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Advice and Support to Member Countries in Responding to Nuclear Emergencies and in Developing Follow-Up Remediation Strategies in Food, Agriculture, Forestry and Fisheries

I. Introduction

1. Radiological and nuclear accidents can lead to substantial releases of radionuclides that can have significant long-term environmental consequences. Experience gained from severe radiological accidents demonstrates that food, agriculture, forestry and fisheries represent the most vulnerable sectors with high risks of being affected by radioactive contamination.
2. Emergency preparedness and response are key elements in mitigating the consequences of nuclear and radiological accidents. *Emergency preparedness* is the *capability* to take actions that will effectively mitigate the consequences of an emergency, while *emergency response* is the *performance of actions* to mitigate the consequences of an emergency.¹ Therefore, emergency preparedness is a key requirement for enhancing and facilitating emergency response.
3. Legal instruments for international emergency preparedness and response were adopted over 25 years ago.² Hence, while international organization mechanisms³ regulating nuclear and radiological emergency response as well as national capabilities to respond to such emergencies are in place in many countries, they inevitably reflect the concerns prevailing at the time and therefore, should be revised in light of recent events. Possible ways to strengthen these instruments should be considered.
4. The accident at the Fukushima Daiichi NPP in March 2011, for instance, led to a global rethink on nuclear energy and safety issues. While acknowledging that each State has the right to define its national energy policy, the common UN objective is to deepen the understanding of the

¹ See the IAEA Safety Glossary for complete definitions. IAEA Safety Glossary, International Atomic Energy Agency, Vienna, Austria, ISBN 92-0-100707-8.

² The Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. FAO acceded to these conventions in October 1990.

³ The FAO co-sponsored Joint Radiation Emergency Management Plan of the International Organizations (EPR- JPLAN 2010).

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entire range of issues relating to the development of nuclear energy and its safety transcending national borders⁴.

5. FAO works in partnership with the International Atomic Energy Agency (IAEA) and other UN Agencies through the Joint FAO/IAEA Division on Nuclear Techniques in Food and Agriculture (Vienna) in preparing for and responding to nuclear or radiological emergencies affecting food, agriculture, forestry and fisheries. This includes the application of FAO capabilities as a critical counterpart in defining and implementing agricultural countermeasures and remediation strategies in response to such emergencies. These responsibilities are undertaken within the context of the FAO-cosponsored Joint Radiation Emergency Management Plan of the International Organizations.

6. In light of the Fukushima experience, FAO organized two Technical Meetings on preparedness and response to nuclear and radiological emergencies (Vienna, 30-31 May 2011; Rome, 14-18 November 2011). These meetings provided recommendations related to emergency preparedness and response, including countermeasures and remediation, and the strengthening of assistance to FAO member countries. They serve as a basis for the approach and basic steps presented below.

II. The approach

7. To broaden FAO's role in preparedness and response to a radiological emergency to enable it to conduct analyses of emergency conditions pertaining to food, agriculture, forestry and fisheries. These analyses would include an examination of possible emergency scenarios, their consequences, and the associated radiological impacts and response actions, for dissemination to member countries.

8. To enhance mechanisms for responding to and managing the consequences of nuclear accidents in food, agriculture, forestry and fisheries both within and between countries. To improve legal instruments for emergency preparedness and response frameworks, including revisions to the bilateral Cooperative Arrangements between FAO and IAEA for information exchange and technical support in the case of a nuclear or radiological emergency.

9. To improve public information on emergency response to events affecting food, agriculture, forestry and fisheries, remediation strategies and other food and agriculture related issues. This will help to avoid unnecessary misunderstandings and fear among the general population and help to build trust in the global agricultural market.

III. Basic steps to improve emergency preparedness and response in food, agriculture, forestry and fisheries

10. Assist member countries in the development of appropriate contingency planning and capacity building in preparedness and response to nuclear and radiological emergencies affecting food, agriculture, fisheries and forestry.

11. Encourage the development, assessment and verification of baseline data on management practices and the mapping of key environmental and socioeconomic data relevant for the emergency response.

12. Encourage and assist member countries in the development of different scenarios to identify and quantify major pathways of contamination throughout the food chain, including the consideration of basic food production systems around the world.

13. Organize training and emergency response exercises, considering them as a key components of good emergency preparedness programmes and as powerful tools for verifying and improving the quality of emergency arrangements and capabilities.

⁴ Statement from the speech by the UN General Secretary Ban Ki-moon and the International Conference Twenty-five Years after Chernobyl Accident. Safety for the Future, Kiev, 20-22 April 2011.

14. Support the review, updating and/or development of national and international expert rosters to be used in case of radiological emergencies and support the involvement of national experts in international emergency preparedness and response exercises. Encourage member countries to enhance such training programmes.
15. Develop emergency and remediation guidelines for different end-users (e.g. policy makers, farmers, forestry workers, fishers) to restore safe and sustainable production in the areas affected by emergencies, taking into account the optimization of different countermeasure or remediation strategies and the alternative use or disposal of affected commodities.
16. Support, revise and coordinate the further development of management options for food, agriculture, forestry and aquatic resources and commodities in cases of radiological emergencies, taking into account also diverse climatic zones and production systems.
17. Support development of decision aiding technologies for justification of countermeasure and remediation strategies, considering a diversity of aspects (radiological, economic, social, cultural, etc.) to be taken into account in the case of a radiological emergency.
18. Identify research required to address knowledge gaps on critical factors directly affecting food safety and the success of agricultural, forestry and aquatic management options for affected areas.
19. Integrate gender analysis in the emergency needs assessment to understand who has been affected by the emergency and what the specific needs, vulnerabilities and capacities of men and women of different age and groups are, in order to design gender-responsive interventions.