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Strengthening the Agency's activities related to nuclear science, technology and applications

Resolution adopted on 20 September 2012 during the seventh plenary meeting

A.

Non-power nuclear applications

1.
General

The General Conference,

(a) Noting that the Agency's objectives as outlined in Article II of the Statute include "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world",

(b) Noting also that the statutory functions of the Agency as outlined in Article III of the Statute, paragraphs A.I to A.4, include encouraging research and development and fostering the exchange of scientific and technical information and the training of scientists and experts in the field of peaceful uses of atomic energy, with due consideration for the needs of developing countries,

(c) Noting the Medium Term Strategy 2012-2017 as guidance and input in this respect,

(d) Stressing that nuclear science, technology and applications address and contribute to a wide variety of basic socio-economic human development needs of Member States, in such areas as energy, materials, industry, environment, food, nutrition and agriculture, human health and water resources, noting that many Member States are obtaining benefits from the application of nuclear techniques in food and agriculture through the Joint FAO/IAEA Programme, and welcoming the decision of the FAO to continue collaborating with the IAEA through this joint programme, including exploring ways of improving such collaboration,

(e) Noting that the United Nations General Assembly, in resolution 64/292, called upon States and international organizations to provide financial resources, capacity-building and technology transfer, through international assistance and cooperation, in particular to developing countries, in order to scale up efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all,

(f) Recognizing the success of the sterile insect technique (SIT) in the suppression or eradication of the screw-worm, the tsetse fly, and various fruit flies and moths that can cause large economic impacts,

(g) Noting the perpetual serious problem of locusts in Africa, especially in areas highly prone to environmental degradation and desertification, and that it has been responsible for severe famine in certain countries,

(h) Confirming the important role of science, technology and engineering in enhancing nuclear and radiation safety and security, and the need to resolve the issues of managing radioactive waste in a sustainable manner,

(i) Acknowledging that the peaceful use of fusion energy can be advanced through increased international efforts and with the active collaboration of interested Member States and organizations in fusion-related projects, and aware of the next biennial IAEA Fusion Energy Conference (FEC2012), to be held in the United States of America in October 2012,

(j) Taking note of the "Nuclear Technology Review 2012" (GC(56) /INF/3),

(k) Aware of the problems of pollutants arising from urban and industrial activities and the potential of radiation treatment to address some of them, including industrial waste waters, and noting the initiative taken by the Agency to enable exploration of this radiation technology for waste water treatment in Member States through a coordinated research project (CRP),

(l) Recognizing the increasing use of radioisotopes and radiation technology in healthcare practices, crop improvement, food preservation, industrial process management, new materials development, analytical sciences, sanitization and sterilization, and in measuring the effects of climate change on the environment,

(m) Noting the expanding use of positron emission tomography (PET), PET/computed tomography (PET/CT) and hospital-prepared radiopharmaceuticals,

(n) Noting the importance of molybdenum-99 availability for medical diagnosis and treatment and acknowledging with appreciation the efforts made by the Agency, in coordination with other international organizations, Member States and relevant stakeholders, to facilitate a reliable supply of molybdenum-99 by supporting the development of Member States' abilities to generate, for their indigenous needs and for export, the non-HEU-based production of molybdenum-99 and technetium-99m, including research into alternative molybdenum-99 direct production routes,

(o) Aware of the new cooperative initiatives that have emerged to provide reactor irradiation services in Europe, of the significant advances reported in commissioning new molybdenum-99 production facilities, and of the continued interest of many countries in establishing non-HEU-based molybdenum-99 production facilities to meet domestic needs and/or serve as a partial reserve capacity,

(p) Acknowledging the multiple uses of research reactors, including TRIGA reactors, as valuable tools for, inter alia, training, research, radioisotope production and materials testing as well as a learning tool for Member States that are considering the introduction of nuclear power,

(q) Noting the successful convening of the Agency-organized International Conference on Research Reactors: Safe Management and Effective Utilization in November 2011, and aware that greater regional and international cooperation will be needed to ensure broad access to research reactors, owing to the fact that older research reactors are being replaced by fewer multi-purpose reactors, resulting in a drop in the number of operational reactors,

(r) Noting with concern that the 35 TRIGA reactors worldwide would be adversely affected by the decision of the sole supplier of TRIGA fuel to cease the production of this fuel,

(s) Acknowledging the need for increasing the capacity of Member States for using advanced nuclear techniques in disease – including cancer – management, and aware of the need to develop performance indicators for measuring such capacity,

(t) Noting that the Agency has compiled and disseminated isotope data on aquifers and rivers worldwide and is addressing links between climate change, rising food and energy costs and the global economic crisis, with the aim of assisting decision-makers in adopting better practices for integrated water resources management and planning, and

(u) Noting with appreciation the fellowships and training sponsored by the IAEA Nobel Peace Prize Cancer and Nutrition Fund to improve cancer control and child nutrition in the developing world,

1. Requests the Director General, in conformity with the Statute, to continue to pursue, in consultation with Member States, the Agency's activities in the areas of nuclear science, technology and applications, with special emphasis on supporting the development of nuclear applications in Member States with a view to strengthening infrastructures and fostering science, technology and engineering for meeting sustainable growth and development needs of Member States in a safe manner;

2. Requests the Secretariat to fully utilize the capacities of Member State institutions through appropriate mechanisms in order to expand the extent that nuclear sciences and applications are utilized to achieve socio-economic benefits and the achievement of the Millennium Development Goals;

3. Underlines the importance of facilitating effective programmes in the areas of nuclear science, technology and applications aimed at pooling and further improving the scientific and technological capabilities of Member States through coordinated research projects (CRPs) within the Agency and between the Agency and Member States and through direct assistance, and urges the Secretariat to further strengthen capacity-building for Member States, particularly through interregional, regional and national training courses and fellowship training in the areas of nuclear science, technology and applications, and by expanding the scope and outreach of coordinated research activities (CRAs);

4. Recognizes the importance of and endorses Agency activities that meet the objective of fostering sustainable development and protecting the environment;

5. Urges the Secretariat to continue implementing efforts that contribute to greater understanding and a well-balanced perspective of the role of nuclear science and technology in sustainable global development, including the Kyoto commitments, and future efforts to address climate change;

6. Welcomes all contributions announced by Member States, including the IAEA Peaceful Uses Initiative, which is designed to raise US$ 100 million as extrabudgetary contributions to IAEA activities by 2015, and encourages all States in a position to do so to make additional contributions;

