SHARE

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D1.2: Methodology for evaluating the stakeholders' needs, current available solutions and gap analysis

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Version history

Version	Date	Editors	Description
1	30/09/2019	L. Aldave de las Heras	Draft document describing the initial methodology
2	31/10/2019	P. Joly	Minor administrative modifications

Abstract

The overall approach of SHARE is based on a consultation process with the broader community involved in decommissioning across the world. For that purpose, a methodology was developed, and different assessments tools (criteria, drivers and qualifiers) were defined. Simultaneously, based on the broad network of ERP and consortium members, a list of relevant stakeholders to be part of this initiative was built together with targets by profile and by country.

An online consultation process will be implemented to collect the views of the community stakeholders, with the aim to identify their needs and to rank such needs according to the identified criteria.

Simultaneously, available solutions will be identified and evaluated through the drivers previously specified in the project. A gap analysis between present and expected situations is then made, resulting in a list of actions needed to fill the gaps.

The report is describing the initial methodology developed to generate a valid roadmap for decommissioning research. The proposed methodology will, during the process, be reviewed and adapted when needed.

SHARE Methodology

The steps described in the ensuing are required to generate a valid roadmap for decommissioning research[1]. There are many steps in the process that need to be implemented decisively. Rather than addressing the Community of Stakeholders too often, a limited number of pivotal consultations, each with a visible output, will be deployed. A process of consultation/review involving the review panel/group of experts is foreseen in all the steps.

1. Inventory of relevant actors within stakeholder's profile by country

The SHARE consortium will establish a reliable list of Community Stakeholders. In that context, a Review Panel / Group of Experts will be established. The latter should be organizations having expressed an interest in contributing to the project, without being active consortium members. The roles of these three groups of Stakeholders in establishing the roadmap for decommissioning research can be described as:

- SHARE consortium members: Overseeing the process, implementing consultations and updating the outcome along the process ,
- Review Panel / Group of Experts: A number of contact persons at different organizations with an interest in contributing to the process of establishing the roadmap by assessing, reviewing and complementing the overall outcome of identified steps, and
- Community Stakeholders: Organizations having been identified by the SHARE project as having a vested interest in the roadmap, being willing to respond to requests for input along the process of establishing the roadmap and finally interested in implementing parts of the roadmap.

2. **Online consultation process-Questionnaire**

A questionnaire, composed of stakeholder organisation's profiles and a set of questions grouped in thematic batches, will be used to collect the opinion of the Community Stakeholders with the aim to identify their needs and rank such needs according to importance and urgency. Both criteria will be rated as low, medium, and high. However, the rate values could be adjusted to a scale of 1 to 5 or 1 to 7 if necessary. The qualitative results obtained from the online questionnaire will be translated into quantitative results by giving a rating to the ranking (see table 1).

Table 1: Importance/Urgency rating

Low	Medium	High
1	2	3

A weighted decision matrix will be used to determine and rank the needs. The criteria used will be: importance, urgency as well as number of countries and entities concerned. A weighting factor of 0.1

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[1] Including R&I and other activities described above under section 1.3. CONCEPT AND METHODOLOGY in the Grant Agreement 847626-SHARE

and 0.01 is used for the latter, respectively. The actual number of countries or entities will overshadow the criteria importance and urgency when they are not reduced by these weighting factors. Other criteria could be stablished if needed. An example is given in table 2.

Table 2: Weighted decision matrix for needs

		Needs			
Criteria	Weighting factor	A	B	C	D
Importance	1	3	2	1	2
Urgency	1	1	1	1	3
Number of Countries	0.1	11	17	13	4
Number of Entities	0.01	24	79	38	9
Y					
Z					
Total without weighting factor		39	99	53	18
Ranking without		3	1	2	4
Total with weighting factor		5	5	4	5
Raking with		3	1	4	1

A process of review involving the review panel/group of expert and the stakeholders Community will be organised to revise and consolidate the findings of the open consultation process (e.g. in the form of a dedicated workshop).

