



Association for Multinational  
Radioactive Waste Solutions

# The ERDO Roadmap

September 2021



# Dual-track policy requires some additional activities to supplement the national RWM and DGR programme

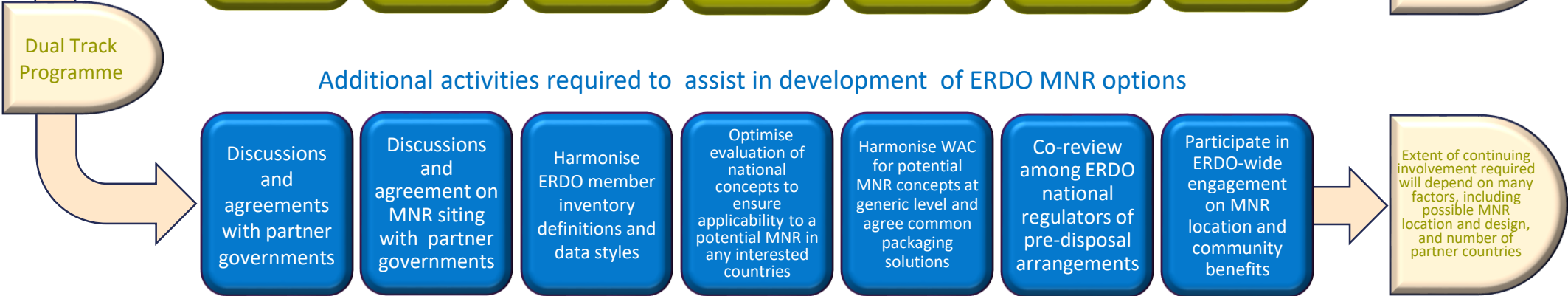
....these do not require major extra resources ... but they do need a plan



## Early activities required to progress national DGR programme



## Additional activities required to assist in development of ERDO MNR options





## ERDO member countries have adopted different positions on how they will manage the dual track approach

- National programmes that do not currently exclude the option of hosting
- National programmes that are undecided as to whether they could be willing to host an MNR
- National programmes that are interested in being part of a shared MNR project but have already decided that they do not want to be the host country

*...national policy can evolve and change from any of these starting positions*

*The Roadmap helps to frame activities and interactions along routes from each of these starting points*

