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## Safety of nuclear waste management in the context of long term sustainability concepts

Going back to the origins of modern sustainability concepts, the Brundtland Report of 1987 develops a broadly accepted definition: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs." The literature derives several crucial principles, including intra- and intergenerational justice, holism and integration, as well as participation and preventive long-term orientation.

In order to understand the sustainable character of current and future nuclear waste management technologies, we believe that these principles need to be addressed. At the same time, the social, economic as well as environmental dimensions of sustainability require systematic consideration. For this purpose, we develop a sustainability matrix for nuclear waste management. We apply the proposed matrix to various current and proposed waste management technologies ranging from interim storage over final disposal to P&T technologies, assessing the socio-economic dimensions along with the technical framework. In doing so, we pay particular attention to evaluating sustainability along with safety concerns in the usage of these technologies.

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