7. Calls upon the Secretariat to continue to address identified priority needs and requirements of Member States in the areas of nuclear science, technology and applications, including the use of the SIT to establish tsetse-free zones and for combating malaria-transmitting mosquitoes and the Mediterranean fruit fly, the unique applications of isotopes to track the global uptake by the oceans of carbon dioxide and the resulting acidification effects on marine ecosystems, the use of isotopes and radiation in groundwater management and applications relating to agriculture such as crop improvement and management in light of climate change, human health, including drug development and additional concrete efforts through PACT and in the use of cyclotrons, research reactors and accelerators for the production of radiopharmaceuticals, the development of novel materials, including the treatment of greenhouse gases (GHGs) and flue gases resulting from fossil fuel burning;

8. Welcomes the Secretariat's announcement during the 2012 UN Conference on Sustainable Development (Rio+20) about the establishment of the Ocean Acidification International Coordination Centre at the IAEA Environment Laboratories in Monaco to coordinate and carry out activities for helping to develop a more comprehensive understanding of the global effects of ocean acidification, an important step towards enhanced global cooperation in ocean acidification research, and further welcomes the significant extrabudgetary support for the Centre provided by a number of Member States under the IAEA Peaceful Uses Initiative;

9. Calls upon the Secretariat to make efforts, together with Member States, so that there are sufficient resources to modernize the Agency's nuclear applications laboratories at Seibersdorf with state-of-the-art facilities and equipment and ensure that maximum benefits in terms of capacity-building and technology enhancement are made available to Member States, particularly developing countries;

10. Urges the Secretariat to continue its cooperative work with other international initiatives, including the high-level group on the security of supply of medical radioisotopes established by the NEA, and to continue to implement activities that will contribute to securing and supplementing the molybdenum-99 production capacity, including in developing countries, in an effort to ensure the security of supplies of molybdenum-99 to users worldwide;

11. Requests the Secretariat to provide technical support to emerging national and regional efforts to establish non-HEU-based molybdenum-99 production capabilities in interested Member States;

12. Requests the Secretariat to foster regional and international efforts in ensuring wide access to existing multi-purpose research reactors in order to increase research reactor operations and utilization, and further request the Secretariat to facilitate the safe, effective and sustainable operation of these facilities;

13. Encourages the Secretariat to continue cooperating with the World Nuclear University (WNU) Annual School on Radioisotopes and to enhance its support for the participation of applicants from developing countries;

14. Requests the Secretariat to assist Member States interested in developing safety infrastructure in establishing regional training and educational centres in their regions, where they do not exist, for the specialized training of nuclear and radiological experts;

15. Urges the Secretariat to continue to engage with stakeholders and to encourage the international fuel supply industry to ensure uninterrupted and adequate supplies of research reactor fuel, including TRIGA fuel;

16. Calls for the support of the Agency in setting guidelines for the adoption of advanced techniques and equipment in radiation medicine in developing Member States;

17. Requests the Secretariat to continue providing assistance with capacity-building for quality assurance in radiopharmaceutical development and disseminating radiation technology guidelines based on international quality assurance standards;

18. Welcomes FAO's renewed commitment to the Arrangements for the Joint FAO/IAEA Division and FAO's Strategic Framework for 2010-2019, which provide a solid foundation for the strengthening and broadening of collaboration with, inter alia, the IAEA;

19. Requests the Secretariat to initiate, in collaboration with FAO and Member States, R&D on the possible use of nuclear techniques as a component of an integrated approach for combating locusts and to provide appropriate assistance to this end;

20. Requests the Secretariat to make efforts, together with Member States, to develop industrial irradiation facilities such as electron accelerators, with accessories for use in, inter alia, healthcare practices, crop improvement, food preservation, industrial applications, sanitization and sterilization, and further requests the provision of technical support for the use of research reactors in the production of radiopharmaceuticals and industrial radioisotopes;

21. Requests that the actions of the Secretariat called for in this resolution be undertaken subject to the availability of resources; and

22. Recommends that the Secretariat report to the Board of Governors and to the General Conference at its fifty-seventh (2013) regular session on the progress made in the areas of nuclear science, technology and applications.

2.
Development of the sterile insect technique for the eradication and/or suppression of malaria- transmitting mosquitoes

The General Conference,

(a) Recalling its resolution GC(44)/RES/24 on "Servicing Immediate Human Needs" and its resolutions GC(48)/RES/13.C and GC(52)/RES/12 on "Development of the Sterile Insect Technique for the Control or Eradication of Malaria-Transmitting Mosquitoes",

(b) Taking note of the decisions taken by the Summit of the African Union at its Fifteenth Ordinary Session, held in Kampala, Uganda, on 25-27 July 2010: on the five-year review of the Abuja Call for Accelerated Action Towards Universal Access to HIV/AIDS, Tuberculosis and Malaria Services in Africa; reaffirming the commitments undertaken at the Special Summit on HIV/AIDS, TB and Malaria, as well as under the Millennium Development Goals (MDGs) and the Decade for Roll Back Malaria; and deciding to extend the Abuja Call for Accelerated Action Towards Universal Access to HIV/AIDS, Tuberculosis and Malaria Services (the Abuja Call) to 2015 to coincide with attainment of the MDGs,

(c) Appreciating the important role of nuclear applications in addressing human needs,

(d) 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 the quality of life in various ways, including improving human health,

(e) Recognizing the success of the area-wide integrated application of the sterile insect technique (SIT) in the eradication and or suppression of tsetse flies, moths, fruit flies and other insects of economic importance,

(f) Noting with concern that malaria, transmitted by mosquitoes, causes about two million deaths a year and about 300-500 million cases of clinical malaria annually mainly, in Africa, where it is slowing down economic growth by 1.3% annually, thus constituting a major obstacle to poverty eradication in Africa,

(g) Noting that the malaria parasite has continued to develop resistance to drugs and that mosquitoes have continued to develop resistance to insecticides, and that it is envisaged that the SIT would be used under specific conditions as an adjunct to conventional technologies, conforming to the WHO's roll-back strategy, including integrated vector management, of not relying on any single approach to control malaria,

(h) Noting with serious concern that mosquito-transmitted dengue has become in recent years a major international public health concern due to the increasing spread of invasive mosquito species, with 2.5 billion people living in areas where dengue viruses can be transmitted, and that insecticide-treated bed nets are not effective in combating dengue as the mosquito vectors are active during the day and other control tactics are urgently required,

(i) Noting that the suppression of disease-transmitting mosquitoes using the SIT will be suitable mostly in urban areas, where aerial spraying with insecticides is prohibited or not indicated, and that an area-wide approach is required, which represents a novel and potentially powerful supplement to existing community-based programmes,

(j) Welcoming the fact that R&D on malaria and other disease-transmitting mosquitoes, which commenced with the inauguration of the SIT Facility in the Agency's Laboratories in Seibersdorf on 26 June 2003, continued during 2010-2011,

(k) Noting with appreciation that the Insect Green House in Seibersdorf is nearing completion and has been equipped with adequate internal climate control equipment and is now being used for competitiveness and other behavioural studies,

