

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

Support to NEPAD

Period of Report: August 2005 to April 2006

Support to areas relevant to the implementation of NEPAD

The IAEA assistance to its African Member States concentrates on supporting them in developing technical, managerial and institutional capacities in nuclear science and technology, and promoting the sustainable application of nuclear techniques to achieve increased food security, improved nutrition and health services, better management of groundwater resources, improved energy development planning, quality control in industrial development, and a cleaner and safer environment. The IAEA's bilateral cooperation with individual Member States is supported by a substantive Technical Cooperation between Developing Countries (TCDC) component, driven in particular by the Intergovernmental African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA). AFRA cooperative projects address the various common needs and challenges of countries, including medical diagnostics through nuclear medicine procedures, cancer therapy, industrial applications of radiation technologies, industrial quality control, maintenance of equipment, and institutional self-reliance.

1) Human resources development (HRD) and support to capacity building

IAEA is helping African countries alleviate the shortage of specialized professionals in key areas of contribution of nuclear science and technology to social and economic development, through various training programmes, including the new Information and Communication Technology (ICT) learning methods that have been developed. AFRA Member States, with the support of IAEA, organised a regional meeting to discuss issues pertaining to human resources development programmes, knowledge management and skills retention in the field of nuclear science and technology. The Agency continued its support to AFRA to help African Member States in establishing sustainable national and regional capacities for using ICT for training and education in fields of nuclear science and technology, relating to agriculture, human health, environmental monitoring, water resource management, nuclear instrumentation and other nuclear and related fields. In 2005, particular emphasis was placed on the training of nuclear engineers, computer scientists and technicians, with the aim to build in the region the capacity for training personnel using ICT-based training materials.

Under an AFRA regional project, the significance of quality management, including quality control and quality assurance, was also introduced in 2005 to African countries through specific national and regional training programmes, as well as advice to national testing laboratories to prepare them for certification/accreditation. With the participation of UNIDO, the project coordination meeting and the first Conference on Quality Management were successfully held in Mauritius. The conclusions and recommendations of the meeting were used to calibrate progress in the field of establishing quality management systems at national levels and to design and formulate a large-scale project for assistance in the field in collaboration with regional partners, such as NEPAD and other organizations such as

UNIDO and ILAC.

2) Improving health services

The IAEA TC programme concentrates on cancer management, development of capabilities for nuclear medicine investigations, and control of human communicable diseases. In the area of human communicable diseases, the activities carried out in 2005 focused on the validation of new diagnostic tools for national disease control and surveillance programmes in Member States and on establishing the conditions for integration of these tools in the protocols of national control programmes for malaria and tuberculosis (TB). The IAEA is involved in the global effort to tackle the HIV/AIDS pandemic. Five countries (Cameroon, Ethiopia, Kenya, South Africa and Uganda) have initiated vaccine studies and are collaborating in a study to incorporate nuclear techniques to understand the genetic diversity of the virus for the purposes of vaccine development, assess immune responses in infected individuals, and to monitor the emergence of drug resistance. The IAEA continued its support under a regional project providing support to the African AIDS Vaccine Programme (AAVP), a network of scientists funded by the WHO.

In the field of cancer management, the IAEA continued in 2005 its support to AFRA countries to enable them to enhance their response to the ever-increasing cancer incidence, particularly the HIV-related cancers, through training of key personnel involved in cancer management, provision of specific equipment for both clinical and safety aspects, as well as financial and administrative support for the organization of the Third AFROG (African Radiation Oncology Group) Congress in South Africa in November 2005. In the field of nuclear medicine, AFRA, with IAEA support, carried out management audits of nuclear medicine centres in 5 countries (South Africa, Tunisia, Algeria, Libya and Tanzania), which have provided valuable information to help these centres improve their clinical, safety and managerial services to patients, as well as strengthen their technical skills and capabilities.

3) Food and agriculture

The IAEA's TC activities in Africa in the area of food and agriculture covered mainly the application of radiation and isotopes in pest control, with special emphasis on tsetse eradication; crop improvement; and improving livestock productivity through artificial insemination and feed supplementation. One of the main areas of the TC programme is the transfer of the Sterile Insect Technique (SIT) in support of creating tsetse-free zones in selected areas in African Member States. In this context, the Agency continued to contribute directly to the Pan-African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) Plan of Action through the implementation of one regional, and nine national TC projects (in Botswana, Burkina Faso, Ethiopia, Kenya, Mali, Senegal, South Africa, Uganda and the United Republic of Tanzania).

The IAEA-supported Ethiopian Southern Tsetse Eradication Project (STEP) received a major boost with about US\$15 million approved by the African Development Bank (ADB) as part of an ADB loan totalling US\$80 million provided to help Ethiopia and five other countries, namely Ghana, Burkina Faso, Mali, Uganda and Kenya to address the tsetse and trypanosomosis issue in the context of agriculture and rural development. Furthermore, a proposal prepared through active collaboration between the IAEA, the Food and Agricultural Organization (FAO), and Ethiopian counterparts, attracted the interest of the Government

Japan and the UN Trust Fund for Human Security, which decided recently to provide US\$1,760,000 to support the STEP project. In the area of livestock, the IAEA is implementing a regional project to support the control and eradication of major trans-boundary animal diseases affecting livestock in the region led by the Inter-African Bureau for Animal Resources (AU/IBAR). Another area of significance is crop improvement. Under an AFRA regional project a total of 17 countries are using mutation breeding and biotechnology to develop improved crop varieties.

