

Transcending Societal Issues for Space Exploration (12)
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THE GREEN SPACE ECONOMY - AFRICA'S WAY TOWARDS SUSTAINABLE SPACE MISSIONS

Abstract

The global space economy faces the harsh reality that it isn't environmental friendly today. The use of toxic propellants in launcher, the creation of space-debris around Earth or the significance of natural resources for spacecrafts isn't really an indicators for sustainability. Already eight decades ago humankind went into space. Only 40 years ago we as humans started to create re-useable shuttles that could return to Earth. Unfortunately leaving behind the trashed launcher. Since 2017 now parts of launcher return to Earth for re-use, while most still congests our orbit. This kind of re-usability still doesn't mean recyclability. Materials in todays space missions are often neither environmentally friendly nor reusable. Thus scarce natural resources get lost. Since almost 80 years now the space faring nations haven't done spacecrafts that are fully recyclable, fully re-useable, free of emissions and also launched from optimal geographically located launchpads. Unfortunately spacecrafts still require mostly toxic propellants that endanger our atmosphere - our planets protective shield.

Emerging African space nations with a strongly commercialized space industry have the opportunity to shape the future of global Space missions in a truly green approach. The continent is breeding a growing amount of young entrepreneurs who see not just the beauty but also the value of our planet and the need for a more sustainable use of natural resources. Africa's growing population needs space based solutions in daily life. The continent will have the biggest population on Earth in 2100 can set new standards for spacecrafts that use environmental friendly propulsion systems, fair sourced and reusable materials realize a total reduction of trash in the form of space debris. Concerning launcher, the continent inherited an optimal located launchpad at the equator. Green propellants that don't harm the environment or the use of eco materials for fairings or structures will ensure sustainability.'Green' sustainable components could be a global game changer and thus impact space mission for the better. Socio-economic driven space applications and missions can't be compromise by harming and hazardous materials as pastly. The global space community shall support this development since Africa has what it takes to establish a 'Green Space Economy' in the best interest for our planet and to show classical space player that it can be done. The future is Africa and with growing global space activities this future will be truly environmentally friendly in the best interest of all of us.