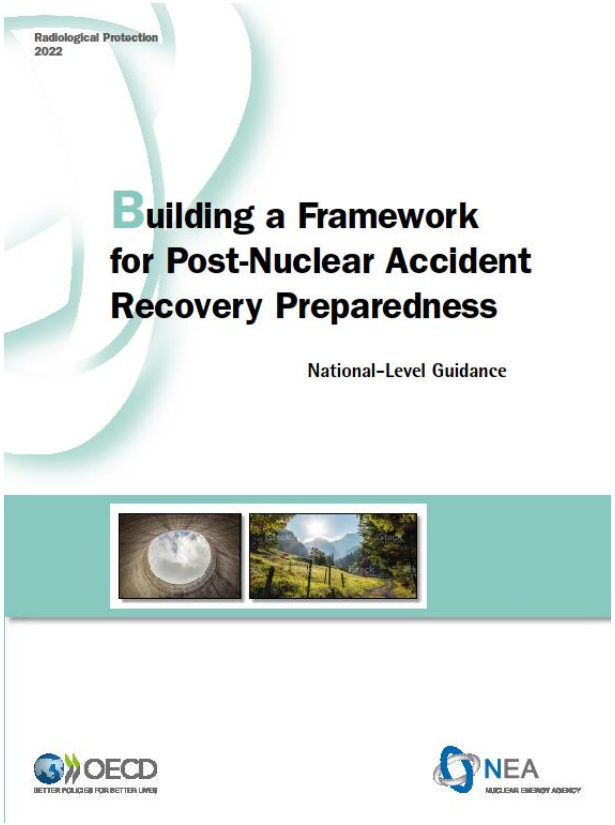

NEA Workshop on Preparedness for Post-Nuclear Accident Recovery

Developing a recovery framework

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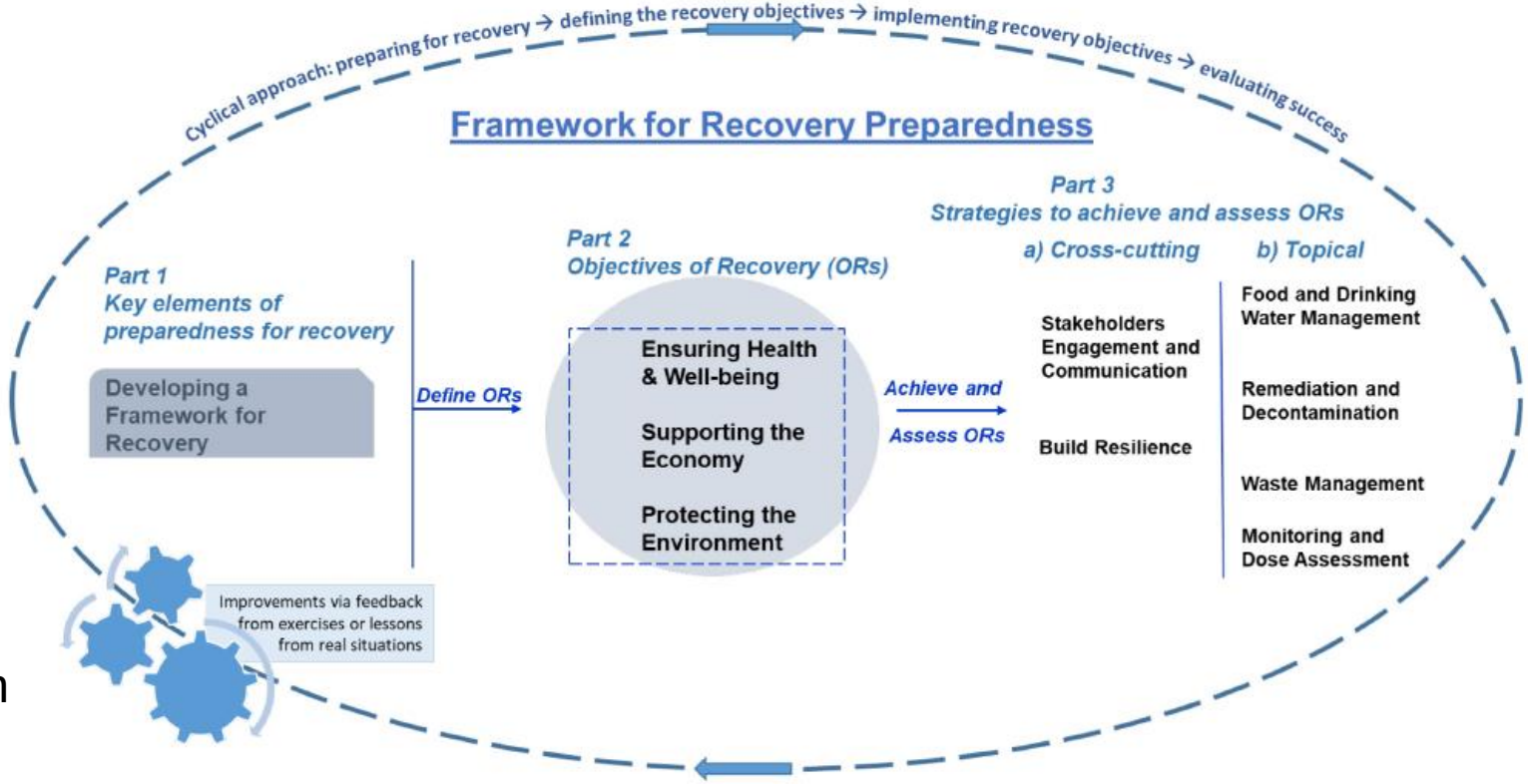
Contents

