

EXPERIENCE FROM ROUTES

Break Session 1 - How to evaluate impacts of WPs

29th March/7th June 2022 • Nadja ZELEZNIK (EIMV)

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INTRODUCTION

- **ROUTES' OBJECTIVE**

- Provide an opportunity to share experience and knowledge on waste management routes between MS, with or without nuclear power programme
- Identify safety relevant issues and the associated R&D needs

- **ROUTES' SCOPE is ambitious**

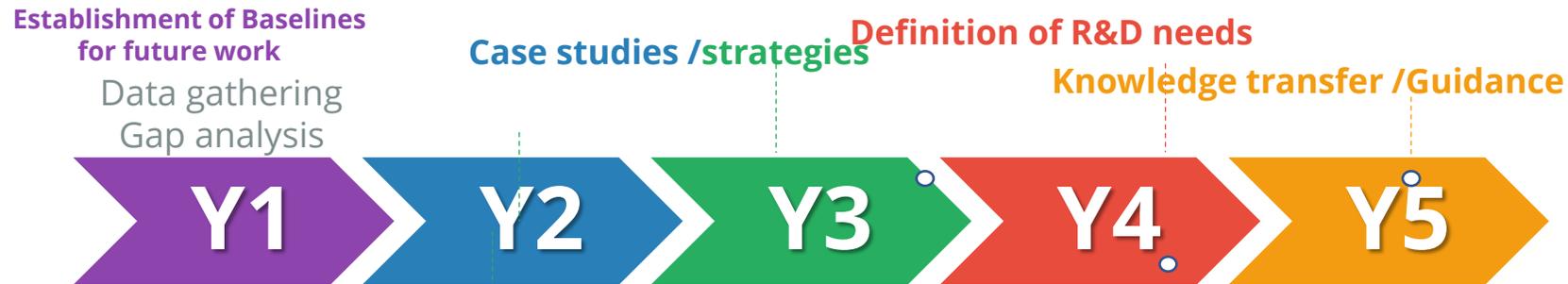
- It covers radioactive waste management activities from cradle to grave
- It includes MS with disposal programmes at different stages of development
- With different amounts and types of radioactive waste

- **Composition: 8 tasks, Core: Challenging waste streams, Characterisation approaches, WAC, Solutions for SIMS, Shared solutions, Civil society interaction**

- **How to find a common and shared perspective ?**



TECHNICAL PROGRESS OF ROUTES



• General work approach (Y1-Y3, and Y4 –Y5)

- The initial work was devoted to gather data (on challenging waste, WAC systems, past experiences on shared solutions etc..) → **questionnaire applied** within ROUTES participants → baseline for future work
 - Up to date information about the Inventory of challenging waste in participating MS
 - Up to date information on WAC in MS
 - A first review of experiences of sharable facilities particularly on facilities treating or having treated foreign waste and lessons learnt from past experiences
- **Collected approaches and strategies** adopted by MS to cope with issues related to waste management were compared
- Consideration of numerous **waste management case studies**, and identification of **associated learning from experience that can be more widely applied**
- In addition – **different ways of interactions**: workshops, events within ROUTES, in EURAD, with larger CS group.
- General recommendations are being derived for further studies / projects

KNOWLEDGE EXCHANGE & INTERNATIONAL COLLABORATION

- **Interactions with other EURAD WPs**

- **Joint CORI/FUTURE/ROUTES/KM session at EURAD annual Meeting** “Influence of organics and other wastes on redox and RN transport processes in geological disposal facilities in different programmes” – **PREDIS and THERAMIN gave presentations** (March 2021)
- **ICS Meetings** - CS larger group, ROUTES, UMAN, PMO and others (at least once/year)
- Presentation of results on Organic waste to **CORI – ROUTES Task 2** (October 2021)
- Review of D 9.5 deliverable by **UMAN and PREDIS** (Dec 2021 – Jan 2022)
- Exchanges with **KM WPs**

