



International Atomic Energy Agency

GENERAL Distr.
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Forty-fifth regular session
Item 17 of the agenda
(GC(45)/28)

**STRENGTHENING THE AGENCY'S ACTIVITIES RELATED TO
NUCLEAR SCIENCE, TECHNOLOGY AND APPLICATIONS**

Resolution adopted on 21 September 2001 during the tenth plenary meeting

A.**PLAN FOR PRODUCING POTABLE WATER ECONOMICALLY
USING SMALL AND MEDIUM-SIZED NUCLEAR REACTORS**

The General Conference,

- (a) Recalling its resolutions GC(43)/RES/15 and GC(44)/RES/22,
- (b) Recognizing that sufficient and clean potable water supplies for all mankind are of vital importance, as emphasized in Agenda 21 of the Rio Summit on Development and Environment and subsequently recalled at the 19th special session of the United Nations General Assembly,
- (c) Taking note with great concern of the fact that a great portion of the world's population will, over the next years, face the ever-growing problems of potable water shortages,
- (d) Noting that seawater desalination using nuclear energy is technically feasible and in general cost-effective,
- (e) Noting also the interest of a number of Member States in activities relating to seawater desalination using nuclear energy,
- (f) Underlining the urgent need for regional and international co-operation in helping to solve the serious problem of potable water shortages, particularly through the desalination of seawater,
- (g) Taking note with appreciation of the different activities carried out by the Secretariat, as outlined in the report of the Director General contained in document GC(45)/15, and the guidebook entitled "Introduction of Nuclear Desalination" contained in IAEA Technical Reports Series 400,

- (h) Taking note with concern of the rate of progress in the interregional technical co-operation project on “Integrated nuclear power and desalination system design”,
- (i) Expressing its appreciation for the continued effort of the International Nuclear Desalination Advisory Group (INDAG),
- (j) Noting that the Agency has initiated a programme to assist developing countries interested in small and medium-sized reactors (SMRs) to address economics, safety, reliability and technical measures for proliferation resistance, and
- (k) Acknowledging that innovative SMRs are of particular interest also for non-electrical energy, particularly in the desalination of seawater,
1. Requests the Director General to continue consultations and interactions with interested Member States, the competent organizations of the United Nations system, multilateral financial institutions, regional development bodies and other relevant intergovernmental and non-governmental organizations in activities relating to seawater desalination using nuclear energy;
 2. Invites the Director General to:
 - continue to take the appropriate measures to assist Member States, particularly developing countries, engaged in the process of preparatory actions with regard to demonstration projects, and
 - carry out, within existing resources, further work on safety-related aspects in connection with the desalination of seawater;
 3. Invites INDAG to continue its functions as a forum for advice and review on nuclear desalination activities;
 4. Stresses the need for international co-operation in the planning and implementation of nuclear desalination demonstration programmes through national and regional projects open for the participation of any interested country;
 5. Requests the Director General and interested Member States to include in the feasibility studies (besides the technical aspects) the social and economic impact of this technology;
 6. Further invites the Director General to seek appropriate funding from extrabudgetary resources and to raise seed money in order to catalyse and contribute to the implementation of all Agency activities relating to nuclear desalination and the development of innovative SMRs;
 7. Requests the Director General to note the high priority given by Member States to the nuclear desalination of seawater and SMR development in the process of preparing the Agency’s Programme and Budget and to promote effective international information exchange and co-operation in this area; and
 8. Further requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its forty-seventh session under an appropriate agenda item.

B.

**USE OF ISOTOPE HYDROLOGY FOR WATER RESOURCES
MANAGEMENT**

The General Conference,

- (a) Appreciating the work done by the Agency in the area of isotope hydrology in response to resolution GC(43)/RES/16,
 - (b) Recognizing that the Agency has well demonstrated the importance of isotope techniques for water resources development and management, particularly in arid and semi-arid areas, and also for the evaluation of pollutant transport in groundwater and surface water systems,
 - (c) Conscious of the proven techno-economic benefits of isotope hydrology in water resources management when used in conjunction with well-established conventional hydrological investigations and modern methods like remote sensing,
 - (d) Noting that the initiatives of the Agency, as mentioned in document GC(45)/16, go in the right direction in that high national priorities are taken into account as well as the socio-economic impact of the utilization of isotope techniques in water resources management in Member States,
 - (e) Appreciating the initiatives taken by the Agency in co-operating with other relevant international organizations active in water resources development and management, and
 - (f) Also appreciating the work of the Agency on dam leakage detection, safety and sustainability,
1. Requests the Director General, subject to the availability of resources:
- (a) to continue to further strengthen the efforts directed towards fuller utilization of isotope and nuclear techniques for water resources development and management in the interested countries, including measures to control and detect groundwater and surface water pollution, through appropriate programmes, by increased collaboration with national and other international organizations dealing directly with water resources management,
 - (b) to continue to help Member States to obtain easy access to isotope analysis facilities by upgrading selected isotope hydrology laboratories to the level of regional resource centres, and
 - (c) to continue its work on dam leakage detection, safety and sustainability;
2. Requests the Agency to continue, along with other relevant United Nations agencies, to develop human resources in isotope hydrology through appropriate courses, at universities in Member States, through the use of advanced communications techniques and at regional training centres, designed to provide practising hydrologists with the ability to use isotope techniques, and

3. Further requests the Director General to report on achievements in implementing this resolution to the Board of Governors and to the General Conference at its forty-seventh session under an appropriate agenda item.