4) Water resources management

One of the major thrusts of IAEA cooperation in Africa is on the application of isotope hydrology techniques to help Member States to design and implement national strategies for rational exploitation and management of groundwater resources. In 2005, the IAEA's efforts have particularly concerned the project on the Nubian Sandstone Aquifer. The Global Environment Facility (GEF), via the United Nations Development Programme (UNDP), approved in June 2005 a grant totalling about US\$1 million to support a GEF medium-sized regional project on the "Formulation of an Action Programme for the Integrated Management of the Shared Nubian Aquifer", for which the IAEA will be the Executing Agency. The long-term goal is to establish a rational and equitable management of the Nubian Sandstone Aquifer System for sustainable socio-economic development and the protection of biodiversity and land resources.

5) Protection of the marine environment

The IAEA's assistance in this field is focusing on helping African Member States to develop adequate capabilities in the identification and mitigation of marine environmental problems and to strengthen technical expertise for monitoring and protecting the marine environment. The fisheries sector is a major component of the economies of the countries of the Benguela region, including Angola, Namibia, and South Africa. Toxic algal species occurring in the Benguela upwelling system have been associated with mass mortalities of fish, shellfish, with potential risks to humans through the food chain. Blooms of non-toxic algae also cause harm. Under an AFRA project, the IAEA supported efforts in Angola, Namibia and South Africa to apply isotope techniques to address the adverse effects of harmful algal blooms (HABs).

6) Sustainable energy development

Energy is a major developmental issue of national and regional significance in Africa. In many countries, access to electricity is still very limited, particularly in rural areas. Countries in the region need to rely on viable national capabilities in order to devise appropriate long term strategies to manage their energy sector development, promote sustainable use of natural resources, and increase access to affordable energy services, thereby fostering economic growth and social welfare. The need for concerted global actions to address the energy issue was highlighted by the World Summit on Sustainable Development (WSSD). The WSSD Plan of Implementation called for establishing partnerships and promoting programmes to support Africa's efforts to implement the objectives of NEPAD on energy.

IAEA regional and national projects focus mainly on (i) diversifying energy supply and increasing the proportion of energy obtained from renewable energy sources; and (ii) increasing access to reliable, affordable, socially acceptable and environmentally sound

energy services and resources. IAEA assistance is aiming at enhancing national and regional capacities, and helping the countries concerned in preparing a sustainable energy development strategy through conducting country studies to determine future energy demand and the best corresponding long-term energy supply mix through 2025.

7) Legislative framework for the peaceful application of nuclear energy, nuclear safety and security

The IAEA is providing support to its Member States in Africa to assist them in strengthening the legislative framework for the peaceful use of nuclear energy. The IAEA organised in December 2005 in Vienna the African Regional Meeting for Senior Government Officials on the International Legal Framework Governing Nuclear Safety, Security and Safeguards to increase the awareness of policy makers of the interrelationship between nuclear safety, security and safeguards, and the importance of establishing comprehensive and effective nuclear legislative systems in African countries.

Significant efforts are being deployed under the TC programme to improve the radiation protection infrastructure in all African Member States. Special emphasis has been placed on the establishment of legislative and regulatory framework for enforcement of radiation safety standards and targeted assistance for the safe conditioning and disposal of radioactive sources.

Activities under a regional AFRA project aim at assisting Member States to increase national capacity for prevention, detection and response to illicit trafficking of nuclear and other radioactive materials; to train staff in regulatory authorities at locations where these materials are used or stored, and staff in law enforcement organizations. A regional strategy has been developed to consolidate Africa's capacity in the field and to address major regional priorities, including fostering of cross-border cooperation, development of training packages for Member States, drafting of legislation/regulations to help Member States build the national regulatory capability in the field, and strengthening of coordination between the various sources of assistance.

Innovative approaches for funding the priorities of NEPAD

In order to increase the availability of funds, efforts will be pursued by the Agency to develop strategic partnerships. Special emphasis will be placed on supporting activities in the areas of water resources development, human nutrition and health, food and agriculture, focusing on the programme being implemented in partnership with the African Union's Coordination Office of PATTEC. In the area of health, efforts will be made under the Programme of Action for Cancer Therapy (PACT) to develop strategic, technical and financial partnerships to support plans for cancer management in African countries.

Advocacy and awareness-raising

Within its mandate, the IAEA carries out substantive advocacy work to raise awareness of NEPAD in policy discussions with Member States at different stages of programme planning and formulation, and in meetings and consultations with regional and international organisations, and multilateral and bilateral development partners.