- Steps and key considerations in developing a recovery framework
- Objectives of recovery
- Actions to achieve recovery objectives
- Main recommendations

The EGRM Recovery Framework

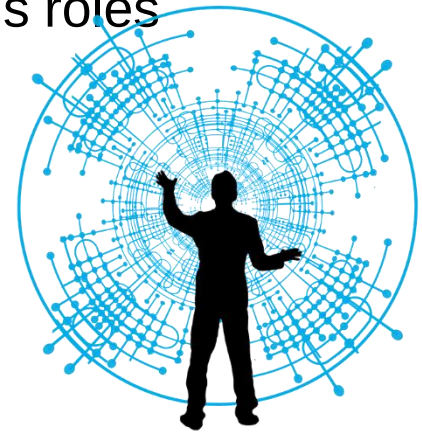
Policies, procedures, principles, objectives, strategies and tools for the purpose of managing the process of recovery from an emergency



Developing a Recovery Framework

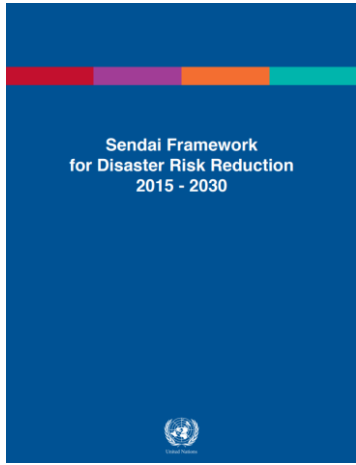
Steps

- Identify and agree with stakeholders the overall objectives of recovery
- Both radiological and non-radiological aspects must be considered
- Discuss and agree the tools that can be used to achieve the objectives of recovery
- The roles and responsibilities
- Governance of and coordination between these various roles
- Engagement of civil society
- Legal requirements
- International transboundary harmonisation
- Ethical issues



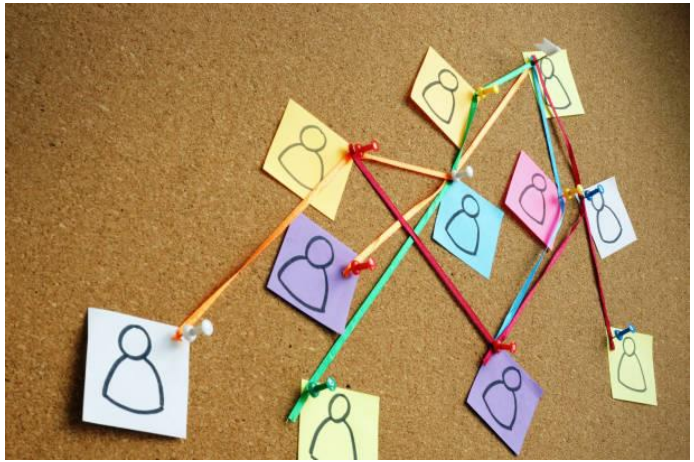
Developing a Recovery Framework

- **All-Hazards Approach**
  - Make use of common frameworks
  - Help to build resilience
  - Enhance clarity of roles and governance
  - Ensure a more efficient use of resources – avoid duplication
- **Sendai Framework for Disaster Risk Reduction 2015-2030**
  - Understanding risk
  - Improving risk governance
  - Building resilience
  - Enhancing disaster preparedness
- **Planning for recovery should be**
  - Risk-based
  - Proportionate
  - Flexible, scalable and nonprescriptive