(l) Noting with appreciation the interest shown by some donors and their support for R&D on the SIT for combating malaria- and other disease-transmitting mosquitoes, and

(m) Acknowledging with appreciation the support given by the Agency to development of the SIT for the control of malaria- and other disease-transmitting mosquitoes as outlined in the report by the Director General in document GC(56)/7, Annex 1,

1. Requests the Secretariat to continue and strengthen, through the activities mentioned above, the research, both in the laboratory and in the field, required to use the SIT for the control of malaria- and other disease transmitting mosquitoes;

2. Requests the Agency to increasingly involve African and other developing Member States' scientific and research institutes in the research programme in order to ensure their participation, leading to ownership by the affected countries;

3. Requests the Agency to increase efforts to develop and transfer more efficient sex separation systems that allow complete removal of the female mosquitoes in production facilities;

4. Requests the Agency to develop a thematic plan for the SIT and related genetic and biological control methods for disease-transmitting mosquitoes;

5. Further requests the Agency to increase its efforts to attract extrabudgetary funds to enable expansion of the mosquito research programme, laboratory/office space and staffing,

6. Also requests the Secretariat to solicit extrabudgetary resources so as to enable increased efforts to be made in validating in the field the SIT package for disease-transmitting mosquitoes;

7. Invites the donors to continue with their financial support, and other Member States to make financial contributions to the research programme; and

8. Requests the Director General to report on the progress made in the implementation of this resolution to the General Conference at its fifty-eight session (2014).

3.
Support to the African Union's Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC)

The General Conference,

(a) Recalling its previous resolutions on support to the African Union's Pan African Tsetseand Trypanosomosis Eradication Campaign (AU-PATTEC),

(b) Recognizing that the tsetse flies and the trypanosomosis disease problem which they cause are spreading and constitute one of the greatest constraints on the African continent's socio-economic development, affecting the health of humans and livestock, limiting sustainable rural development and thus causing increased poverty and food insecurity,

(c) Recognizing that trypanosomosis continues to claim tens of thousands of human lives and millions of livestock every year and threatens over 60 million people in rural communities in 36 African countries, most of which are Agency Member States,

(d) Recognizing the importance of livestock development in rural communities affected by tsetse flies and trypanosomosis as a pathway out of poverty and hunger and a basis for food security and socio-economic development,

(e) Recalling decisions AHG/Dec.156 (XXXVI) and AHG/Dec. 169 (XXXVII) of the Heads of State and Government of the then Organization for Africa Unity (now African Union) to free Africa of tsetse flies and on a plan of action for implementing PATTEC,

(f) Recognizing the upstream work of the Agency under its Joint FAO/IAEA Programme in developing the sterile insect technique (SIT) against tsetse flies and providing assistance through field projects, supported from the Agency's Technical Cooperation Fund, on integrating tsetse SIT into Member States' efforts to address the tsetse fly and trypanosomosis problem in a sustainable manner,

(g) Cognizant that the SIT is a proven technique for the creation of tsetse-free zones when integrated with other control techniques and when applied within an area-wide integrated pest management (AW-IPM) approach,

(h) Welcoming the continuing close collaboration of the Secretariat with AU-PATTEC, in consultation with other mandated specialized UN organizations, in raising awareness regarding the tsetse fly and trypanosomosis problem, organizing regional training courses, reviewing the AU-PATTEC Plan of Action, drafting a PATTEC Strategic Plan for the period 2012-2018, and providing, through the Agency's Technical Cooperation Programme and Regular Budget Programme, operational assistance to field project activities, as well as advice regarding project

management and policy and strategy development in support of national and subregional AU-PATTEC projects,

(i) Welcoming the progress made by AU-PATTEC in increasingly involving – besides international organizations like the Agency, FAO and WHO – also NGOs and the private sector in the concerted effort to create and expand zones that are free of the tsetse and trypanosomosis (T&T) problem and to foster sustainable agriculture and rural development (SARD),

(j) Welcoming the significant progress made under the Ethiopian Southern Tsetse Eradication Project (STEP) and the progress made in the Agency-supported tsetse eradication project in Senegal,

(k) Appreciative of the contributions made by various Members States and United Nations specialized agencies in support of addressing the T&T problem in West Africa, especially for contributions made by the United States of America through the Peaceful Uses Initiative (PUI) projects for the control of T&T in Senegal,

(l) Acknowledging the continued close collaboration of the Secretariat and the Centre International de Recherche-Développement sur l'Elevage en Zone Sub-Humide (CIRDES) in Bobo-Dioulasso, Burkina Faso, the first IAEA Collaborating Centre in Africa in "The Use of the Sterile Insect Technique for Area-Wide Integrated Management of Tsetse Fly Populations",

(m) Appreciative of the special efforts made by the Joint FAO/IAEA Division and the FAO Animal Health Service in support of AU-PATTEC,

(n) Welcoming the efforts made by the Secretariat to address and eliminate obstacles to applying the tsetse SIT component in African Member States through applied research and methods development, both in-house and through the Agency's coordinated research project mechanism, and

(o) Acknowledging the continued support given to AU-PATTEC by the Agency as outlined in the report submitted by the Director General in document GC(56)/7, Annex 2,

1. Urges the Secretariat to continue assigning high priority to agricultural development in Member States, including efforts to build capacity and further develop the techniques for integrating the SIT with other control techniques in creating tsetse-free zones in sub-Saharan Africa;

2. Calls upon Member States to strengthen the provision of technical, financial and material support to African States in their efforts to create tsetse-free zones;

3. Requests the Secretariat, in cooperation with Member States and other partners, to maintain funding through the Regular Budget and the Technical Cooperation Fund for consistent assistance to operational SIT field projects and to strengthen its support for R&D in African Member States and technology transfer to African Member States in order to complement their efforts to create and subsequently expand tsetse-free zones;

4. Encourages the Secretariat to continue working closely with AU-PATTEC in the agreed areas of collaboration as specified in the Memorandum of Understanding between the African Union Commission and the Agency, signed in November 2009;

5. Stresses the need for continued harmonized, synergetic efforts by the Agency and other international partners, particularly FAO and WHO, with the aim of supporting the African Union Commission and Member States through the provision of guidance and quality assurance in planning and implementing sound and viable national and sub-regional AU-PATTEC projects;

6. Urges the Secretariat and other partners to strengthen capacity building and to support the establishment and operation of regional centres for providing large numbers of sterile male tsetse flies and for coordinating SIT operations as an important component of AW-IPM campaigns against the T&T problem;

7. Encourages the Joint FAO/IAEA Division and the FAO Animal Health Service to continue to support AU-PATTEC;

8. Stresses the need for continued need-driven and applied research and methods development and validation to serve field projects; and

9. 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 fifty-seventh (2013) regular session.

