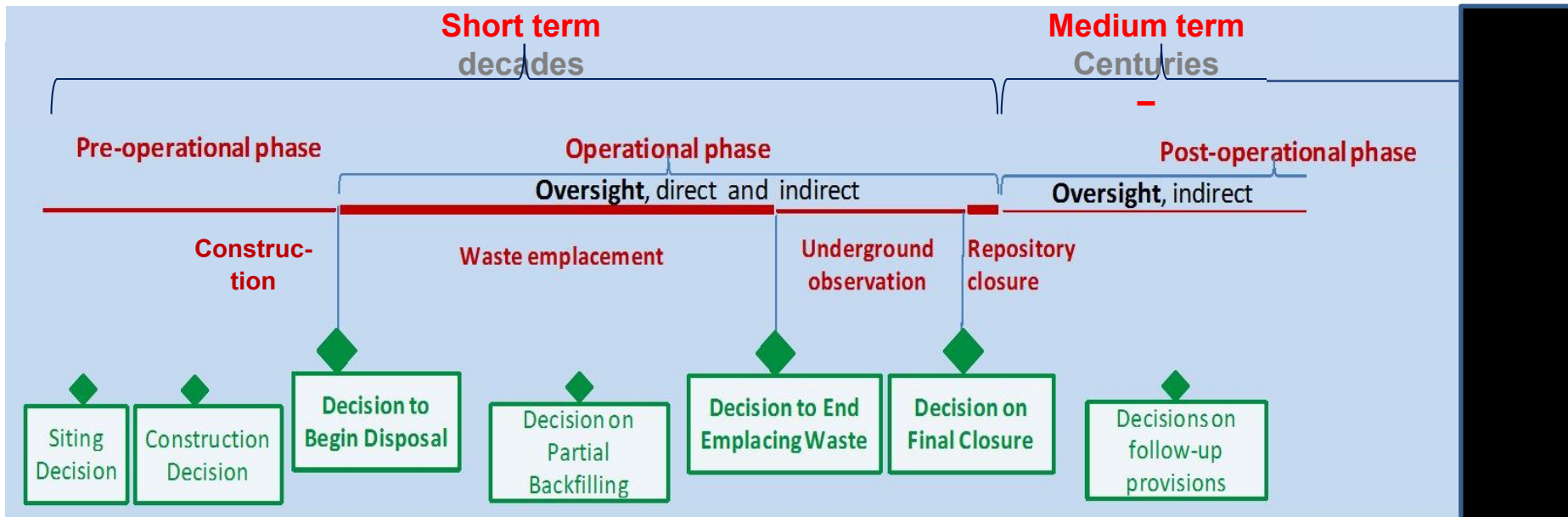


Group discussions on the long term
Synthesis for the plenary session

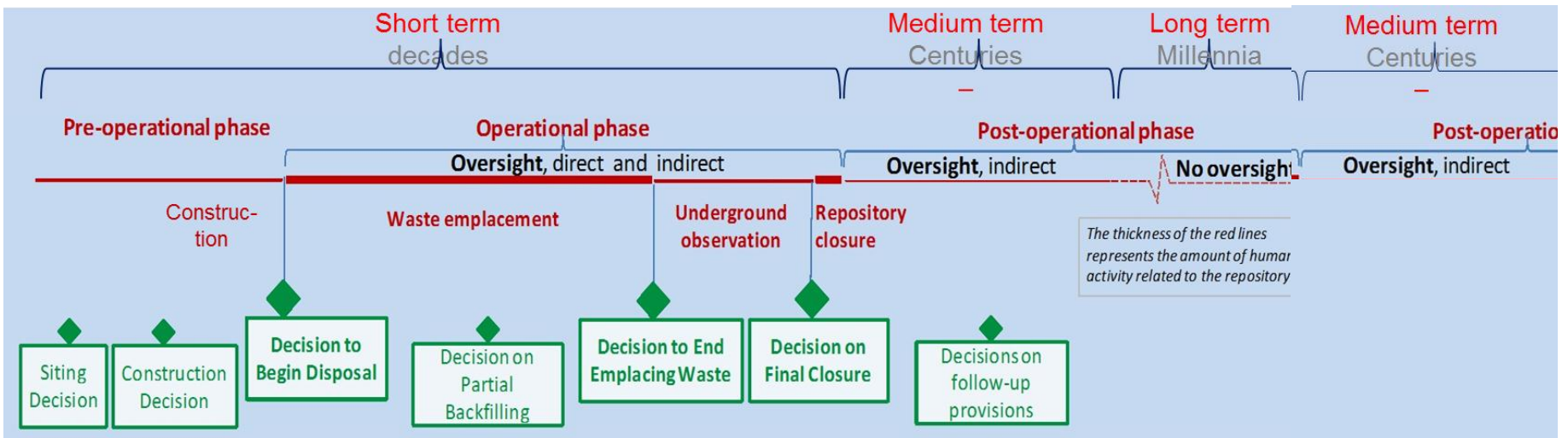
What is long term ?