Roles, Responsibilities and Co-ordination

- Smooth transition between the emergency exposure situation and the existing exposure situation
- Roles and responsibilities, co-ordination and governance arrangements
- Human, financial and other resources
- Decision-making
- Co-expertise process



Legal Requirements

- Legal framework should not give rise to barriers
- Legislation needs to be considered in advance
- Guidance for drafting legislation in an emergency
- Flexibility

Transboundary Harmonisation

- More than one country affected
- Harmonisation of recovery actions across borders
- Bilateral and international agreements
- Co-ordination mechanisms between neighbouring states during recovery
- Particularly important for communities living close to borders

Ethical Principles

Four core ethical values based on ICRP Publication 138 (ICRP, 2018)

- **Beneficence/non-maleficence:** radiological aspects should be weighed against the impacts in other areas such as public health, society, the economy, and the environment.
- **Prudence:** a long-term review of the potential health and environmental effects for the population and territories affected.
- **Justice:** Ensure that the proposed framework treats all affected territories in an equitable manner with a fairly-balanced allocation of resources.
- **Dignity/autonomy:** Preserve the autonomy of decision-making and ensure the availability of resources to preserve this autonomy

Values

- **Stakeholder involvement:** Ensure a fair process and participation of all relevant stakeholders.

- **Transparency:** Ensure that the process for the development of the framework is well described and information is easily accessible.

- **Accountability:** Include an evaluation procedure to assess the robustness of the process itself and to provide regular feedback on the development of the process.

Objectives of Recovery

Ensuring Health and Well-being

Impact of a nuclear accident can have considerable effects on the health and psychosocial well-being of affected people

- Radiation exposure may be significant and health impacts may extend beyond the short term
- Balance direct radiation-related health risks against the indirect consequences of protective actions
- Training and education
- Engagement, communications, respect, dignity
- Health surveillance and monitoring of affected populations
- Establish indicators for well-being

Supporting the Economy

Nuclear accidents will greatly impact economic activities in an affected territory over the short and long term

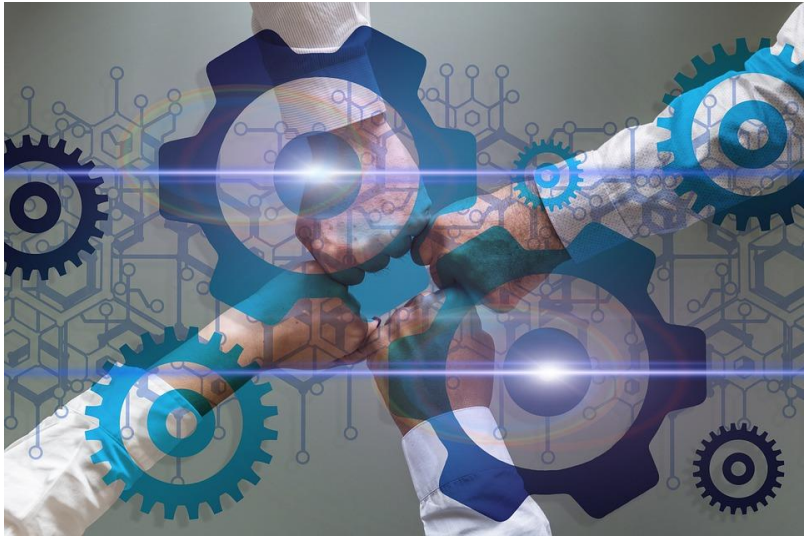
- Cooperation between different stakeholders (private business owners, radiological protection experts, national and local regulators, local populations)
- Prevent image loss, stigmatisation and discrimination and increase attractiveness
- Avoid trade barriers – monitoring is key
- Compensation
- Maintain vigilance for radiological issues while supporting the restart of economic activity

Protecting the Environment

There is an increasing awareness of the importance of the overall quality of environmental resources and biodiversity