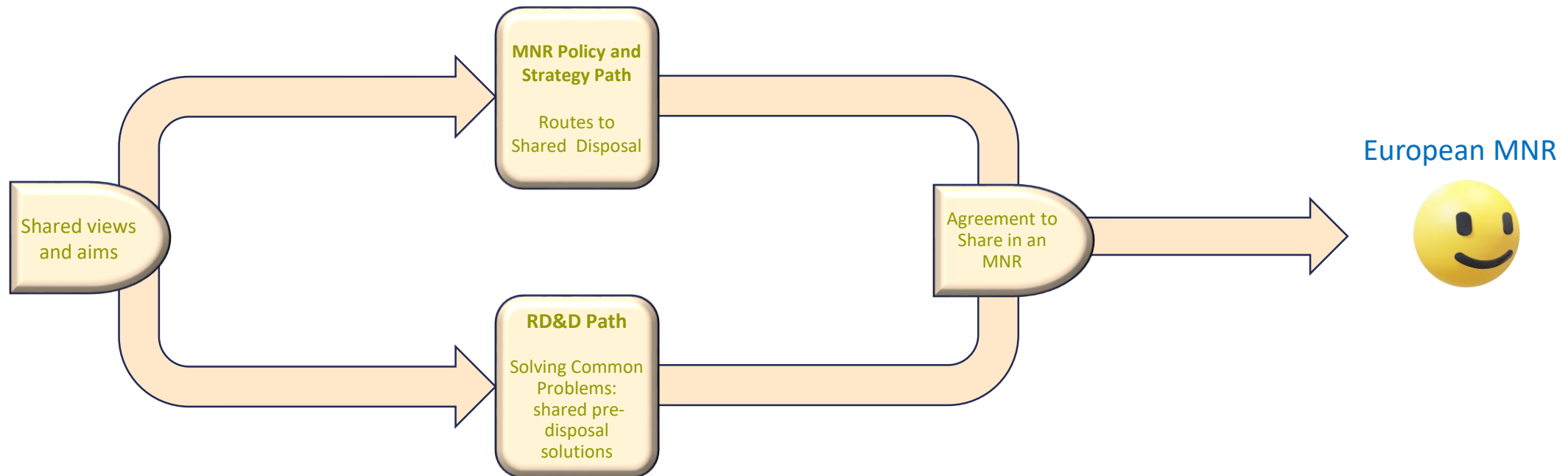
# The ERDO Roadmap: Steps to Sharing

An evolving framework to guide and manage our developing programme of work

- Why a roadmap?
  - to provide the common basis for internal and external discussions
  - to answer questions by showing that there are credible routes to eventual shared disposal solutions
  - to show that there are alternative pathways to disposal, and different possible starting points
  - to illustrate how the dual-track approach meshes activities within a national programme with activities in emerging MNR solutions
- Who is it for?
  - ERDO members and potential members in Europe
  - as an information source for external commentators on RWM options
  - as a model for other regional initiatives around the world

# Roadmap Structure

## the twin pathways concept



Output also supports the  
national GDF programme in a  
dual-track approach

# The RD&D Pathway: solving common problems

**Concept:** there are similar issues facing smaller-inventory programmes where a common approach would improve efficiency and effectiveness as well as facilitating adoption of shared disposal solutions, e.g.:

- harmonised WAC for similar facilities
- harmonised approach to nature and level of waste characterisation
- generic, transferable disposal concepts that could be applied widely without need for adaptation (e.g. a design concept for deep borehole disposal)
- demonstrators of novel disposal concepts
- common conditioning and packaging technologies and standards

**Output:** common standardised packaging and characterisation would meet common disposability requirements for a shared MNR

# Two current ERDO RD&D Projects

**LWC Project:** Legacy Waste Characterization for streamlined disposability:

- Surveying main Legacy Waste streams in the partner countries: looking for similarities and possible shared solutions and knowledge sharing.
- Identifying minimum set of WAC for legacy VLLW-LLW or ILW packages for envisaging possible re-treatment/reconditioning processes and disposability to a national DGR or MNR
- Evaluating possible methodologies for quantitatively deriving missing characterization data for Legacy Waste streams

**Deep Borehole Disposal Project:** to describe one or more specific borehole disposal concepts, based on available (drilling) technology and the anticipated waste inventory of participating nations