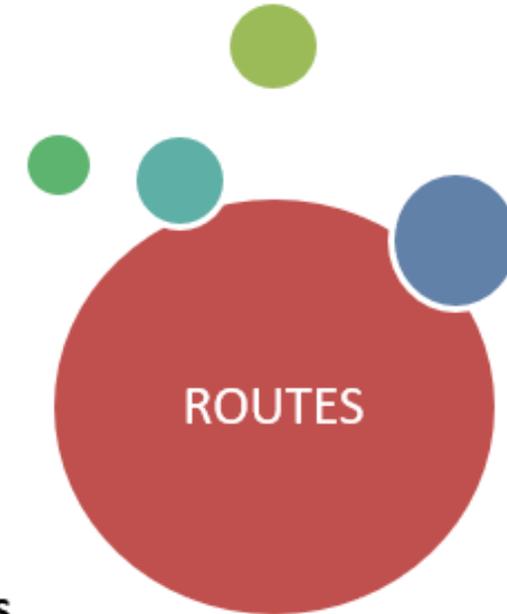
- **Interactions with other EC Projects**

- Interactions with on-going EC Projects has been strengthened
- Two joint **PREDIS/ROUTES/ERDO webinars** on WAC (April/May 2021)
 - All presentations and outcomes are available on links: [WAC 1](#) [WAC 2](#)
 - Presentation of ROUTES to **PREDIS and SHARE Workshops** (October 21st and 22nd)
- Participation of **IAEA representative** in ROUTES Task 5 and Task 3 WS (December 2020)
- Participation of **NEA and IAEA** representatives in **ROUTES Task 4 workshop** (June 14-15 2021)
- Presentation of ROUTES Task 4 at **Nuclear 2021 conference** (May 27 2021)

INTERNATIONAL COLABORATIONS

April and May 2021 –
Two joint PREDIS/ROUTES/ERDO
webinars on WAC

Presentation of
ROUTES
to PREDIS and
SHARE Workshops



March 2021 - Joint session
CORI/FUTURE/ROUTES/KM



ICS meetings with
Civil Society larger
group

October 2021 – Session on
organic waste with CORI



Joint ROUTES – PREDIS
poster at
EURADWASTE 2022



Participation of NEA and IAEA
representatives in several workshops

29th March 2022

EURAD Second annual event

EVALUATION OF THE IMPACT OF ROUTES ON IMPLEMENTATION OF DISPOSAL SOLUTIONS/CLOSING THE KNOWLEDGE GAPS

- **The directions:**
 - Approach to evaluate **ROUTES impact on the implementation of disposal solution** – use of SWOT analyses, assessment of also **other impacts** (for example towards other major **drivers such as cost optimisation, enhancing a safety margin, enhancing confidence with stakeholders and decision makers, or competence development and maintenance-KM**).
 - Approach to **identify and close knowledge gaps** in this relation, including **interactions between AP/ESP/SIMS and CS**. Networking / think tank strategic studies can open up an issue (i.e., identify more work that needs to be done in order to inform a decision or address a problem) or close down an issue (i.e., through the networking you discover that we know enough / can manage the risk without more work). Approach **how to evaluate to what extent the stated objectives from the start of the WP are met**.
 - Process of evaluation of ROUTES – **how to obtain the wider support for conclusions drawn**, either through the interactions with WP participants, or some other form of engagement (end users etc).

INTERNAL REVIEW – ROUTES SWOT ANALYSES

Strengths	Weaknesses
<ul style="list-style-type: none">1. Very good interactions between task leaders about ROUTES' progress; Task leaders and contributors are strongly involved in other tasks.2. A number of initiatives have been put in place to strengthen collaboration and share results with other EC projects.3. The joint webinars / workshops with other WPs / EC projects (PREDIS) / ERDO that we have held have been a real strength.	<ul style="list-style-type: none">1. One particular task (Task 3) experienced a great delay due to its former task leader disengagement and replacement.2. Some partners have very tight budgets and therefore limited flexibility. Contributions must be clearly identified from the project inception to maximise the value of inputs.3. Collaboration with other EURAD WPs to be strengthened.

INTERNAL REVIEW – ROUTES SWOT ANALYSES

Opportunities (recommendations for new Projects)	Treaths
<ul style="list-style-type: none">• 1. Good common basis for new collaborative projects:<ul style="list-style-type: none">• State of the art based on case-studies where general conclusions are derived• Helps in identifying technical and non-technical challenges to be further developed2. Interaction with other EC Projects has clearly showed the added value of participation of waste producers/operators.	<ul style="list-style-type: none">1. Further step - How to find a common playground? (HARPERS project aiming to explore opportunities for harmonized waste management).2. How to ensure different actors (WMO, TSO, RE, Waste producers and operators and CS) work together?