4.
Strengthening the support to Member States in food and agriculture

The General Conference,

(a) Recalling its resolutions GC(54)/RES/10.A.4 and GC(52)/RES/12.A.5 on "Strengthening the support to Member States in food and agriculture" and its resolution GC(51)/RES/14 on "Strengthening the Agency's activities related to nuclear science, technology and applications",

(b) Recognizing the central role of agricultural development in achieving several of the key Millennium Development Goals (MDGs), in particular to eradicate extreme poverty and hunger,

(c) Noting that, according to the FAO publication "The State of Food Insecurity in the World 2011", high food prices worsen food insecurity, and will have significant negative socio-economic impacts and political implications in all regions of the world,

(d) Noting the benefits from the peaceful application of nuclear techniques in food and agriculture, and the importance of making appropriate technologies available, particularly to developing Member States,

(e) Acknowledging that increased agricultural productivity, achieving higher crop yields and higher-producing and better-adapted livestock rather than bringing more land under cultivation, will be one of the key determinants to reduce poverty, meet the increasing food demand, and address the diminishing agricultural resources, whilst sustaining agricultural natural resources and conserving the environment,

(f) Appreciating the work of the Joint Division of the Food and Agriculture Organization of the United Nations (FAO) and the International Atomic Energy Agency (IAEA) dedicated to the development and application of nuclear and related techniques in food and agriculture, and welcoming the decision of FAO in 2009 to extend and to strengthen the work of the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture,

(g) Affirming the unique role of the Secretariat, and the contribution of the Joint FAO/IAEA Division in priority areas established by Member States — sustainable intensification of crop production, increased sustainable livestock production, sustainable management of land, water and genetic resources, improved responses to global environmental challenges affecting food and agriculture, and improved quality and safety of food at all stages of the food production chain,

(h) Noting the five pillars of FAO's amended strategy — eradication of hunger, sustainable food production and consumption, greater fairness in global food management, conclusion of FAO's organizational reform to improve efficiency, transparency and accountability, and expansion of partnerships and South-South cooperation,

(i) Expressing appreciation for the work undertaken by the Joint FAO/IAEA Division, including the FAO/IAEA Agriculture and Biotechnology Laboratory in Seibersdorf,

(j) Noting the importance of fit-for-purpose laboratories that comply with health and safety standards and that have the appropriate infrastructure,

(k) Commending the Secretariat on the effective support provided to Mongolia in containing the spread of foot-and-mouth disease in the country in 2011 and the assistance provided in the development of a pilot facility for the production of irradiated vaccines,

(l) Noting with appreciation the eradication of the Mediterranean fruit fly (medfly) from 300 000 hectares in Guatemala, facilitating the export of fresh fruit and vegetables to the United States of America and other high-value, medfly-free international markets,

(m) Applauding the support provided by the Agency to the African Union's Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC), fostering the suppression of tsetse flies and the disease they transmit in several affected Member States, including 10 000 km² of the Southern Rift Valley in Ethiopia, which has permitted an increase of productive livestock and has opened up opportunities for sustainable agricultural and rural development, benefiting thousands of farmers,

(n) Commending the Agency on its key role in the achievement of Global Freedom from Rinderpest, including its contributions of diagnostic capabilities and know-how and its support for building national and regional capacity, improving epidemiological studies and data management and setting up pertinent networks, and congratulates the Joint FAO/IAEA Division on the awards bestowed upon it by the Government of Kenya, the African Union Interafrican Bureau for Animal Resources (AU-IBAR) and FAO in recognition of these outstanding contributions,

(o) Applauding the initiation of new demand-driven R&D at the FAO/IAEA Agriculture and Biotechnology Laboratories in Seibersdorf on the development of the sterile insect technique (SIT) for mosquitoes, the use of isotopes in food traceability and in the investigation of irradiated animal vaccines, and the application of stable isotopes in tracing technologies and in enhancing animal disease (including foot-and-mouth disease) diagnostic applications,

(p) Welcoming the support of the Secretariat to the some African countries in the development of low-cost, small-scale drip irrigation technologies affordable to resource-poor farmers, which improved irrigation scheduling for high-value crops and reduced overall water requirements by up to 45%,

(q) Recognizing that the demand from Member States for technical assistance in the area of nuclear applications in food and agriculture remains high, as evidenced by Joint FAO/IAEA Division scientific and technical support for more than 230 national, regional and interregional technical cooperation projects and 33 coordinated research projects,

(r) Welcoming the official designation and inauguration of three further IAEA Collaborating Centres — in Burkina Faso (the first collaborating centre in Africa), Costa Rica and Italy — to support the Agency's mission in food and agriculture, and

(s) Commending the Secretariat on the successful 2012 Scientific Forum on "Food for the Future: Meeting the Challenges with Nuclear Applications - Increasing Food Production, Ensuring Food Protection, Enhancing Food Safety", dedicated exclusively to food and agriculture,

1. Urges the Secretariat to further expand, in an integrated and holistic manner, its efforts to address, inter alia, food insecurity in Member States and to increase its contribution to raising agricultural productivity and sustainability through the development and integrated application of nuclear science and technology;

2. Encourages the Secretariat, and in particular the Joint FAO/IAEA Division, to continue playing its unique role in strengthening the capacity of Member States in the use of nuclear and related techniques to improve food security and sustainable agriculture through international cooperation in research, training and outreach activities;

3. Urges the Secretariat to address the impacts of climate change on food and agriculture through the use of nuclear technologies, with the priority of adaptation and mitigation of climate change in the areas of soil and water management, insect pest control, plant breeding, livestock production and food safety, and requests the Secretariat to carry out new activities to address these challenges under the thematic heading of 'climate-smart agriculture';

4. Encourages the Joint FAO/IAEA Division, including the FAO/IAEA Agriculture and Biotechnology Laboratory in Seibersdorf, to continue its valuable work;

5. Requests the Secretariat to work towards the modernization of the FAO/IAEA Agriculture and Biotechnology Laboratory in Seibersdorf, in conjunction with the other programmatic entities of the laboratories of the Department of Nuclear Sciences and Applications, in order to assist Member States' research and development activities;

6. Urges the Secretariat to continue to strengthen its activities in the area of food and agriculture through inter-regional, regional and national capacity building, to facilitate the transfer of technology to developing Member States;

7. Expresses appreciation for the financial and extrabudgetary contributions made by Member States and others in support of, inter alia, the food and agriculture programme of the Agency and encourages Member States to continue making contributions to these activities by funding projects which would further enhance agricultural productivity;

8. Urges the Secretariat to further strengthen its efforts to seek extrabudgetary funding for infrastructure improvement and modernization of the Seibersdorf laboratories, especially the FAO/IAEA Agriculture and Biotechnology Laboratory;

9. Encourages the Secretariat to further strengthen its partnership with FAO and to continue adjusting and adapting its technology development, capacity building and technology transfer services in response to Member States' demands and needs in food and agriculture;

10. Appreciates the activities undertaken by the Secretariat in relation to emergency preparedness and response to nuclear incidents, including the accident at the Fukushima Daiichi Nuclear Power Station in March 2011, especially in the areas of agricultural countermeasures and remediation strategies to mitigate immediate and longer-term effects arising from radionuclide contamination, and urges the Secretariat to develop technologies to strengthen the capacity of Member States in emergency situations to deal with radiological contamination in the area of food and agriculture;

11. Urges the Secretariat to implement the outcomes of the 2012 Scientific Forum on "Food for the Future: Meeting the Challenges with Nuclear Applications - Increasing Food Production, Ensuring Food Protection, Enhancing Food Safety"; and

12. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and the General Conference at its fifty-eighth (2014) regular session.