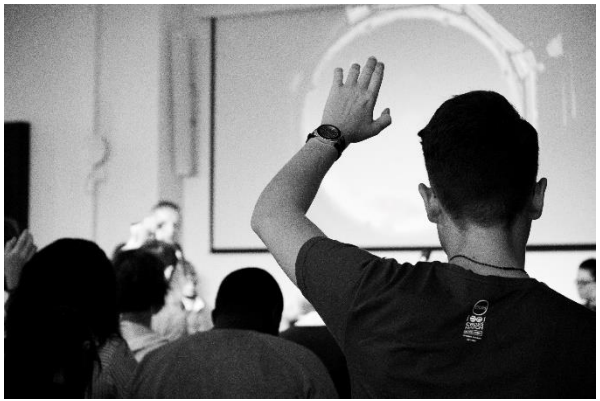
- Environment should be considered as an integral element of the optimisation process when deciding on the protection strategy
- Agree environmental protection goals with stakeholders
- Protect endangered species and species that may be threatened by chronic radiation exposure
- Requirements for dealing with contaminated areas

Strategies to Achieve and Assess Recovery Objectives



Stakeholder Engagement and Communications

- Cross-cutting issue
- Identify stakeholders and include them in the decision-making and planning process
- Two-way process
- ‘Co-expertise process’ (ICRP 146)
- Consideration for vulnerable populations
- Effective risk communication
- Communication channels e.g.
  - Call centres
  - Online forums
  - Local meetings



Building Resilience

Resilience is the ability to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner

- Engagement, partnership, ‘co-expertise’
- Evaluate the current national capacity and capability to respond
- Adopt an all-hazards approach
- Exercising
- Education and training
- Maintain vigilance to build trust and resilience

Food and Drinking Water Management

Safety of food and drinking water is a major concern for affected people

Goals: (1) ensure the quality of products, (2) maintain consumer confidence and (3) ensure the economic sustainability of the affected areas

- Develop radiological criteria
- Produce an outline monitoring strategy
- Collect and collate information on applicable protective actions
- Develop a mechanism for engaging with stakeholders and the local community.

Remediation and Decontamination

- Remediation is the process of reducing radiation exposure from contamination through remedial actions to remove the contamination itself (decontamination) or to affect the exposure pathways
  - Decisions on remediation must be underpinned by the principles of justification and optimisation
  - Risk-based, proportionate, flexible, scalable, open to lessons from previous events, inclusive and co-ordinated
  - Identify infrastructure and service requirements
  - Establish a process to accomplish remediation
  - Data and information collection

Radioactive Waste Management

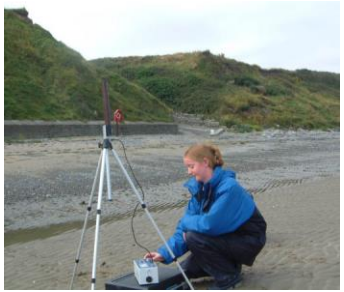
Nuclear and radiological accidents have the potential to generate large volumes of radioactive waste

- Waste generation as a result of remedial and protective actions
- Distinction between waste management during routine operations and emergency scenarios
- Proportionate approach to waste management preparedness
- Segregation of waste – radiological criteria
- Characterisation, staging, transport, and temporary/interim storage
- Define endpoints

Environmental Monitoring, Dose Assessment

A comprehensive environmental monitoring programme will confirm details about the radioactive contamination, its spatial distribution, its nuclide composition, physical and chemical properties, heterogeneity, and mobility of contamination

- Monitoring and dose assessment programmes
- Clearly defined objectives
- Plan for how measurements will be used
- Responsibility for collecting and assessing data
- Presenting and sharing data
- Self-help actions



National-level recommendations (examples)

EGRM recommendations include:

i. Adopt an all-hazards approach and clarify governance roles;

ii. Establish indicators of well-being with relevant stakeholders;

iii. Identify ways to support the economy in affected regions/commodities by addressing the potential loss of image, taking into account the long-term management of the radiological situation;

iv. Develop a monitoring programme with clear objectives to support dose assessment;

v. Embed specific post-accident recovery arrangements for the protection of the environment within national policy, strategy and legislation;

vi. Develop recovery risk communication;

vii. Develop a programme of exercises to test planning arrangements for recovery management and to build and reinforce resilience;

viii. Plan for long-term protective actions to reduce or maintain activity concentrations in food products and drinking water below established levels;

ix. Develop a holistic strategy for remediation and decontamination; and

x. Adopt a proportionate approach to waste management preparedness.

EGRM Team

NEA Workshop on Preparedness for Post-Accident Recovery: Lessons from experience (Feb 2020)
Workshop:https://www.oecd-nea.org/jcms/pl_40194/

Presentations https://www.oecd-nea.org/download/wpnem/Tokyo2020JointWorkshop/

Summary Report https://www.oecd-nea.org/jcms/pl_58249/

Summary Report (Japanese version) https://www.oecd-nea.org/jcms/pl_60474/

Thank you for your attention

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