



## **Terrrestrialization of isolated habitats**

Agata Kolodziejczyk (1), Matt Harasymczuk (2), and Bernard Foing (3)

(1) Advanced Concepts Team, European Space Agency, Noordwijk, Netherlands (fichbio@gmail.com), (2) Institute of Microbiology, University of Warsaw, Warsaw, Poland (matt@harasymczuk.pl), (3) ESTEC, European Space Agency, Noordwijk, Netherlands (bernardfoing@esa.int)

One of the most prominent issue for habitability of the solar system and beyond is to adjust a habitat for human life. Since the human life adapted to terrestrial environment during millions of years of evolution, terrestrialization of the base should be a natural trend strictly applied in habitat design. We discuss basic concerns about introducing biomimetic backup safety solutions such modularity, circularity, autonomy and plasticity into life support systems. Particularly we describe critical life processes such briefing, drinking, eating, homeostatic regulation, activity and sleep, in relation to symbiosis and competition with other species living together. Finally, we analyze ecological tolerance and transformation factors, which seem to be crucial in future habitability projects.