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Contribution of Space Activities to Solving Global Societal Issues (2)

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INCORPORATING BENEFIT ASSESSMENT IN PROGRAMMATIC DECISION-MAKING

**Abstract**

It is often being said that the decision to participate in space exploration and to what extent one should participate is strongly depending on the benefit that space exploration is able to generate. The assumption behind this statement is that decision-making is made on a purely rational basis and that all necessary boundary conditions are known to be able to take indeed a rational decision. In practice, however, it is impossible to know all these boundary conditions. This becomes apparent when asking e.g. what the benefits of space exploration really are? According to the dictionary a benefit is a good or helpful result or effect. Along these lines the European Space Policy Institute (ESPI) defined in a study the exploration benefit as the satisfaction of the need of a given user. Using the Analytical Hierarchy Process (AHP), also known as “pairwise comparison”, first the needs of five different stakeholder groups were identified: politics, science, industry, education, and general public. In the second step it was asked to which extent a given space exploration scenario would fulfil the various needs of a stakeholder. Obviously, the needs for each stakeholder group are different though certain overlaps exist. The study showed that for the political stakeholder in Europe two aspects of space exploration are especially important: on one side the broad international cooperation in a global undertaking like space exploration and on the other side the need to increase the options to respond to future and today unknown challenges. From a science point of view space exploration contributes most to the general education in natural sciences, the generation of scientific knowledge, though the most important need, is not the most highly expected outcome. The paper summarises these and other findings of the study performed by ESPI and suggests a way forward how the described process of benefit assessment can be applied to future programmatic decision-making.