



**ENVIRONET**  
**Network on Environmental Management and Remediation**

**Terms of Reference**

**1. Background**

Radiologically contaminated sites continue to exist all over the world. They were originated by past activities that were never subject to regulatory control or that were regulated, but not in accordance with prevailing international standards including those formulated by the IAEA. Contaminated sites may have also resulted from nuclear and/or radiological accidents. These sites can lead to the exposure of members of the public to ionizing radiation resulting in negative health effects in the exposed population.

Over the past decade, a number of remediation methods have been developed worldwide to deal with the environmental clean-up of radiologically contaminated sites. These techniques apply to different types of pollution over different environmental compartments, including soils, sediments, groundwater, surface water, and air (e.g., radon). They vary in terms of sophistication and cost and must be selected on a case-by-case basis. However, planning is an essential component of the overall business and all the steps need to be articulated in a reasonable way to avoid wasting time and resources. Quite often, the implementation of environmental remediation programs may be hindered by constrained human and financial resources and scarce expertise in environmental remediation.

Experience has shown that with appropriate planning and assistance remedial actions are more likely to be implemented. As such, the interaction between inexperienced and experienced countries facilitated by the IAEA may lead to better conditions for real implementation of projects and lessons learned. This relationship may inspire countries to reproduce (after necessary adaptation to local conditions and constraints) the experience gained by others.

**2. Goals and Objectives**

The IAEA believes its Member States should eventually have in place proper infrastructure and technologies for managing their radioactive legacies and should resolve all related issues in a timely, safe and cost-effective manner. The goal of the ENVIRONET is to build capacity in the different

Member States and to facilitate the full implementation of remediation projects. To meet this goal, the ENVIRONET will produce a variety of products and services aimed at promoting and increasing the exchange of information and experiences amongst its participants.

Specific objectives include:

- 1) Coordinate support to organizations or Member States by making available the relevant skills, knowledge, managerial approaches and expertise related to overcoming constraints to environmental management and remediation;
- 2) Offer a broad and diversified range of training and demonstration activities with a regional or thematic focus providing hands-on, user-oriented experience and disseminating proven technologies and methodological approaches;
- 3) Facilitate sharing and exchange of knowledge and experience amongst organizations with advanced environmental management and remediation programmes, in pursuit of good practices, identifying and treating improper past operations and assuring the longer-term knowledge management in support of public and environmental protection and site monitoring; and
- 4) Create a forum in which advice and technical guidance may be provided.

### **3. Scope and Target Audience**

In addition to dealing with existing contaminated sites (i.e., legacy sites), the scope of the ENVIRONET encompasses promotion of sound environmental management practices to be implemented by current and planned future operations. This is aimed at preventing the occurrence of future radiological environmental contamination (and related hazards), and consequently avoiding the need for extensive and costly environmental remediation programs. As such, the ENVIRONET is aimed at promoting the adoption of good practices in environmental management and remediation in general.

The scope of the ENVIRONET includes:

- 1) Life-Cycle Management of current and future operations, including
  - a) Nuclear Fuel Cycle facilities, including cleanup during decommissioning
  - b) U mines and processing facilities
  - c) NORM-generating facilities
  - d) Radiological facilities
- 2) Legacy Sites, including:
  - a) Former U mining and processing sites
  - b) Former NORM-generating facilities or sites
  - c) Former nuclear industry sites and former military sites
  - d) Orphan radiological sites

- 3) Other environmentally contaminated sites, including areas contaminated by nuclear and radiological accidents/incidents

The following situations are not in the scope of the ENVIRONET:

- 1) Emergency response actions
- 2) Dismantling of buildings and other physical structures (e.g., hot cells, reactors) (These issues are the focus of the International Decommissioning Network [IDN] and, thus, are not a primary focus of the ENVIRONET.)
- 3) Operational radioactive waste storage and disposal activities/facilities (These issues are the focus of the International Low-Level Waste Disposal Network [DISPONET]. However, the ENVIRONET does address environmental remediation of legacy waste sites.)