- long term – as defined by RK&M group – is not necessarily what comes after medium term:
 - Medium term should last as long as possible
 - ⇒ In an ideal world, there is no RK&M long term, until « John Maynard Keynes' long term » (when we are all dead)



What is long term ?

- RK&M medium term can come again after RK&M long term !
 - RK&M long term is defined as the absence of oversight
 - If future generations succeed in initiating a new period of oversight, there will be again a medium term period !



What is long term ?

- At least 3 possibilities for the long term period:
 - Lack of memory - « there's something dangerous here »
 - No memory at all
 - Or even worse : distorted memory - « there's a treasure here »
- Following the defence in depth principle, provisions for memory keeping should:
 - Prevent the lack of / decreasing memory-keeping :
 - Systemic approach -> **group 5**
 - Cultural heritage -> **groups 4 and 6**
 - In case of lack of /decreasing memory-keeping, favour the regeneration of awareness and avoid a distorted memory
 - Facilitating knowledge reconstruction -> **groups 1 and 3**
 - Means :
 - Cultural heritage -> **group 4 and 6**
 - Markers -> **group 2**

Systemic approach

- What should it include ?
 - Provide a message aimed at the future
 - Interface with society ; for example be educational
 - Cover other hazards (toxic waste, natural risks)
 - Metadata to provide the context of the data
- How can it be implemented ?
 - International role is essential to give robustness
 - Disposal sites should be seen as monuments and cross refer to others disposal sites
- What areas need attention ?
 - Keep « enough people in the race » so that someone gets to the end
 - Build a system of metadata that does not rely on present context. (Is it possible ?)
 - Organization to regenerate information on a rolling basis
- Ethics :It is not our role to handle the responsibility for future generations but to enable them to find their own solutions

Cultural heritage

- Is it possible to make a cultural heritage from a repository ?
 - Heritage is something alive, which contradict with the idea of final disposal.
- Overcoming this difficulty should be a priority :
we need a cultural response to a technological problem
- Other difficulties :
 - Invisibility is a problem but on an other hand, industrial heritage has became common
 - The topic « radiation » is missing in the commonplace culture: measuring radiation has to become as measuring the weather.
- Proposals :
 - Cultural heritage must be combined with the systemic approach (redundancy)
 - We need the presence of local community to preserve the cultural memory. For that we need to change the image of repository :
 - Shall we stop to use the term « waste » ?
 - Find opportunities around the disposal and combine with other interests (Ex: national archives)
 - Enforce with a national or international common cultural vision
- Step by step approach :
 - We can only construct culture for our cultural context, and then it has to be transmitted
 - Cultural heritage is also thinking about contemporary practices
 - Rituals are a good thing to ensure cross generation transmission
 - How to keep the rituals alive ?
 - Think of using universal motivation (astronomic phenomena) or commemorating something

Facilitating knowledge reconstruction

- Redundancy is a key factor for robustness
- Who shall secure knowledge and facilitate knowledge reconstruction ?
Two options: Groups that have a personal interest or formal institution
- Develop synergies:
 - With conventional waste
 - More links between RK&M and IAEA
- Reflective approach : what is the value associated with preserving information and for who ?
 - The strategy depends on this value : is it human, economic... ?
- Maintaining massive records is less important than keeping key knowledge. We don't know how sophisticated will future generations be.
- To organise, now, knowledge reconstruction in 10 000 years remains kind of utopic. Cross generation transmission remains the most robust:
 - Mediated transmission allows an adaptive approach
 - Education and integration of younger generation on radioactivity is essential

Markers and beyond

- Duality of markers because of contradictory tendency:
 - Risk of having markers -> curiosity to drill there . For example, at this stage, Sweden and Finland don't plan to have markers **on site**
 - **But** Responsibility to inform people is a motivation to have markers
- Standardization has potential benefits :
 - Learn from each other
 - Ease the comprehension
 - But this rise a risk : if the selected common marker is not understood, this is a common mode failure among sites
- Markers have also a role for the medium term: they help us maintaining memory.