# The Policy & Strategy Pathway

## Actions

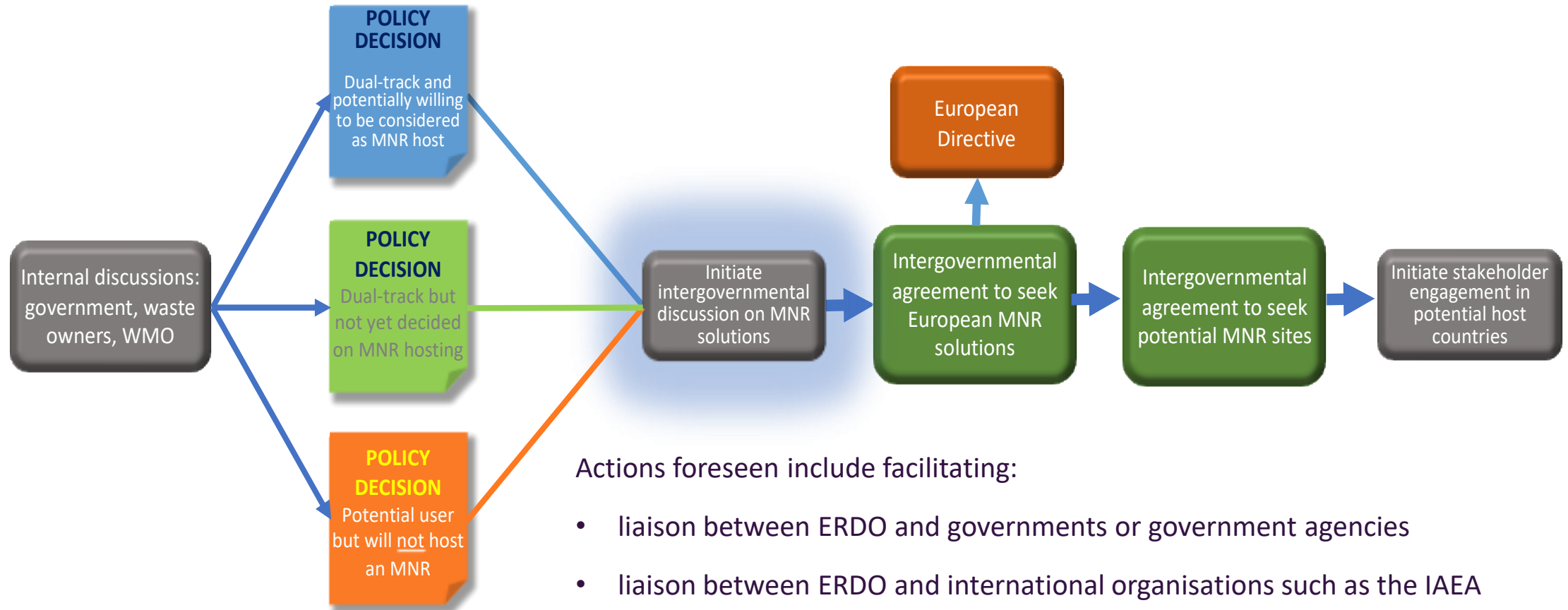
- Political engagement: national interests/drivers; moving towards intergovernmental agreement
- Public engagement: making the MNR concept commonplace

## Evaluation and Documentation

- Liabilities and responsibilities of MNR participants
- Organisational structures and governance of a MWMO
- Financing a project
- Benefits and Risks
- Siting strategies



# Intergovernmental discussions – the key aim of the Policy and Strategy pathway



Actions foreseen include facilitating:

- liaison between ERDO and governments or government agencies
- liaison between ERDO and international organisations such as the IAEA and European Commission
- direct government-to-government contacts and discussions

## Two styles of agreement are suggested by ERDO for consideration

- A general high-level intergovernmental agreement that the parties wish to work together to explore possible establishment of a European MNR
  - All three country 'starting points' could enter such an agreement and be willing to support and resource MNR development projects, as potential users
- A high-level agreement between two or more countries that they are prepared to initiate a joint programme of work on siting an MNR
  - Countries that have decided not to act as host would clearly not be expected to enter into this type of agreement