HOW TO EVALUATE THE IMPACT OF ROUTES ON IMPLEMENTATION OF DISPOSAL SOLUTIONS/CLOSING THE KNOWLEDGE GAPS-1

Task 2: Challenging waste streams

- In its first part, ROUTES Task 2 have brought a clear understanding of the different RW classification and RW categorisation at stake in the Member States.
- Regarding the cases of challenging waste, which is the core topic of Task 2, the different work meetings dedicated to each challenging waste were the occasion to:
 - Share initiatives implemented by some Member States and to disseminated to the interested MS the related reports and papers to work on those initiatives;
 - Identify common interest for particular R&D topics (e.g., treatment of graphite wastes).
- This will help to address a clear view of what is at stake regarding the management of challenging waste and to identify the initiatives that can be foster in the future.

Task 3: Characterisation approaches

- Comparison of RAW characterisation methods in MS (information provided by task participants) for different challenging wastes allows the identification of knowledge gaps as a first step towards comprehensive RWM.
- Compilation of characterisation strategies of MS for different challenging wastes to allow future optimisation of RWM.
- Use of drivers: Competence development and maintenance, Enhancing a safety margin. Enhancing confidence with stakeholders and decision makers, Information sharing and evaluation by and with Task participants.

HOW TO EVALUATE THE IMPACT OF ROUTES ON IMPLEMENTATION OF DISPOSAL SOLUTIONS/CLOSING THE KNOWLEDGE GAPS-2

Task 4: WAC & Task 6: Shared solutions

The success of a strategic study relies on the application/integration of learning points in subsequent waste management activities (e.g. in national programmes), which may not be instantaneous. To some degree, therefore, the ability to assess the impact that a strategic study such as ROUTES has had can only be determined some time after the project has finished (perhaps 6, 12 or even 24 months afterwards - likely to be diminishing impacts after this time).

- **Impacts could potentially be measured via a follow-up questionnaire to partner organisations. Questions could be based around the following points:**
 - Ongoing awareness of ROUTES work within the organisation, or more widely in the national waste management community.
 - Use of ROUTES outputs in national waste management activities (e.g. citation of ROUTES deliverables; development of new waste management solutions drawing on case studies examined in ROUTES).
 - New initiatives / collaborations facilitated, in part, by discussion and / or participation in ROUTES activities and associated contacts or networking.
 - Gaps that were not adequately addressed, and still remain after conclusion of the project, and what the MS has done/planned to close the gaps.

HOW TO EVALUATE THE IMPACT OF ROUTES ON IMPLEMENTATION OF DISPOSAL SOLUTIONS/CLOSING THE KNOWLEDGE GAPS-3

Task 5&8: Solutions for SIMS

- **Use of drivers: Competence development and maintenance, cost optimisation, enhancing a safety margin, enhancing confidence with stakeholders and decision makers, towards knowledge transfer on disposal options for SIMS, disposal strategy improvement for SIMS.**
- **Evaluation of advantages and disadvantages of processing techniques for several types of challenging waste as well as for disposal solutions for small amounts. This is particularly useful for SIMS to develop their disposal strategy.**
- **Results from ROUTES be a good base for a development of strategy for RWM in SIMS, costs calculation, human resources, etc.**
- **Information, evaluation and close interactions by and with Task participants.**

HOW TO EVALUATE THE IMPACT OF ROUTES ON IMPLEMENTATION OF DISPOSAL SOLUTIONS/CLOSING THE KNOWLEDGE GAPS-4

Task 7: Civil society interaction

- The evaluation of impact can best be assessed by the collection of views from different actors (all in ROUTES/EURAD, with the CS perspective supported by CS larger group interaction, and also from other related organisations (IAEA, NEA, NGOs not involved in the area,...)).
- The gaps could be closed by bringing alternate views to the discussions, by efforts to understand the different positions, a high level of transparency, reducing the information asymmetry through effective and "measurable" public access to information related to RWM, potentially narrowing the distance between the different positions by amendments of the RWM implementation strategies and programmes.
- The wider support can be achieved by adoption of modified RWM strategies and programmes, and by ensuring that the positions of all stakeholders (including the public) are seriously taken into account, that the corresponding decision-making processes are transparent, evidence-based and enable effective and early public participation.
- A methodology needs to be established and agreed between all actors. This in turn would lead to an evaluation framework to make the decision-making processes inclusive in terms of wider public interests and also ethically balanced. Such a framework would have to be based on a strong implementation of the Aarhus Convention, which provides CS access to transparency, participation, justice and in some cases to resources.