C.

SERVICING IMMEDIATE HUMAN NEEDS

The General Conference,

- (a) Recalling its resolution GC(44)/RES/24,
- (b) Appreciating the important role that nuclear applications play in addressing basic human needs
- (c) Conscious that the work done by the Agency in the field of nuclear sciences and applications in the non-power sector contributes to sustainable development, especially with programmes aimed at enhancing agricultural productivity and food security, improving human health, increasing the availability of drinking water supplies and protecting the terrestrial and marine environment,
- (d) Recognizing that nuclear and isotopic techniques, appropriately integrated with other technologies and adapted to individual sectors of development, help in addressing many of the current issues and emerging needs for sustainable development earmarked for priority action by Member States,
- (e) Noting the importance of regional and interregional projects aimed at promoting the sustainable scientific and technical development of participating countries, such as Synchrontron-Light for Experimental Science and Applications in the Middle East (SESAME) supported and recognized by other United Nations organizations such as UNESCO,
- (f) Aware that nuclear sciences and applications in the non-power sector provide the core scientific and technical support to Member States for non-power applications as mandated by Article III of the Agency's Statute and as described in the technology pillar of the Agency's Medium Term Strategy (MTS) for 2001-2005,
- (g) Recognizing the success of the Sterile Insect Technique (SIT) in the eradication of the tsetse fly and other insects of economic importance, and further recognizing that malaria, transmitted by mosquitoes, causes about two million deaths a year and 300 - 500 million cases of clinical malaria annually,
- (h) Noting that the technology for the field application of the SIT against malaria-bearing mosquitoes is yet to be developed,
- (i) Noting also the pressing needs of an increasing number of developing Member States interested in the control and eradication of malaria and other mosquito-borne diseases,
- (j) Underlining the urgent need for regional and international co-operation in helping to solve the serious problems posed by malaria,
- (k) Noting that a large increase in the number of solid cancers is expected in developing Member States owing to increasing life expectancies,

- (l) Noting the continuous threat to civilians and to economic and social development posed by abandoned land mines buried in many countries, especially developing ones, and further noting the significant progress made by the Agency in developing nuclear methods for locating land mines, and
- (m) Noting also that the emerging role of isotopic techniques in nutrition research for solving malnutrition problem worldwide is well recognized,
1. Requests the Agency, subject to the availability of resources and in co-operation with Member States and relevant international organizations,
- (a) to continue to intensify R&D activities and efforts that would lead to possible applications of the SIT in the control or eradication of mosquitoes;
 - (b) to continue to support the building-up of indigenous capabilities in radiation therapy to cure or alleviate the life-threatening effects of solid cancers in developing Member States and to improve safety standards;
 - (c) to continue to strengthen, taking into account relevant developments in Member States, its R&D activities relating to applications of nuclear techniques in humanitarian demining, especially in developing countries; and
 - (d) to continue to support research activities and capacity-building programmes for nutrition R&D for meeting basic human needs; and
2. Requests the Director General to report on the achievements in implementing this resolution to the Board of Governors and to the General Conference at its forty-seventh session under an appropriate agenda item.

D.

SUPPORT TO THE ORGANIZATION OF AFRICAN UNITY'S PAN AFRICAN TSETSE AND TRYPANOSOMIASIS ERADICATION CAMPAIGN (PATTEC)

The General Conference.

- (a) Recalling its previous resolutions on strengthening of the Agency's technical co-operation activities, including resolution GC(44)/RES/24,
- (b) Recognizing the significant contribution of the Agency's programmes in addressing basic human needs,
- (c) Recognizing that tsetse flies, a transboundary problem affecting 37 African countries and causing an estimated annual loss of US\$4.5 billion, are one of Africa's greatest constraints to socio-economic development, severely affecting human and livestock health, limiting land use, causing poverty and perpetuating underdevelopment on the African continent,
- (d) Recognizing that elimination of tsetse flies would significantly contribute to increased productivity of crops and livestock and reduce rural poverty on the African continent,

