SPACE RENAISSANCE ACADEMY

Committee: The 18th SDG - bootstrapping Civilian Space Development before 2030

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Why an 18° SDG is necessary, in short

A 18° Sustainable Development Goal - bootstrapping Civilian Space Development before 2030 – is necessary for the following reasons, at least:

1. The Earth citizens, that recently overcame the threshold of 8 billion, are in deep need of a new horizon of development. Expanding into outer space is the sole way to make the 17 SDGs really sustainable, as better explained in the subsequent paragraphs.
2. The 17 SDGs were conceived and approved in 2015, when general space policy was not advanced as it is nowadays. Reusable rockets were just to be experimented for the first time, the new space economy was already developing, yet it didn't had yet the impetuous growth that's going on during the last two years. Space is playing a key role for global sustainability, assuring a powerful line of industrial development, essential for the 7th, 8th and 9th SDGs.
3. The 17 SDGs cover life on Earth and life in water, yet not life in space. This is a serious gap to be filled.
4. The COPUOS structure is old and outdated, and needs a serious revamping. Space law and space policy are the key subjects to be updated. The ARTEMIS accord was made with the aim to provide a new framework, to integrate the Outer Space Treaty.

The 17 SDG of the UN 2030 agenda: an unsustainable utopia, if limited among the boundaries of Planet Earth.

On 25 September 2015 the governments of the 193 Member Countries of the United Nations signed an Agenda of 17 Sustainable Development Goals to be achieved within 2030. And the UN General Assembly approved the Agenda. The keyword of the Agenda was "sustainability" of human civilization further development. The key critical themes faced by the UN Agenda 2030 were the following ones:

- **Social and Economical Growth Goals** (SEG): SDGs 7, 8, 9 concerning energy, jobs and industrial development
- **Human Life Goals** (HLG): SDGs 1, 2, 3, 4, 5, 6, 10, 11, 16, related to poverty, hunger, health, education, water and sanitation, gender equality, inequalities, urban env and communities, peace and justice
- **Earth Environment Goals** (EEG): 13, 14, 15, focusing climate, life below water and on land
- **Methodology Goals** (MG): 12, 17, about responsible consumption and partnerships for the goals

All of the 17 SDGs are perfectly shareable, from a humanist point of view, by the Planet Earth's good willing people, aimed to assure a sustainable continuation of our civilization.

Yet, as soon as the Agenda was published, some relevant criticalities appeared. First of all, the general criteria supporting the concept of sustainability developed by the agenda is an unquestioned limitation to the boundary of Earth's atmosphere. Outer space was not considered at all, as a dimension that could help to increase the sustainability of human development.

Actual status, and the need for an increased awareness and planning

End of 2022, while we are planning sessions for UN GA 78 2023, the awareness about the potential of space in support of a sustainable development in general terms seems to be increased, thanks to some space advocacy groups and organizations which are active inside the UN Institutions, namely in its Space branch. At least, the use of space technologies and space resources *on Earth* seem to have conquered a better place and consideration, in the above mentioned UN space branch. See this page "Space Supporting the Sustainable Development Goals", on the UNOOSA website[1].

For the immediate future, in order to enhance awareness and programmatic efforts, we see at least two major issues.

[1] https://www.unoosa.org/oosa/en/ourwork/space4sdgs/index.html

a) The UN space branch – UNOOSA, COPUOS – should break the thin but hitherto impermeable diaphragm that keeps space topics out of the UN public talks to the general public opinion

b) The immense and decisive contribute that civilian space development can give to sustainable development in general, not only on Earth's surface, but also, and mainly, in outer space should be added, communicated, promoted and developed in the UN space policy. We are talking about civilization expansion into outer space, space settlement and industrialization, starting in the Geo-Lunar space region, Earth and Moon Orbits, and Lagrange Libration Points.