The prioritized needs will then be grouped into thematic areas (e.g. decontamination, robotics,…).

3. Inventory of drivers to qualify and quantify the available solutions

The WP1 team will identify and set up a preliminary list of drivers to qualify available solutions. The initial list will be reviewed by the review panel to endorse the final list of drivers. Moreover, it could be useful to obtain the opinion of the Community stakeholders. The initial list of drivers will include cost, safety, time durations, sustainability (e.g. resource efficiency, circular economy, CSR), access to expertise and competence, maintenance and development of knowledge, regulations, guidelines and their potential harmonization, TRLs, SRLs (see Annex1).

The relative importance of each driver will be assessed during the review process. A weighting factor will be established (see table 3) for each driver. A paired comparison analysis will be used to work out the relative importance of the different drivers. The final assignment for each driver will be by consensus.

Table 3: Drivers weighting factors

Weighting factor	Meaning
5	Very important
4	Important
3	Neutral
2	Low importance
1	Not important

4. An Evaluation tool for current available solutions

A preliminary list of potential currently available solutions for each need identified will be established to help the evaluation. Each group of potentially available solutions/best practices will be compared and ranked using a weighted decision matrix (WDM). A WDM is very useful in making complex decisions, especially in cases where there are many alternatives and many criteria of varying importance to be considered. A WDM is used to compare the different alternatives with respect to the multiple criteria with different levels of importance.

The list of drivers will be used to evaluate and rank the available solutions. A clear definition and scoring rule will be established for the drivers. A seven-point rating scale will be used for each driver to evaluate each available solution. An example of possible scoring is given in the table 4 for the driver "cost".

Each driver has a relative weight (see 3 Inventory of drivers).

Table 4: Seven point scale scoring

Driver scoring	i.e. Cost
-3	extremely expensive
-2	very expensive
-1	expensive
0	neutral
+1	affordable
+2	very affordable
+3	extremely affordable

An example of how current available solutions will be evaluated and ranked is shown in table 5.

5. Gap Analysis

A gap analysis will be used to compare the actual state (current available solutions) against the desired state, and will help to

- identify the gaps between these two states, and
- define a list of activities to close them (figure 1).

Figure 1: Gap Analysis

An Individual gap analysis will be performed for each need and its available solutions.

The desired state for each need will have to be identified. The gaps will be identified by comparison of the actual state (current available solutions) and the desired state. After the identification of the gaps, a closer examination of why they exist and what can be done about them will be made. For this purpose, individual SWOT analyses will be carried out. SWOT focuses on Strengths, Weaknesses, Opportunities, and Threats aiming at determining activities to close the gap. An example of a SWOT analysis is given in figure 2.