The target audience of the ENVIRONET is broad and includes:

- 1) Problem holders
- 2) Regulators
- 3) Scientific research institutions
- 4) Contractors
- 5) Non-governmental organizations
- 6) Members of the general public
- 7) Academics
- 8) Students
- 9) Trainers
- 10) The IAEA and other international organisations involved in management or environmental remediation of radioactive facilities

#### **4. Topics**

The ENVIRONET will cover different topics of Environmental Remediation. These topics include, but are not limited to, the following:

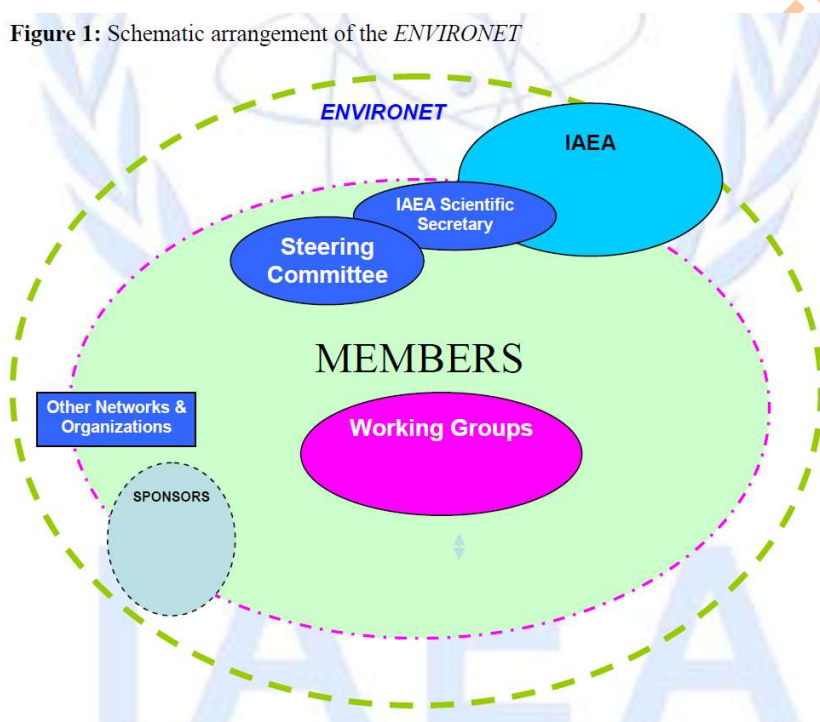
- 1) Life-cycle planning of both facility operations and environmental remediation
- 2) Strategic planning
- 3) Cleanup criteria development
- 4) Project design, planning, implementation, and management
- 5) Data management, integration, and communication
- 6) Site characterization
- 7) Modelling:
  - (a) Contaminant fate and transport
  - (b) Engineering design
  - (c) Economic issues, optimization
- 8) Radiological exposure analysis and risk assessment
- 9) Environmental impact assessment

- 10) Remediation approaches and technologies
- 11) Monitoring/measurement technologies and approaches
- 12) Stakeholder involvement and communication
- 13) Regulation and policy development
- 14) Risk communication
- 15) Stewardship or institutional control
- 16) Funding
- 17) Infrastructure development
- 18) Knowledge management

## 5. Organization/Structure

The proposed ENVIRONET structure involves (depicted in Figure 1):

**Figure 1:** Schematic arrangement of the *ENVIRONET*



**IAEA Scientific Secretary:** The IAEA Scientific Secretary will solicit and facilitate participation of ENVIRONET Members, establish and coordinate support from the ENVIRONET Steering Committee, pursue appropriate links to other networks and organizations, develop relationships with potential sponsor agencies (e.g., international organizations, individual government agencies), and solicit funds.

**Members:** Organizations/individuals that join the ENVIRONET to share and/or receive experience and knowledge on environmental remediation topics, including those listed in Section 4. Members

can join the network by request to the Scientific Secretary, or they may be recruited by the Scientific Secretary.