5.
Modernization of the Agency's Nuclear Applications Laboratories at Seibersdorf

The General Conference,

(a) Recalling paragraph 9 of resolution GC(55)/RES/12.A.1, in which it called upon the Secretariat to make efforts, together with Member States, to modernize the Agency's Nuclear Applications (NA) Laboratories at Seibersdorf, thus ensuring maximum benefits to Member States, particularly developing ones,

(b) Affirming the major conclusions and recommendations in the OIOS evaluations of the "Contribution and Role of the FAO/IAEA Agriculture and Biotechnology Laboratory" (GOV/2010/59 and GOV/2011/18) and the findings that "the ABL is an indispensable asset of the Joint FAO/IAEA Food and Agriculture Programme's quest to improve the quality of life of the citizens of Member States" and that "no other global development enterprise within it has such vital scientific expertise that offers a conduit into the world's technical institutions", and acknowledging that these findings are relevant not only to each of the five laboratories of the ABL, but also to the three other NA laboratories at Seibersdorf,

(c) Acknowledging with appreciation that the Agency's NA Laboratories at Seibersdorf have served Member States well over the past half-century through R&D activities, capacity building and laboratory services,

(d) Fully supporting the continuation of the mandate and the role of the Agency's NA Laboratories at Seibersdorf within the strategic direction of the Department of Nuclear Sciences and Applications,

(e) Recognizing that appropriate reference NA laboratories at Seibersdorf would substantially add to the credibility of the Agency and the quality of the services provided to Member States,

(f) Emphasizing the importance of fit-for-purpose laboratories that comply with health and safety standards and that have the appropriate infrastructure,

(g) Recognizing that the NA Laboratories at Seibersdorf are in urgent need of modernization in order to respond to the evolving range and complexity of requests and the growing demands of Member States and to keep pace with increasingly rapid technological developments,

(h) Noting with concern that the facilities of the NA Laboratories at Seibersdorf, initially established in the 1960s, no longer meet the standards that may be rightfully expected of the Agency, and that activities relating to the three pillars of R&D, capacity building and laboratory services are clearly suffering from a severe lack of space and fit-for-purpose resources, and

(i) Fully supporting the concept of modernization of the NA Laboratories at Seibersdorf initiated by the Director General,

1. Stresses the need, in conformity with the Statute, for the Agency to continue pursuing R&D activities in the areas of nuclear science, technology and applications where the Agency has a comparative advantage so as to meet the basic sustainable development needs of Member States;

2. Underlines the importance of appropriate reference NA laboratories for facilitating effective programmes in the areas of nuclear science, technology and applications aimed at pooling and further

improving scientific and technological capabilities in Member States through coordinated R&D within the Agency and between the Agency and Member States;

3. Urges the Secretariat to map current activities/services of the NA Laboratories at Seibersdorf aimed at benefiting Member States and other stakeholders, to quantify future needs/demands and to identify current and anticipated future gaps;

4. Requests the Secretariat to develop a strategic overarching plan of action for the modernization of the NA Laboratories at Seibersdorf, provide a concept and methodology for the short-, medium- and long-term modernization programme and outline the vision and future role for each of the eight NA laboratories;

5. Requests the Secretariat to determine overall funding needs, to outline options for resource mobilization and partnerships, including with research institutes, intergovernmental organization, NGOs and private companies, and to draft proposals for increasing visibility in order to attract the required funding;

6. Further urges the Secretariat to ensure that the NA Laboratories at Seibersdorf have the necessary equipment, that they are modernized and continually upgraded and that the infrastructure of the current laboratory space of the NA Laboratories at Seibersdorf is expanded so as to ensure that both current and future demands of Member States can be proficiently met in a manner that fully addresses the criteria and requirements for good laboratory practices and quality management systems;

7. Invites Member States to provide financial support for modernizing the NA Laboratories at Seibersdorf, and other potential donors to make appropriate financial contributions; and

8. Requests the Director General to report to it on progress made in the implementation of this resolution at its fifty-seventh session (2013).

B.

Nuclear power applications

1.
General

The General Conference,

(a) Recalling resolution GC(55)/RES/12 and previous General Conference resolutions on strengthening the Agency's activities related to nuclear science, technology and applications,

(b) Noting that the Agency's objectives as outlined in Article II of the Statute include "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world",

(c) Noting also that the Agency's statutory functions include "to encourage and assist research on, and practical application of, atomic energy for peaceful uses", "to foster the exchange of scientific and technical information", and "to encourage the exchange and training of scientists and experts in the field of peaceful uses of atomic energy", including the production of electric power, with due consideration for the needs of developing countries,

(d) Stressing that the availability of energy and access to it are vital to human development, while noting that the health of the planet's environment is a serious concern that must be regarded as a priority by all governments, including taking actions to reduce pollution and waste and to address the risk of global climate change, and recognizing that Member States pursue different ways to achieve energy security and climate protection goals,

(e) Taking note of the Agency's contributions to relevant international discussions, including those addressing global climate change, such as the 17th Conference of the Parties (CoP-17) to the United Nations Framework Convention on Climate Change, held in December 2011 in Durban, South Africa, and the United Nations Conference on Sustainable Development (Rio 10+20), held in June 2012 in Rio de Janeiro, Brazil,

(f) Noting that significant concerns over energy resource availability, the environment and energy security suggest that a wide variety of energy options needs to be addressed in a holistic manner in order to ensure they are competitive, environmentally benign, safe, secure and affordable, so as to support sustainable economic growth in all countries,

(g) Acknowledging that each State has the right to decide on its priorities and establish its national energy policy in accordance with its national requirements, taking into account relevant international obligations, and to use diverse portfolios of energy sources when pursuing its own way to achieving its goals,

(h) Noting that nuclear power does not produce either air pollution or greenhouse gas emissions during normal operation and that, according to the Director General's report contained in document GC(56)/INF/3 and the Agency's Annual Report for 2011, it remains an important option not only for countries with existing nuclear programmes but also for developing countries with growing energy requirements,