Figure 2: Example SWOT analysis for a Need X
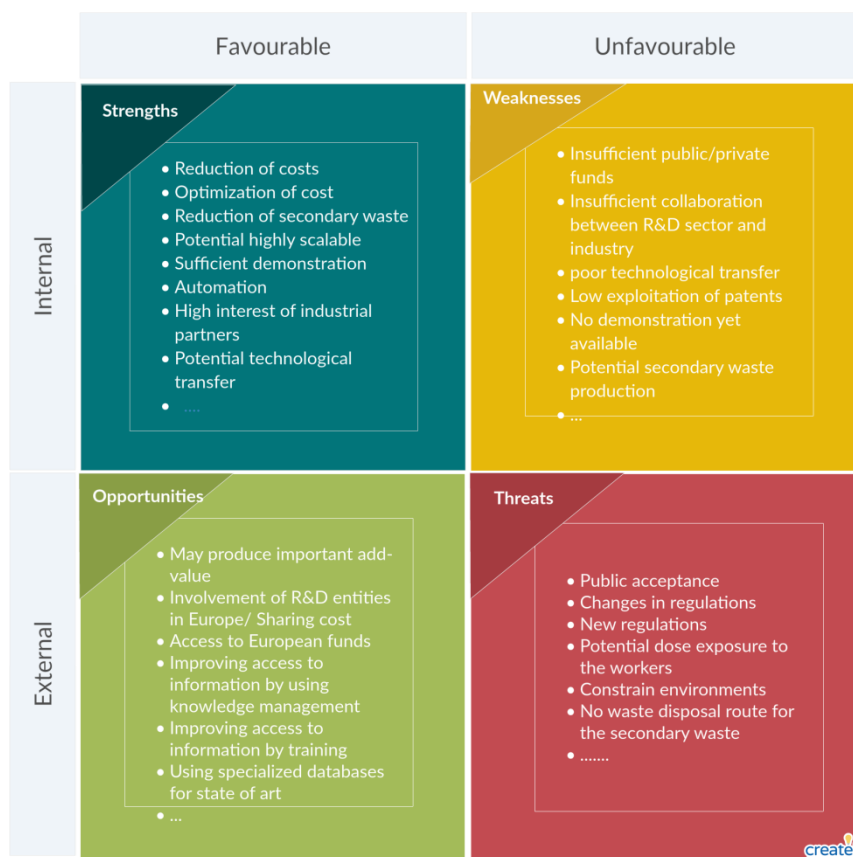
6. Strategic Research Agenda

A SRA is the result of the gap analysis, prioritised and grouped in thematic areas with a list of activities to achieve the desired levels for each prioritised need (knowledge production, knowledge transfer, standardization and guidance, strategic studies, technological transfer, cross-cutting activities…) forming the basis to establish the roadmap.

7. Roadmap

The roadmap is the SRA organized along with a time schedule for implementation of different actions and activities in the coming 5 to 10 years. It builds on the high ranked activities from the SRA and the use of the implementation qualifiers and the implementation.

The activities are analysed with respect to the instruments allocated to them. Examples of implementation qualifiers are that for jointly implementing R&D there should be a sufficiently broad representation of interested types of stakeholders, an adequate geographical distribution, the expressed willingness of organizations to commit, availability of co-funding instruments as needed, etc. For organizing training in order to provide knowledge about existing solutions, the set of implementation qualifiers is less stringent with respect to geographical distribution or types of organizations with that need.

Examples of implementation instruments are working groups, information exchange platforms, technical project, co-funding, technological transfer, etc.

Table 5: Weighted decision matrix for currently available solutions (actual state)

Decision making matrix	Weighting factor	Currently available solutions			
Drivers/Criteria		A	B	C	D
Cost	4	3	-2	2	0
Time duration	1	1	0	1	1
Sustainability	2	2	0	2	2
Safety	5	0	2	3	3
Access to expertise and competence	3	-1	1	-1	2
Maintenance/Development of knowledge	2	-2	-2	-2	2
Regulations	4	-3	-3	-3	1
Guidelines and their potential harmonization	1	0	-1	-3	2
Availability of Waste Routes	2	2	-1	-3	1
Public support	5	3	2	-1	-1
TRLs/SRLs	2	-1	3	-2	0
Workers Dose	4	-2	0	0	-1
weighted scores (rating)		7	2	-9	29
sum of positives		11	8	8	14
sum of negatives		-9	-9	-15	-2
count of neutrals		2	3	1	2
weighted sum of positives		36	29	28	38
weighted sum of negatives		-29	-27	-37	-9
count of positives		5	4	4	8
count of negatives		5	5	7	2
Ranking based on weighted scores		2	3	4	1

Annex 1: List of drivers

- Cost
- Time duration
- Sustainability
- Safety
- Access to expertise and competence
- Maintenance/Development of knowledge
- Regulations
- Guidelines and their potential harmonization
- Availability of Waste Routes
- Public support
- TRLs/SRLs
- Workers Dose