These could be sequential agreements

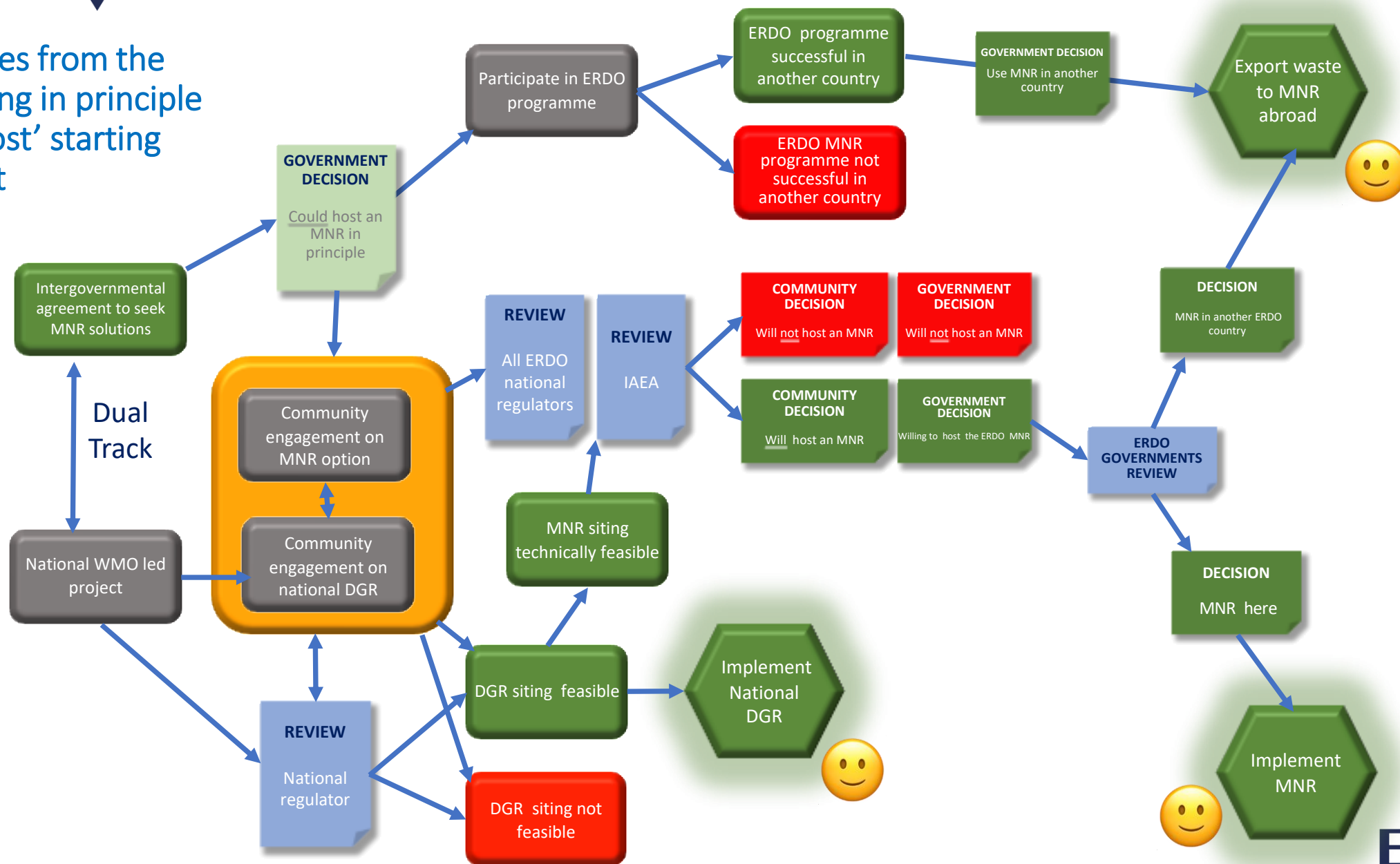
The next step would be to engage with stakeholders in the countries concerned