The 17 SDGs revised hierarchy

Analyzing the 17 SDGs versus their sustainability, we can immediately observe that the Social and Economical Growth Goals (SEG) SDGs 7, 8, 9 are key pillars, sustaining social, economic and cultural growth, thus all of the Human Life Goals, and the Earth Environmental Goals: without industrial development poverty, hunger, health, education and sanitation cannot be enhanced. Gender equality cannot be pursued, social inequalities cannot be reduced. There will be no resources to improve urban environment and communities. In an environment of poverty and social fear, peace and justice will remain a dream, an utopia. The environmental goals, as well, cannot be pursued in a context of declining industry and technology. In Figure 1 a schematic representation of the sustainability pyramid, as presented by A. V. Autino at the UN GA 77[2].

Figure 1. The pyramid of sustainability

The big issue is about the sustainability of the three pillar goals. If limited within Earth's atmosphere boundaries, the key pillars are NOT sustainable. The main conflictual factors encompass energy at first place. Energy demand will increase manifold due to the further development of the web society and the electric mobility. Btw, the raise of web communication and entertainment technologies is advocated by de-growthist propaganda, in order to discourage general mobility. The survived mobility should fully convert to electrical feed. Yet, the rising production of electronic devices for communication / entertainment and components for electric cars requires rare earths and other materials which are critical to be found on Earth. SDG 15 calls for a reduction of use of paper. Yet, the less we will use paper, the more we will need electricity. Culture is now largely based on electronic media: should we surrender and use less electricity, our culture could revert to stone age. Furthermore, the global consumption of Earth resources, starting from agricultural land to the overload of all the recycling systems, is the big problem. The "Earth overshoot day" is coming earlier each year. Each year, we are consuming the resources of 2 planets Earth, and that is the real challenge of sustainability. The Wars for oil (not yet archived by history) are now accompanied by wars for rare earths. Pollution will be increased by disposal of batteries and technological wastes. Oceans are already over-exploited and intolerably polluted. Not to mention the big social issues of the closed world, such as pandemics and several serial economic crises.

The urgent need to add an 18° SDG: bootstrapping Civilian Space Development before 2030

In general terms, the sustainability of the 7th, 8th and 9th SDGs is the real challenge. Expansion is indispensable, to avoid any de-growthist drift: degrowth would kill human freedom, culture and social nature. If confined in a cage, democracy will be crushed among nationalism, sovranism and neo-authoritarian

[2] https://youtu.be/XQVHVkn3CiM?t=1787

feudal powers. A transterrestrial society[3] shall begin to exist: a horizon of expansion that will restart social growth, hope in the future and civil growth. The transterrestrial economy may include Earth orbit and the Geo-lunar space region, that was also called the Greater-Earth, a sphere 3 millions km wide, corresponding to the Earth's gravitational influence: "This sphere, with a diameter of 3 million kilometers, has 13 million times the volume of the physical Earth and through it, passes some more than 55,000 times the amount of solar energy which is available on the surface of the planet. In addition to energy, within this sphere are enormous amounts of other resources, including the Moon and occasional passing asteroids."[4]

The only sustainable development, for 8 billion people, is beyond the limits of Planet Earth, expanding into the transterrestrial region, taking profit of its enormous resources. A transterrestrial economy will not cut the umbilical cord with the mother planet in short time, it will sustain both the planetary and the extra-planetary communities, yet it will start developing civilization outside Planet Earth. Doing that, the transterrestrial economy will progressively relief Earth environment from the burden of the industrial development. In such perspective, significant progresses on the environmental SDGs (13, 14, 15) will be measured in due time. Since the experience with first space habitats will begin, experimenting small artificial ecosystems in space, we will also learn more about a better management of ecosystems on Earth surface. See in Figure 2 the pyramid of Really Sustainable Development Goals (RSDG).

Figure 2. The really sustainable development goals

Likely a 19th SDG should be added as well: Life in Space, since the 17 SDGs cover both life on the land and life under the water, but not life in space. Such SDG is relevant from the point of view of the general global natural philosophy, that shouldn't be limited to the planet Earth environment, yet to include the whole Solar System and the Cosmos beyond (SeeFigure 1Figure 3).