(i) Recognizing that the accident that occurred on 11 March 2011 at TEPCO's Fukushima Daiichi Nuclear Power Station, triggered by an extraordinary natural event, has shown the need for further improvements in nuclear safety, particularly for addressing extreme natural events,

(j) Noting that, a year after the Fukushima Daiichi accident, most States already engaged in nuclear power programmes prior to the accident and newcomer countries embarking on nuclear power programmes will continue to pursue their programmes, as they consider nuclear energy to be a viable option in meeting their energy needs and addressing climate change, while a few of those States and some other States have decided, based on their own national assessments of nuclear power benefits and risks, to phase out their nuclear power programmes or to continue not to use nuclear power,

(k) Stressing that the use of nuclear power must be accompanied at all stages by commitments to and ongoing implementation of the highest standards of safety and security throughout the life of the power plants, and effective safeguards, consistent with States' national legislation and respective international obligations, as well as the need to resolve the issues of managing radioactive waste in a safe and sustainable manner, and confirming the important role of science and technology in continuously addressing these challenges, particularly through innovations,

(l) Recalling the importance of human resource development, education and training and knowledge management, and stressing the Agency's unique experience and capacity to assist Member States in building their national capacities in nuclear power and its applications, inter alia through its technical cooperation programme and by bringing together interested Member States, including both technology users and holders, to consider jointly innovations in nuclear reactors, fuel cycles and institutional approaches, such as the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO),

(m) Noting the progress achieved by the Agency's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) in understanding the challenges of global nuclear

energy sustainability through Nuclear Energy System Assessments (NESAs) and global nuclear energy scenario analysis,

(n) Stressing also the essential role the Agency plays as an international forum for the exchange of information on and experience nuclear power plant operation and for the continuous improvement of this exchange among interested Member States, and noting the launching of the Nuclear Operator Organization Cooperation Forum during the 55th regular session of the General Conference, while recognizing both the role of international organizations such as OECD/NEA, NGOs and multinational operators networks such as WANO, and the need to strengthen the cooperation between the Agency and these organizations,

(o) Recalling that launching a nuclear power programme requires the development and implementation of an appropriate infrastructure to ensure the safe, secure and efficient use of nuclear power in a sustained manner, and the assurance of the highest standards of nuclear safety, taking into account relevant Agency standards and guidance and relevant international instruments, as well as a strong and long-term commitment of national authorities to creating and maintaining this framework,

(p) Noting the increasing number of technical cooperation projects including the provision of assistance to Member States planning to introduce nuclear power generation in conducting energy studies to evaluate future energy options and in establishing appropriate technical, human, legal, regulatory and administrative infrastructure, and acknowledging the Agency's role in facilitating the safe, secure and efficient use of nuclear power,

(q) Recognizing the difficulties in obtaining financing arising from the high capital costs of a nuclear plant and the obstacles they create in making nuclear power a viable option in meeting energy needs, in particular for developing countries,

(r) Noting the increasing number of requests from Member States for advice on the exploration of uranium resources and on mining and milling for safe and effective uranium production while minimizing the environmental impact, and acknowledging the importance of the Agency's assistance in this field,

(s) Noting the progress made by the Secretariat on the administrative, financial, legal and technical aspects of the IAEA LEU bank that is to serve as a supply of last resort for nuclear power generation,

(t) Noting also the functioning of the LEU reserve in Angarsk, Russian Federation, comprising 120 tons of LEU under the aegis of the Agency,

(u) Aware of the availability of the American Assured Fuel Supply, a bank of approximately 230 tons of LEU, for responding to supply disruptions in countries pursuing peaceful civilian nuclear programmes,

(v) Taking note of the Nuclear Technology Review 2012 (GC(56)/INF/3) and of the report Strengthening the Agency's Activities related to Nuclear Science, Technology and Applications (GC(56)/7) prepared by the Secretariat,

(w) Welcoming the announcement by the Secretariat of its intention to hold an International Ministerial Conference on Nuclear Power in the 21st Century - to include a plenary session and technical sessions on "Energy and the Environment", "Nuclear Safety and Reliability through International Cooperation", "Infrastructure, Technology and Institutional Developments – The

Way Forward", and "Drivers for Deployment of Sustainable and Innovative Technology" - that will follow similar successful conferences held in Paris in 2005 and Beijing in 2009,

(x) Noting with interest the update of the Secretariat's report on the International Status and Prospects of Nuclear Power 2012 (document GC(56)/INF/6), which provides a comprehensive overview of the international status and prospects of nuclear power for the benefit of Member States and policy-makers worldwide, and

(y) Taking note of the publication of the Red Book 2011 on uranium resources, production and demand, produced by the Agency in cooperation with OECD/NEA,

1. Affirms the importance of the role of the Agency in facilitating, through international cooperation among interested Member States, the development and use of nuclear energy for peaceful purposes, including the specific application of the generation of electric power, in assisting these States in that regard, in fostering international cooperation and in disseminating to the public well-balanced information on nuclear energy;

2. Underlines the importance of facilitating effective programmes in the areas of nuclear science, technology and applications related to nuclear power, aimed at pooling and further improving the scientific and technological capabilities of interested Member States through cooperation and coordinated research and development;

3. Recommends that the Secretariat continue to implement efforts that contribute to a greater understanding and a well-balanced picture of the role of nuclear science and technology in a global, sustainable development perspective;

4. Recommends that the Secretariat extend its cooperation with international initiatives such as UN-Energy in exploring the possibility of a dialogue forum for the benefit of Member States aimed at defining sustainable global and regional energy scenarios through the application of a commonly recognized assessment methodology;

5. Stresses the importance, when planning and deploying nuclear energy, including nuclear power and related fuel cycle activities, of ensuring the highest standards of safety and emergency preparedness and response, including incorporating the lessons learned from the Fukushima Daiichi accident, security, non-proliferation, and environmental protection;

6. Requests the Secretariat to continue to pursue, in consultation with interested Member States, the Agency's activities in the areas of nuclear science and technology for nuclear power applications in Member States, with a view to strengthening infrastructures, including safety and security infrastructures, and fostering science, technology and engineering;

7. Requests in particular the Secretariat to continue and strengthen its efforts relating to nuclear power, fuel cycle and radioactive waste management, focusing particularly on technical areas where the needs for improvement, advances and enhanced international collaboration are greatest;

8. Stresses in this connection that the safe management of spent fuel, which for some countries includes reprocessing and recycling, as well as the safe management and/or disposal of radioactive waste are of great importance, inter alia for the sustainable, safe and secure development of nuclear power and to avoid imposing undue burdens on future generations, and, while noting that each State remains responsible for the management of its spent fuel and radioactive waste, encourages international cooperation in the safe management of spent fuel and radioactive waste;