# Roadmap routes from different starting points

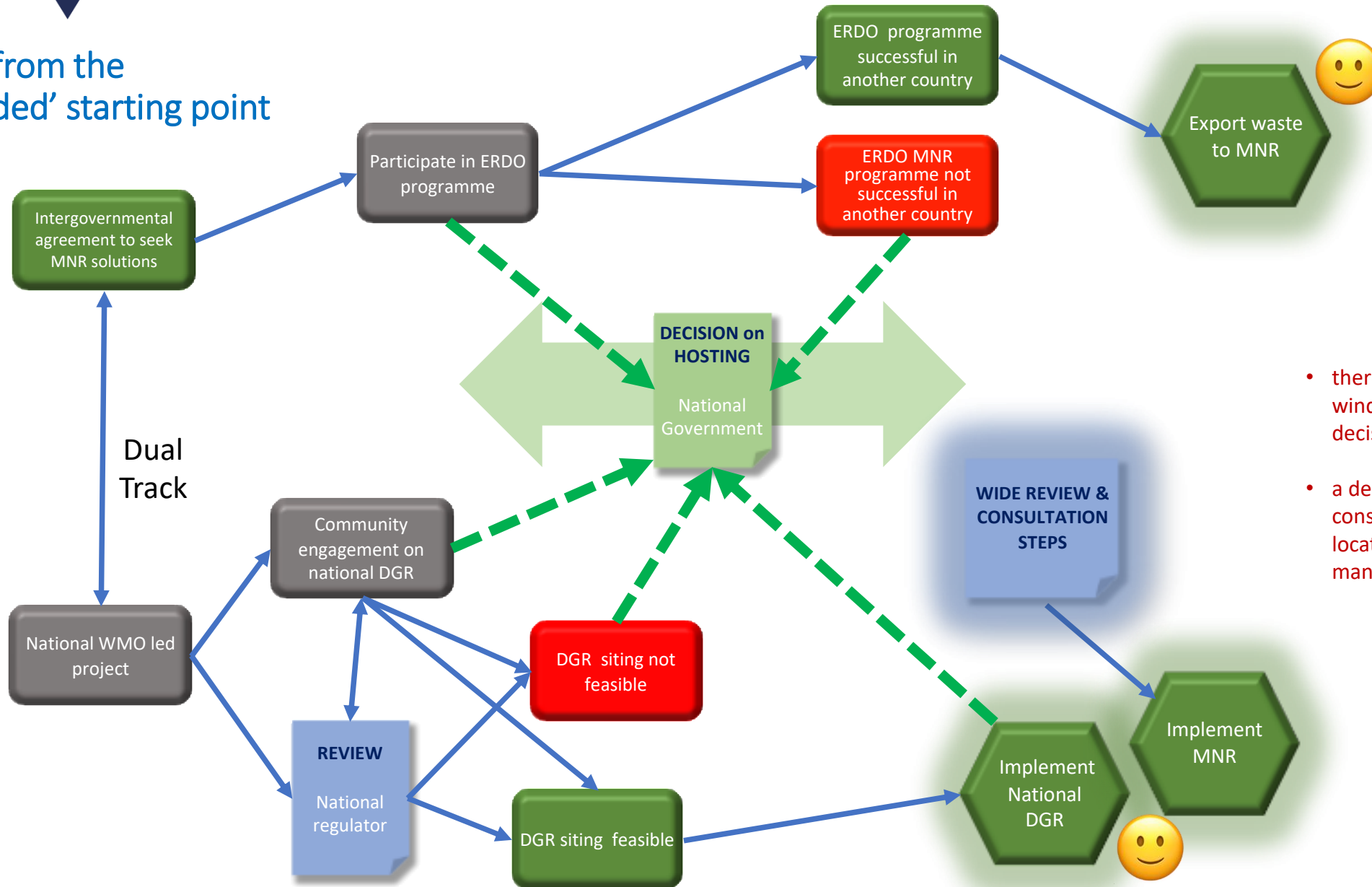
- It will be many years before an outcome is seen and there are many activities on the road
- The role of communities is central in each route in the roadmap
- There is no urgency for many of the decision milestones
- The only important decision needed in the short-term is an agreement between interested governments to co-operate on MNR project development and siting
  - for countries that have declared a dual track policy, the critical step now is to agree to pursue the multinational option actively

Higher-level engagement to achieve intergovernmental agreement is the key step and the starting point for all the routes through the roadmap

Routes from the 'willing in principle to host' starting point



## Routes from the 'undecided' starting point



- there is a wide potential window for taking many of the decisions that will be required
- a decision on whether to be considered as a possible MNR location can be influenced by many factors



# The common destination of the routes

The relationship between the national DGR project and the emergence of a successful MNR alternative in another country

- *Whether to use the alternative solution?*
- *When and how to terminate the national DGR programme and the dual track approach?*

Deciding when and how to make this decision would be a key strategic matter for any national RWM programme

*It will be many years before any country is faced with these decisions*

*But it will also take years to establish a robust decision basis for the choice made*

*Adoption and maintenance of the Roadmap will help ERDO Members to guide discussions and frame the work programmes in each of Europe's dual-track nations*