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BENEFITS BROUGHT BY ESA SPACE SPIN-OFFS

Abstract

Humanity will be faced with an important number of future challenges, including an expansion of the lifespan, a considerable increase of the population (9 billion by 2050) and a depletion of resources. These factors could trigger an increase of chronic diseases and various other health concerns that would bear a heavy weight on finances worldwide.

Scientific advances can play an important role in solving a number of these problems, space technology, in general, can propose a panoply of possible solutions and applications that can make life on Earth easier and better for everyone. Satellites, Earth Observation, the International Space Station (ISS) and the European Space Agency (ESA) may not be the first tools that comes to mind when thinking of improving health, yet there are many ways in which ESA and its programmes contribute to the health care arena.

The research focuses on quantifying a number of ESA spin-offs to provide a better view on how Space can contribute to worldwide health. This quantification is part of the present strategy not only to show macroeconomic return factors for Space in general, but also to identify and describe a number of 'best practice' type of examples close to the general public's interest.

For each of the 'best practices' the methodology takes into account the cost of the space hardware/software, a number of tangible and intangible benefits, as well as some logical assumptions in order to determine the potential overall returns.

In conclusion, the study recommends a way in which ESA's spin-offs can be taken into account early on in the development process of space programmes in order to generate higher awareness with the general public and also to provide measurable returns.