**Steering Committee:** A group of ENVIRONET Members that provides advice to the IAEA and provides oversight/direction of ENVIRONET activities, including support to working groups. It is comprised of Members whose backgrounds combine expertise and perspective across a broad spectrum of ENVIRONET topics and geographic regions and may include Working Group (WG) Coordinators/Project Managers, Regional Coordinators, and other ENVIRONET Members. The Steering Committee develops the “Statute” or Guidelines of the network along with the Strategic and Operations Plan. Elements like Outline Program, Success Indicators, Evaluation Process, etc. are also to be elaborated.

The Steering Committee will be led by a Chair and Co-Chair to be selected by the IAEA Scientific Secretaries based on recommendations of the Steering Committee as a whole. The Chair and Co-Chair will be responsible for interacting with the IAEA Scientific Secretaries to help strategize and plan for ENVIRONET activities, coordinate support from the full Steering Committee, plan for and facilitate ENVIRONET meetings, and maintain a record of Steering Committee activities (e.g., meeting notes and reports). Other Steering Committee members may be recruited to assist the Chair and Co-Chair on an ad hoc basis (e.g., developing meeting minutes, chairing meeting sessions, organizing conference calls, etc.). The Chair and Co-Chair will be appointed for three-year terms during the Steering Committee meeting held in conjunction with the annual ENVIRONET Plenary meeting. Individuals may serve as Chair or Co-chair for more than a single term, if deemed appropriate by the IAEA Scientific Secretaries and Steering Committee. In order to promote continuity, the Co-Chair may ascend to the Chair position once the Chair steps down.

**Special Advisors:** ENVIRONET Members that serve as advisors to the IAEA Scientific Secretaries and Steering Committee providing input on the scope, objectives, and operations of the ENVIRONET and, when appropriate, serving to endorse or promote specific activities or the network as a whole.

**Sponsors/Funding Agencies:** Organizations that will work with the IAEA to provide either financial or technical support to ENVIRONET activities (also could sit on Steering Committee, work with Regional Coordinators, and/or participate as Members).

**Working Groups/Projects:** Subsets of the ENVIRONET Members organized around a common topic; coordinated and managed by a specific individual with relevant expertise. Regional Working Groups (RWGs) will address specific needs and interests of countries within a region. See Attachment 1 for further elaboration of the RWG objectives.

**Working Group Coordinators** (may also sit on Steering Committee): Individuals with experience and knowledge on the specific WG topic, along with general knowledge of other ENVIRONET topics; responsible for coordinating activities to ensure sharing of expertise and knowledge on the specific WG topic in coordination with Regional Coordinators, as appropriate.

**Regional Coordinators** (may also sit on Steering Committee): Individuals that can represent the needs and interests of countries within a specific region and impart this information to the Steering Committee and WG Coordinators; work with WG Coordinators to support coordination of regional events (workshops, training courses, conferences, etc.); and also represent and promote ENVIRONET to organizations within their region. See Attachment 1 for further elaboration of the Regional Coordinators' roles and responsibilities.

## 6. Working Groups and Projects

As noted in Section 5, ENVIRONET may organize working groups or projects around specific topics of interest to the ENVIRONET community. Working groups/projects will be created on the basis of needs identified by ENVIRONET Members. They may exist for as long as needed to address related issues, typically for a period of 2-3 years or longer.

Individuals within the ENVIRONET community, possibly including one or more Steering Committee members, will take the lead in drafting a Terms of Reference (ToRs) for a new working group or project. The ToR shall identify the scope and objectives for the working group/project, intended outcomes and deliverables, and a preliminary schedule. Draft ToRs will be reviewed by the Steering Committee to ensure the working group/project topic is within the scope and objectives of ENVIRONET and specific recommendations will be made to the IAEA Scientific Secretary. Approval of the formation of a new working group or project will be obtained from the ENVIRONET Members participating in the annual Plenary meeting.