- (e) Recognizing the technical and economic feasibility, the environmental friendliness and the indispensability of the Sterile Insect Technique (SIT) for creating tsetse-free zones and the results achieved so far in some African countries,
- (f) Acknowledging the efforts of the Agency on R&D for tsetse SIT over several years and the support already being provided by the Agency to some African Member States in their efforts to eradicate tsetse flies and the success achieved so far,
- (g) Acknowledging also the extrabudgetary resources provided by a number of Member States in support of those efforts,
- (h) Noting decisions AHG/Dec. 156(XXXVI) and AHG/Dec. 169(XXXVII) of the Heads of State and Government of the Organization of African Unity (OAU) to free Africa of tsetse flies and their endorsement of and commitment to the OAU's Plan of Action for the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC),
- (i) Noting that PATTEC recognizes the central role to be played by the SIT in the eradication of tsetse flies from Africa,
- (j) Noting the acknowledgement of the problem by the Secretary-General of the United Nations in his recent report to the United Nations Economic and Social Council, and
- (k) Conscious of the need for international support for the OAU's initiative aimed at ridding Africa of the tsetse fly problem,
1. Welcomes the OAU's Plan of Action for the eradication of tsetse flies from Africa;
 2. Appreciates the efforts being made by the Director General to support the application of the SIT in the eradication of tsetse flies from Africa;
 3. Calls upon Member States to provide technical, financial and material support to African States in their efforts to eradicate tsetse flies;
 4. Stresses the need for international co-operation to enable African countries to widely utilize the SIT for tsetse fly eradication, wherever possible through the TCDC mechanism;
 5. Requests the Agency, in co-operation with Member States and relevant international organizations, to continue supporting African Member States in their efforts to eradicate tsetse flies, and in particular to support the OAU's Plan of Action for the eradication of tsetse flies through utilization of the SIT within available resources; and
 6. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its forty-sixth session.

E.

DROUGHT IN CENTRAL AMERICA

The General Conference,

- (a) Recalling its resolutions GC(44)/RES/18 on “Strengthening of the Agency’s technical co-operation activities” and GC(43)/RES/16 on “Extensive use of isotope hydrology for water resources management”,
- (b) Noting that the Agency’s fundamental objectives as laid down in Article II of its Statute are, inter alia, to accelerate and enlarge the contribution of the Agency to peace, health and prosperity throughout the world,
- (c) Concerned by the recent serious drought which has devastated the region of Central America, causing considerable damage to agriculture which has in turn led to serious starvation and disease for more than one million people in four countries of the region, and that these conditions have already caused the death of hundreds of children and old people and threaten to take many more victims if adequate measures are not taken,
- (d) Conscious of the fact that this situation could have been largely avoided if the region had adequate irrigation systems, based on better knowledge and, consequently, better management of its water, especially groundwater, resources, and
- (e) Noting the successful experience that other geographical regions have had in using isotope hydrology (radioactive isotopes) to determine, locate and calculate better the capacity of the groundwater resources, necessary elements for better and more rational use of such resources for agriculture as well as for human consumption,
1. Expresses its deepest sympathy with the peoples and Governments of Central America that have been affected by this drought and famine;
 2. Invites the international community to provide its support both in material resources and in technical co-operation to help the Governments affected to contend with and resolve this extremely grave situation in the short term and to prevent it in future;
 3. Requests the Secretariat to continue to assist, in co-operation with other relevant international organizations and subject to the availability of resources, the Member States concerned in the Central American region, especially the countries affected by the drought and famine (Guatemala, El Salvador and Nicaragua), within the framework of the Agency’s technical co-operation programme on isotope hydrology, taking into account the applications of these techniques in other areas and with a view to promoting better knowledge and use of the water resources in order to assist in preventing and avoiding situations like the present drought and the consequent public health crisis due to the shortage of food; and
 4. Requests the Director General to submit a report on implementation of this resolution to the General Conference at its forty-sixth session under an appropriate agenda item.

F.

AGENCY ACTIVITIES IN THE DEVELOPMENT OF INNOVATIVE NUCLEAR TECHNOLOGY

The General Conference,

- (a) Recalling the Agency statutory functions “to encourage and assist research on, and development and practical application of, atomic energy for peaceful uses ... and ... to foster the exchange of scientific and technical information”,

- (b) Conscious of the potential contribution of nuclear energy to meet the growing energy needs in the 21st century,
 - (c) Recalling its resolutions GC(44)/RES/21 and GC(44)/RES/22 and inviting all interested Member States to combine their efforts under the aegis of the Agency in considering the issues of the nuclear fuel cycle, in particular by examining innovative, safe, economically competitive and proliferation-resistant nuclear technology for sustainable development,
 - (d) Noting the progress achieved in a number of Member States in the development of innovative nuclear technology and the high technical and economic potential of international collaboration in the development of such technology,
 - (e) Noting also the progress of other initiatives, such as the Generation-IV International Forum and the Three Agency Initiative of the IAEA, NEA and IEA, and their contribution to developing innovative approaches to nuclear power, and
 - (f) Recognizing the unique role that the Agency can play in international collaboration in the nuclear field,
1. Commends the Director General and the Secretariat for the efforts undertaken to develop the activities in these areas and, in particular, for the establishment of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) in response to the relevant General Conference resolutions;
 2. Emphasizes the unique role that the Agency can play in developing user requirements and in addressing safeguards, safety and environmental questions for innovative reactors and their fuel cycles;
 3. Stresses the need for international collaboration in the development of innovative nuclear technology and the high potential and added value achieved through joint developments;
 4. Invites all interested Member States to contribute to innovative nuclear technology activities in terms of scientific and technical information, financial support or technical and other relevant experts;
 5. Invites the Secretariat to take further measures, within available extrabudgetary resources, to continue its efforts in these areas; and
 6. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its forty-sixth session under an appropriate agenda item.