9. Welcomes the Agency's assistance and review services provided to countries embarking on new nuclear power programme through, inter alia, the Planning and Economic Studies Section (PESS), the

Integrated Nuclear Infrastructure Group (INIG) and INPRO, and encourages these countries to use this assistance and these review services when planning their energy programmes, developing their national infrastructures for nuclear power and defining their long-term strategies for sustainable nuclear energy;

10. Acknowledges the importance of the Agency's technical cooperation projects for assisting Member States in energy analysis and planning, and in establishing the infrastructures required for the safe, secure and efficient introduction and use of nuclear power, and encourages interested Member States to consider how they can further contribute in this field by enhancing the Agency's technical cooperation with developing countries;

11. Notes with satisfaction the organization of workshops on vital topics related to nuclear power, such as technologies and economics, the competitiveness of nuclear power and other energy technologies, the development of the required infrastructure for the safe, secure and efficient use of nuclear power, desalination, partitioning and transmutation, as well as the training of many professionals from Member States through various regional and national courses, and encourages the Agency to continue such activities, while ensuring the widest possible participation of experts from all interested Member States;

12. Welcomes the activities of the Agency in human resource development and knowledge management, the initiatives in creating an IAEA e-learning platform, schools and institutes for education and training in the field of nuclear energy;

13. Welcomes all contributions announced by Member States, including the IAEA Peaceful Uses Initiative, which is designed to raise US$ 100 million as extrabudgetary contributions to IAEA activities by 2015, and encourages Member States in a position to do so to contribute;

14. Takes note of the Secretariat's continuing examination of various aspects of the financing of nuclear power, and also encourages interested Member States to work with the relevant financial institutions towards addressing financial issues related to the introduction of enhanced safety design and technologies of nuclear power;

15. Respectful of the rights of each Member State, encourages discussions, in a non-discriminatory, inclusive and transparent manner, on the development of multilateral approaches to the nuclear fuel cycle, including the possibilities of creating mechanisms for assurance of nuclear fuel supply, as well as possible schemes dealing with the back-end of the fuel cycle;

16. Encourages interested Member States to participate in the International Ministerial Conference on Nuclear Power in the 21st Century that will be held in St. Petersburg from 27 to 29 June 2013, hosted by the Government of the Russian Federation;

17. Requests that the actions of the Secretariat called for in this resolution be undertaken as a priority subject to the availability of resources; and

18. Requests the Secretariat to report to the Board of Governors as appropriate and to the General Conference at its fifty-seventh (2013) session on developments relevant to this resolution.

2.
Agency activities in the development of innovative nuclear technology

The General Conference,

(a) Recalling its previous resolutions on the Agency's activities in the development of innovative nuclear technology,

(b) Conscious of the need for sustainable development and of the potential contribution of nuclear power to meeting the growing energy needs in the 21st century,

(c) Referring to the Declaration by the IAEA Ministerial Conference on Nuclear Safety held in Vienna on 20 June 2011, which notes the role of innovative technologies in addressing improved nuclear safety, which in turn resulted in Action 12 of the IAEA Action Plan on Nuclear Safety,

(d) Noting the progress achieved in a number of Member States in the development of innovative nuclear energy systems technology and the high technical and economic potential of international collaboration in the development of such technology,

(e) Noting that the membership of the Agency's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), which was launched in 2000, continues to grow, reaching 37 Member States and the European Commission,

(f) Noting with satisfaction the establishment, in April 2012, of the structural unit INPRO Group in the Department of Nuclear Energy in response to previous calls on the Secretariat to strengthen the INPRO management structure,

(g) Noting that INPRO provides a forum for technology users and technology holders to study national, regional and global nuclear energy scenarios and has successfully completed a collaborative project on Global Architectures of Innovative Nuclear Energy Systems (GAINS), which developed a comprehensive set of analytical tools, assumptions and considerations (relating to power production, nuclear material resources, discharged fuel, radioactive waste and minor actinides, nuclear fuel cycle services, system safety, and costs and investment) and identified scenarios for transitioning to nuclear energy systems that preserve nuclear material, restrain the accumulation of used fuel and enhance proliferation resistance, highlighting the role of technical and institutional innovations and international cooperation in this respect,

(h) Noting also that the Agency fosters collaboration among interested Member States on selected innovative technologies and approaches to nuclear power through INPRO Collaborative Projects, Technical Working Groups (TWGs) working on facilitating innovations for advanced reactors and nuclear fuel cycle options, and Coordinated Research Projects, and acknowledging that the coordination of INPRO-related activities is achieved through the IAEA programme and budget and the INPRO Action Plan,

(i) Noting that the scope of INPRO includes activities and collaborative projects in areas such as national long-range nuclear energy strategies including Nuclear Energy System Assessments (NESAs), global nuclear energy scenarios including collaborative projects on Synergistic Nuclear Energy Regional Group Interaction Evaluated for Sustainability (SYNERGIES), innovations in nuclear technology and institutional arrangements, and the INPRO Dialogue Forum, including regional cooperation among countries for sustainable nuclear energy, which together provide an Agency programme of activities supporting interested Member States in long-range nuclear energy deployment strategic planning,

(j) Noting the progress of other national, bilateral and international activities and initiatives, including the International Framework for Nuclear Energy Cooperation (IFNEC) initiative, and their contribution to joint research and development work on innovative approaches to nuclear energy deployment and operation, and

(k) Noting with appreciation the Director General's report on Agency activities in the development of innovative nuclear technology contained in document GC (56)/INF/3,

1. Commends the Director General and the Secretariat for their work in response to the relevant General Conference resolutions, in particular the results achieved to date within INPRO;

2. Emphasizes the important role that the Agency can play in assisting interested Member States in building national long-term nuclear energy strategies and in long-term sustainable nuclear energy deployment decision-making through NESAs based on INPRO methodology and nuclear energy development modelling;

3. Encourages interested Member States, the Secretariat and, in particular, INPRO to develop and evaluate various nuclear energy scenarios and roadmaps for transitioning to sustainable nuclear energy systems, based on synergistic collaboration among involved countries, that lead to sustainable nuclear energy development in the 21st century, highlight the role of international cooperation and help to define collaborative pathways to such development;

4. Invites Member States, the Secretariat and, in particular, INPRO to bring into focus and examine the role that technological and institutional innovations can play in improving nuclear safety, security and non-proliferation;

5. Requests the Secretariat to promote the exchange of relevant technical information among interested Member States and to foster human resource training in innovative nuclear technologies;

6. Encourages the Secretariat to promote research in innovative technologies among interested Member States through international centres of excellence and international networks based on existing and newly developed research facilities;