[3] The concept of "transterrestrialism" is due to Dr. Marie-Luise Heuser, Head of the Space Renaissance Academy Space Philosophy Laboratory - https://youtu.be/-hpu91QNklM

[4] https://greater.earth/GEO_DOCS/a_new_perception_of_our_planet.php

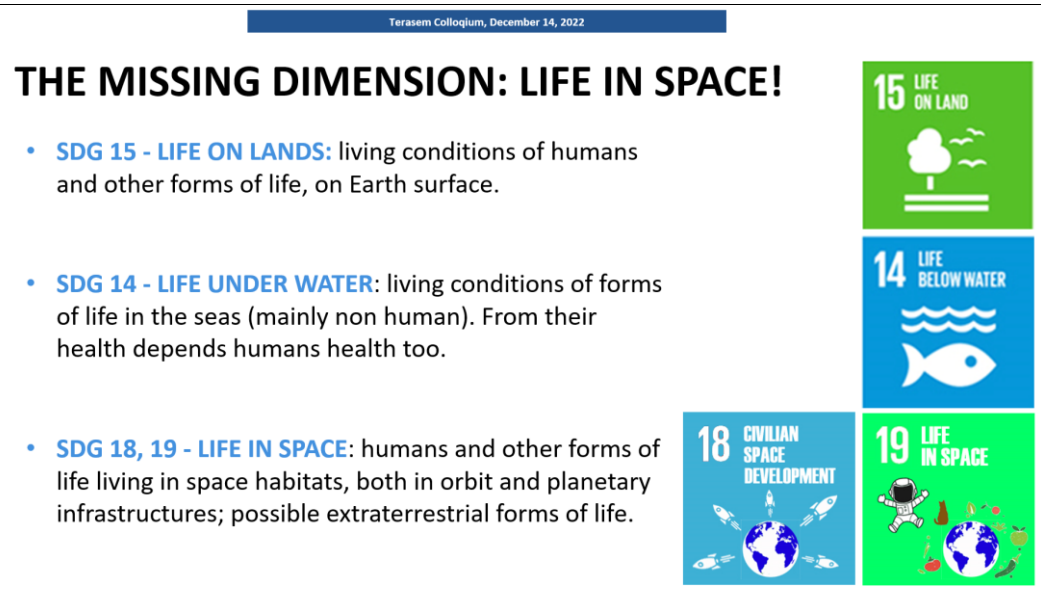

Figure 3. The missing dimension: life in space

Committee Objectives:

This committee's objectives:

- to actively participate in the discussion of SDGs real sustainability in all the institutional places, such as UN and UNOOSA, and big space organizations and education entities such as IAF, ISU, IAA
- to apply as permanent observer at COPUOS
- to apply to participate at ECOSOC
- to build a large alliance to support the proposal of adding the 18th SDG to the 2030 UN Agenda

Current Efforts & State of the Art (here shall be attached references to existing literature, polices, agreements and formal recommendation made by the specialists)

- organization of workshop / panels at UN General Assembly – September 2022 (done), September 2023 (in progress)
- **UNCOPUOS Guidelines for the Long-Term Sustainability of Outer Space Activities** https://www.unoosa.org/res/oosadoc/data/documents/2018/aac_1052018crp/aac_1052018crp_20_0_html/AC105_2018_CRP20E.pdf, published in 2019, to be extended
- **Space Supporting the Sustainable Development Goals**, HOW SPACE CAN BE USED IN SUPPORT OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT https://www.unoosa.org/oosa/en/ourwork/space4sdgs/index.html
- **Space Technology Contributes to the Sustainable Development Goals**, Danielle Wood, PhD Assistant Professor, MIT Media Lab Director, Space Enabled Research Group https://unctad.org/system/files/non-official-document/enc162018p02_Wood_en.pdf
- **ESA and the Sustainable Development Goals**, https://www.esa.int/Enabling_Support/Preparing_for_the_Future/Space_for_Earth/ESA_and_the_Sustainable_Development_Goals
- **SDG 18 – SPACE FOR ALL**, Outer Space on the UN Sustainable Development Agenda, https://sdgspace.org/

Development Plan(s), Agenda, Current Works, Projects, Meetings

- organization of workshop / panels at UN General Assembly – September 2022 (done), September 2023 (in progress

Partnerships

Can we partner with ESA, NASA and other agencies to promote the 18th SDG?

Can we connect with the IAA and AIAA?
Resources (A list of organizations and offices working on this topic). **Coming soon**