IF YOU HAD TO START THE WP OVER AGAIN, WHAT WOULD YOU DO DIFFERENTLY TO IMPROVE ITS RUNNING? -1

- **The Covid-19 crisis and the obligation to hold remote meetings was the occasion to organise several short meetings dedicated to subtopic. This succession of technical meetings allows to take time to share feedback experiences and practical issues among countries. This leads to identification of practical and useful R&D needs. These short meetings on specific topics appear very effective... perhaps more than face-to-face plenary sessions.**
- **Strategic studies work better when everyone can be involved in all areas of discussion, rather than being partitioned into 'silos' based on task scopes defined before the study begins. Therefore: make provision (including budget) for all SS partners to participate in all tasks and major workshops, to maximise cross-cutting discussion and joined-up thinking across all topics within the strategic study's scope. This would reflect the primary function of strategic studies as a forum for discussion and exchange of ideas (which contrasts with RTD studies, where individual tasks can more easily be conducted by discreet teams). Task 8 is a direct step to address this issue within ROUTES and enhance SIMS/LIMS exchanges but there are still other areas of the WP where wider interactions would be beneficial, but are constrained by the fixed resourcing set out in the GA based on defined contributions to specific tasks.**
- **Similarly, there is a need for all partners to have a degree of flexibility to participate in engagement, synergy and dissemination activities that add value to the work being conducted, but are not foreseen at the outset of the project. Similarly, to support the successful conduct of overarching events (e.g. annual meetings) that are organised by the coordinator but require contributions from non-coordinating / core group partners to be successful. The exact scope of such activities is hard to foresee in advance, but better provision could be made by allocating a fixed amount or % uplift figure on each partner's budget to allow such (essential) inputs to be adequately covered in a flexible manner.**

IF YOU HAD TO START THE WP OVER AGAIN, WHAT WOULD YOU DO DIFFERENTLY TO IMPROVE ITS RUNNING? -2

- **Suggestions:**

- Do not put too much efforts into questionnaires. It is rather worthy encouraging interactive meetings to identify case-studies that could be shared among countries.
- Provision within up-front planning for RTD and SS WPs to be able to engage with, and support, KM WPs (in PREDIS, budget is set aside to enable this).
- Need for every country (at least) to be involved in all tasks
- Meetings in order to identify key case-studies to be shared could have been encouraged sooner in the project
- The number of deliverables to produce is way too important in ROUTES. It would have been more efficient to have a reduced number of deliverables in order to reallocate more time for dissemination, KM and coordination of tasks and of the WP, time currently allocated to these activities being underestimated

ARE THERE ANY IMPORTANT CONSIDERATIONS TO SHARE ABOUT LEADING A STRATEGIC STUDY THAT YOU THINK ARE IMPORTANT TO SHARE WITH OTHERS THAT MAY INITIATE A STRATEGIC STUDY OR NETWORKING ACTIVITY?

- **Keep in mind that starting from practical issues and needs will help to define useful strategic orientations.**
- **Design SS delivery to maximise scope for participation, as described above.**
- **The lack of waste producers is an inconvenient of ROUTES. A strategic study needs to have all kind of key-actors involved in order to improve sharing of knowledge.**
- **EURAD SS activities will largely complete part-way through Y4 (2022-23). From a continuity perspective it would therefore be good for EURAD2 to start sooner, rather than later. One way to facilitate this would be to initiate any new strategic studies identified as being needed early on in EURAD2. This would have the added benefit of allowing new SS to inform subsequent EURAD2 work. The lead time for SS is relatively short, since there is no need to put arrangements in place for e.g. experimental work.**

Thank you for your attention!