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

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ENSURING LONG TERM SURVIVAL OF LIFE AND ECOSYSTEMS : AVOIDING A 6TH GLOBAL  
EXTINCTION OF LIFE ON EARTH

**Abstract**

Scientists and conservationists report a 6th global extinction of life on earth. It is estimated in less than 40 years we have lost over 50 percent of the earth's wild vertebrates (1) while many invertebrates, like pollinators, are threatened too (2). Best data estimate less than 0.1 percent of the total number of animal species on earth are being backed-up (3) while breeding programs only include around 200 animal species of the thousands threatened (4). A new approach and set of collaborations is warranted. The organisation's objectives include cell conservation of a maximum amount of animal species. Our plans include sampling living cells of animals in places of high biodiversity. Next to local storage in country and / or continent of origin, the development of one or many centralised protected vaults, like the plant seed vault in Spitsbergen, is essential (5). The safe vaults will be on earth but also in space and other planets. Technologies that protect the quality of living cells from radiation are needed. Making a high quality large scale exportable back -up of life on earth is key to guarantee long term survival of humanity and biodiversity. A copy of the living cells will be used to advance the field of reproductive biology and technology. It will also offer opportunities for sustainable food supply and new developments in medicine (6). To be able to perform this work effectively and timely, different disciplines are joining the effort: one health, reproductive biology and technology, space communities, business and the broader society. For speed, quality assurance and safety of work, different technologies used in space and automation will become vital. The possibilities that the use of satellites, drones, robotics, heat and other sensing technologies offer need to be fully explored. A new working model should be implemented worldwide in the next 5 to 6 years.

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