Potential topics for Working Groups or Projects include, but are not limited to the following:

- Life-cycle planning, project planning, data management, and funding
- Site characterization and monitoring
- Modelling and risk assessment
- Remediation approaches and technologies
- Stakeholder involvement and risk communication
- Regulation and policy development
- Stewardship or institutional control
- Remediation of Legacy Trench Sites (Le Trench)
- Definition of Remediation End States (DERES)
- Management of Naturally Occurring Radioactive Materials (NORM) Residues and Wastes

## 7. Services and Products

The services and products of the ENVIRONET may include, but are not limited to, the following:

### Services

- 1) Websites, primarily including the Connect platform, providing document repository (educational materials); discussion forum; member directory (online profiles); schedule of events; email subscriptions and updates; a Wiki-style reference database (case studies)
- 2) Workshops
- 3) Conferences
- 4) Training sessions
- 5) Long-distance, Internet-based training, or “e-learning”
- 6) Fellowships/internships
- 7) Peer review
- 8) Databases
- 9) Facilitation of collaborations among Member States (e.g., via the RWGs)

#### **Products**

- 1) Proceedings
- 2) Publications
- 3) Training materials
- 4) Case studies
- 5) Annual report (prepared by the Steering Committee)
- 6) Newsletter

#### **Annual Meeting**

One of the main focal points for the network is an annual meeting which takes place around the end of each year in Vienna. This meeting includes IAEA personnel, Steering Committee members and various representatives from the Member States. Its primary aim is to facilitate the sharing of experiences and information in addition to promoting new network initiatives. The annual meeting provides important face-to-face engagement to ensure (1) progress on and continuity across ENVIRONET initiatives, (2) identification of emerging issues and needs facing Member States, (3) dissemination of technical knowledge and expertise, (4) engagement of key ENVIRONET contributors, and (5) recruitment of new network participants.

## Attachment 1

### Regional Working Groups and Regional Coordinators

#### Background

Regional Working Groups (RWGs) have been established to enhance collaboration among Member States within each region and to create/maximize opportunities to identify and address ER challenges that may exist for multiple Member States within a region. The expectation is that RWGs will extend the reach and impact of ENVIRONET by organizing initiatives at a more localized level and providing for more continuous engagement throughout the calendar year.

To organize and facilitate RWGs, Regional Coordinators have been recruited. These individuals will act as the focal point in their geographical region in order to provide coordination of the networks activities.

#### Goals and Objectives

It is hoped that the Regional Coordinators will facilitate greater connectivity and sharing of experience between Member States and the project leadership. The experiences shared will then be communicated back to the ENVIRONET Steering Committee. Communication is clearly a two way process and output from ENVIRONET projects and Working Groups will also be disseminated back out through the Regional Coordinators.

There are a number of potential benefits of establishing RWGs within the ENVIRONET network, including:

- Regions are in similar time zones, making communications and web-based meetings easier to organize.
- Countries often share borders or are in close proximity, are connected through maritime zones, therefore having a common interest in regional impacts.
- Regional countries trade together.
- There are often significant intra-regional lines of communication and regional organization.
- It is effective to have countries in a region working together on common goals.
- Logistically it is possible to pool resources between countries that are in closer geographical proximity.
- Member States within a region may have similar types of nuclear and radiological activities and environmental remediation challenges.
- Member States within a region may have similar cultures and common languages.
- The Regional Coordinators will be able to provide information about ENVIRONET activities to individuals who are unable to travel to meetings.

It is envisaged that the geographical regions will be;



- Europe & Central Asia.
- Latin America and the Caribbean.
- Africa.
- Asia and the Pacific.

Mode of Operation

The scope for the Regional Coordinators can be summarised as follows;

- Serve as a focal point for ENVIRONET in the region.
  - Maintain a contacts list of ENVIRONET members in the region.
  - Organise webinars (utilising the IAEA's webinar platform or through other mechanisms).
  - Promote ENVIRONET within the region.
  - Disseminate requests, information and learning back to the ENVIRONET Steering Committee.
- Expand affiliation of ENVIRONET and promote the network's activities in the region.
- Connect with country representatives to capture specific needs that will subsequently be presented at the annual Plenary meeting.
- Participate in conference calls of the Steering Committee and communicate the main discussions to regional members.
- Participate in the ENVIRONET Steering Committee and Plenary meetings.
- The Regional Coordinators will be supported in their duties by the IAEA Scientific Secretaries and the ENVIRONET Steering Committee.