increasing the electricity demand, which will foster economic growth and electrification.

- c) Information and communication technologies (ICT)*

The new programme, which has been initiated in 2003, included key components, such as: (i) ICT infrastructure building including the establishment of ICT tele-centers in each country, (ii) training experts, as well as ICT developers, to enable each country to expand its ICT capability at its own pace; and (iii) recognition of African regional resource centers and experts in the field to enhance the region's ownership as well as self-reliance. Accordingly, 4 new ICT tele-centres have been established in four countries, about 50 ICT experts have been trained on ICT methodology and pedagogy and new ICT materials have been developed.

A comprehensive package of ICT materials for training African scientists in all aspects of general and nuclear electronics, troubleshooting, preventive maintenance and repair of scientific and medical equipment was distributed to all countries. *Tele-linking* in nuclear medicine is still a potential option to many countries in Africa. Plans have been designed to link medical institutions in several African countries, in particular Sudan, Tanzania, Uganda and Zimbabwe, to South African Hospitals.

- ***Environment***

The Agency participated in the Partners' Conference on the Action Plan for the Environment Initiative of NEPAD held in Algiers in December 2003. The key priorities and projects in the Action Plan relevant to IAEA are in the areas of combating land degradation, drought and desertification, trans-boundary aquifer management, sustainable use of freshwater resources, groundwater vulnerability and augmentation of urban water resources, and coastal zone management. Efforts will be made to maintain cooperation with NEPAD and to ensure IAEA's involvement in supporting the Environment Action Plan. This would be done through concerted approach, relying on specific needs identified by individual member states and on priorities defined at

the regional level through IAEA's cooperative programming mechanisms.

IAEA's financial commitment to NEPAD

Delivery of IAEA assistance through provision of expertise, training opportunities and equipment in 2003 benefited 30 African countries and amounted to over US\$ 19 million in terms of project disbursements. For the 2004 programme, the IAEA Board of Governors has approved a budget of about US\$18 million. The Agency's technical cooperation projects will continue supporting African member states' development priorities and efforts to meet basic human needs, particularly in the areas of health care, food and agriculture and water resources development.

Support to member states

The IAEA assistance, including support to the AFRA Programme, has been provided to individual Member States as well as regional organizations such as PATTEC and the AU.

Support to regional and sub-regional programmes

AFRA Programme made several offers to the NEPAD Secretariat for collaboration in the field of nuclear science and technology including participation in regional activities, infrastructure-building and human resources development. Following the adoption by the Council of Ministers of the NEPAD Plan of Actions for Science and Technology, AFRA is now deploying significant efforts with the aim to integrate this Plan of Actions and to participate effectively in its implementation.

Participation in regional consultations and clusters

The IAEA participates in the Annual Regional Consultations of UN Agencies Working in Africa organised by UNECA on NEPAD.

Contribution of IAEA to strengthening the response to NEPAD

For the 2004 programming of technical co-operation, the IAEA has allocated a budget from its Technical Cooperation Fund of about US\$ 18 million to support African Member States in their efforts to meet basic human needs, particularly in the areas of health care, food and agriculture and water resources development. Various on-going activities in Africa and new projects being considered for inclusion in the forthcoming technical cooperation biennium for 2005-2006 are relevant to NEPAD priorities.

Future programmes

In furtherance to the UN General Assembly relevant Resolutions, the IAEA will remain committed to support NEPAD and will endeavour under future programmes to respond to the major development challenges of the African region in line with the priorities identified by NEPAD and by Governments of IAEA Member States.

The IAEA is currently finalising with its member states the technical cooperation programme for 2005-2006. Future activities will still focus on supporting Government plans and regional initiatives aiming at improvements of health care, food and agriculture, water resources development, control and eradication of pests, combating of diseases in livestock and crops, and management of natural resources in the context of sustainable development. In this connection, continued joint efforts by member states and the Agency are being deployed to further improve strategic planning and priority setting through sustained dialogue. The Country Programme Framework (CPF) is a major modality that is widely used in achieving focused planning.

The IAEA human health programme in Africa will continue its focus on the use of

radiation and isotopes to prevent, diagnose, and treat disease, but also to assist national counterparts with medical equipment maintenance and networking using the latest information and communication technologies. The Agency's effort will remain concentrated on areas where IAEA contribution is unique as well as cost-effective, such as management of cancers, nuclear medicine for in-vivo and in-vitro investigations and human nutrition. Particular emphasis will continue to be placed on projects dealing human communicable disease (malaria, tuberculosis, HIV/AIDS) and human nutrition. The implementation of the major IAEA-supported regional project on HIV/AIDS immunology and epidemiology will continue in 2005-2006 in close collaboration with UNAIDS and the WHO Regional Office for Africa (WHO-AFRO).

Promoting TCDC will remain a key feature of the IAEA Technical Co-operation Programme in Africa for the next few years. Isotope hydrology methodologies provide unique tools for obtaining critical information needed for water resources management. The programme for 2005-2006 related to the water sector includes support to development projects addressing problems of national and regional significance, with particular emphasis on shared aquifers.

The Agency will also continue supporting several countries in Africa to enhance their capacity for long-term strategic planning of energy systems through transfer of proven methodologies for analyzing energy options, training national teams of experts in the use of these methodologies, and assisting in the conduct of a national energy planning.

The promotion and development of nuclear techniques for socio-economic development requires an adequate radiation safety infrastructure to protect ionizing radiation workers, the public at large and the environment from the hazards associated with the misuse of radiation.