7. Invites all interested Member States to join, under the aegis of the Agency, in the activities of INPRO in considering the issues of innovative nuclear energy systems as well as institutional and infrastructure innovations, in particular by continuing assessment studies of such energy systems and their role in national, regional and global scenarios for the further use of nuclear energy, as well as by identifying common issues for possible collaborative projects;

8. Encourages the Secretariat and interested Member States to jointly consider innovations in developing sustainable nuclear energy systems that could meet their energy needs and contribute to economic development, in a manner consistent with safety, security and non-proliferation commitments, and to cooperate in this area with other UN organizations;

9. Encourages the Secretariat and interested Member States to continue the revision of the INPRO methodology in the light of the Fukushima Daiichi accident and taking into account results of NESAs performed in Member States;

10. Calls upon the Secretariat and Member States in a position to do so to investigate, taking into account, inter alia, economic, safety and security factors, the availability of new, more proliferation-resistant reactor and fuel cycle technologies, including those needed for the recycling of spent fuel and its use in advanced reactors under appropriate controls and for the long-term disposition of remaining waste materials;

11. Recommends that the Secretariat continue to explore opportunities for synergy between Agency's activities (including INPRO) and those pursued under other international initiatives in areas related to international cooperation in peaceful uses of nuclear energy, safety, proliferation resistance and other security issues and, in particular, supports the collaboration of INPRO, appropriate TWGs and the Generation IV International Forum (GIF) on innovative and advanced nuclear energy systems;

12. Invites interested Member States that have not done so to consider joining INPRO and to contribute to innovative nuclear technology activities by providing scientific and technical

information, financial support, or technical and other relevant experts and by contributing to joint collaborative projects on innovative nuclear energy systems;

13. Recognizing that the funding of INPRO activities in the development of innovative nuclear technology comes partly from the Regular Budget and in large part from extrabudgetary resources, requests the Director General to strengthen the Agency's efforts related to the development of innovative nuclear technology by further enhancing the effective use of available resources in support of related activities of the TWGs and INPRO; and

14. 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 fifty-seventh (2013) regular session under an appropriate agenda item.

3.
Nuclear knowledge management

The General Conference,

(a) Recognizing that preserving and enhancing nuclear knowledge and ensuring the availability of qualified manpower are vital to all aspects of human activity related to the continued and expanded safe and secure utilization of all nuclear technologies for peaceful purposes,

(b) Recalling its previous resolutions on nuclear knowledge,

(c) Noting the important role which the Agency plays in assisting Member States in their preservation and enhancement of nuclear knowledge and in facilitating international collaboration on this,

(d) Aware of continuing concerns about a shortage of personnel trained in nuclear fields and about a possible erosion of the nuclear knowledge base,

(e) Recognizing that nuclear knowledge management involves education and training for succession planning and also the preservation or enhancement of existing knowledge in nuclear science and technology,

(f) Recognizing the importance of the use of state-of-the-art knowledge management technologies for promoting innovations and intellectual collaboration among Member States, and for identifying and supporting talent, and for providing basic knowledge about the safety principles of nuclear technologies,

(g) Recognizing the useful role of international coordination and cooperation in facilitating exchanges of information and experience and in implementing actions to help address common problems, and also in benefiting from opportunities relating to education and training and to nuclear knowledge preservation and enhancement,

(h) Emphasizing the increasing importance of the role of the Agency in providing information on and identifying good practices in the safe and efficient utilization of nuclear technology for peaceful purposes, including information for the general public,

(i) Noting the successful sessions of the Nuclear Energy Management School (NEMS) held at the International Centre for Theoretical Physics (ICTP), (Trieste, Italy, 2010 and 2011), in Abu Dhabi (United Arab Emirates, 2012) and in Tokai Mura, (Japan, 2012), the decision of the Nuclear Power Institute at Texas A&M University to host the NEMS in 2013 and the strong interest of other Member States in hosting the NEMS in the following years,

(j) Noting also the successful installation of an e-learning internet platform in the United Arab Emirates, the Republic of Korea, Ghana and Argentina to support regional efforts in introducing modern information and communications (IC) technology for nuclear education and training, and

(k) Noting further the successful 'internet reactor laboratory' - an Agency technical cooperation project through which students in Jordan used a research reactor in the United States of America to conduct reactor experiments through a web-based remote link,

1. Commends the Director General and the Secretariat on the significant interdepartmental efforts in addressing issues of nuclear knowledge preservation and enhancement in response to relevant General Conference resolutions, as described in document GC(56)/7;

2. Commends the Secretariat on developing and applying comprehensive methodology and guidance for managing nuclear knowledge, including through nuclear knowledge management assistance visits and seminars in Member States;

3. Encourages the Director General and the Secretariat to continue to strengthen their current and planned efforts in this area, in a holistic, interdepartmental manner, while consulting and engaging with Member States and other relevant international organizations, and to further increase the level of awareness of efforts in managing nuclear knowledge, and in particular;

i. Requests the Secretariat to assist Member States, at their request, in their efforts to ensure the sustainability of nuclear education and training in all areas of the peaceful use of nuclear energy, including its regulation, inter alia by taking advantage of the activities of the regional networks in Asia (ANENT), Latin America (LANENT) and Africa (AFRA-NEST),

ii. Notes in particular the needs of developing countries or those considering or launching a nuclear power programme and in this regard, encourages Member States in a position to do so to participate in and support networking, and underlines the importance of the technical cooperation programme in that context,

iii. Requests the Secretariat, within the Action Plan on Nuclear Safety and in consultation with Member States, to further develop and disseminate guidance and methodologies for planning, designing and implementing nuclear knowledge management programmes, including programmes for sustaining knowledge, education and training for promoting strong nuclear safety culture,

iv. Requests the Secretariat to continue to make available to Member States nuclear information and knowledge resources and best practices relating to the peaceful use of nuclear energy, including its operation and regulation, through the Nuclear Energy Management School, the World Nuclear University and other appropriate institutions,

v. Requests the Secretariat to further develop and utilize e-learning technologies and methods to make nuclear knowledge more broadly available in a modern, effective and efficient manner, and

vi. Encourages the Secretariat to promote the use of state-of-the-art knowledge management technologies and support interested Member States in their further development;

4. Calls on the Secretariat, in particular, to continue to focus on activities aimed at helping interested Member States to assess their human resource needs and identify ways to address those

needs, inter alia by encouraging the development of new tools and opportunities to gain practical experience through fellowships;

5. Invites the Secretariat, in coordination with Member States, as appropriate, to continue its efforts in the dissemination of scientific, technical and regulatory information concerning the peaceful use of nuclear energy to the public in a transparent and objective manner;

6. Requests the Director General to take into account the continuing high level of interest of Member States in the range of issues associated with nuclear knowledge management when preparing and carrying out the Agency's programme; and

7. Requests the Director General to report on progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fifty-eight (2014) session under an appropriate agenda item.