

The 18th Sustainable
Development Goal:
Recognizing the Imperative
Role of Space in our Future



Humanity is at Risk



The long-term survival of the human race is at risk as long as it is confined to a single planet Sooner or later, disasters such as an asteroid collision or nuclear war could wipe us all out. But once we spread into space and establish independent colonies, our future should be safe.

We Need Sustainable Development Goals

- Around 800 million people live in extreme poverty and suffer from hunger, with fragile and conflict-torn states experiencing the highest poverty rates
- Between 2008 and 2012, 144 million people were displaced from their homes by natural disasters, a number predicted to rise as the planet warms, bringing more extreme weather and rising seas
- Water scarcity affects 40 percent of the global population and is projected to increase.
- Gender inequality persists in spite of more representation for women in parliaments and more girls going to school.

17 Goals for “People and Planet”



Space is **A** “Major Driver”

Committee on the Peaceful
Uses of Outer Space
Legal Subcommittee
Fifty-seventh session
Vienna, 9–20 April 2018

Draft resolution entitled “Fiftieth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space: space as a driver of sustainable development”

[[OPTION 1 (paras. 1-3)]]

1. Notes with appreciation that the UNISPACE+50 process resulted in documents aimed at articulating a cross-cutting and strategic vision to strengthen international cooperation in the exploration and peaceful uses of outer space, in which space is seen as, inter alia, a major driver and contributor to the Sustainable Development Goals for the benefit of all countries;

[OPTION 2, paras.1-15]

1. Notes with appreciation that the preparatory process and the high-level segment of UNISPACE+50 resulted in documents aimed at articulating a comprehensive, inclusive and strategically-oriented vision to strengthen international cooperation in the exploration and peaceful uses of outer space, in which space is seen as a major driver and contributor to the Sustainable Development Goals for the benefit of all countries;

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Space is **THE** Major Driver

The National Space Society believes that the 17 Sustainable Development Goals that have been established by the international community through the United Nations cannot and will not be realized unless the international community supports, enables, embraces and promotes space exploration and utilization and the development of a space economy.



SDG 18: Sustainable Development of Space

18 SPACE ECONOMY



The National Space Society proposes that the 17 Sustainable Development Goals be expanded to include the sustainable development of space, namely the economic development of space, utilization of space based resources, and the goal of permanent human settlement of space as the 18th Sustainable Development Goal, a critical goal that will not only assure the accomplishment of the 17 SDG's but also prepare a solid foundation for humanity's future.

Remote Sensing Vital to SDGs

Remote Sensing satellites provide key data for monitoring land use, soil, snow cover, drought and crop development, as well as water cycles, air quality, forests and other aspects of the natural environment, and the epidemiology of infectious diseases, directly addressing:

- SDG 1 - Eliminate Poverty
- SDG 2 - Eliminate Hunger
- SDG 3 - Good Health and Well-Being
- SDG 6 - Clean Water and Sanitation
- SDG 7 - Affordable and Clean Energy
- SDG 11 - Sustainable Cities and Communities
- SDG 12 - Responsible Consumption and Production
- SDG 13 - Climate Action
- SDG 14 - Life Below Water
- SDG 15 - Life on Land



Telecommunications Technologies Vital to SDGs



- Satellite communications enables the sharing of information, web-conferencing and voice over internet protocols directly addressing:
 - SDG 3 - Good Health and Well-Being
 - SDG 4 - Quality Education
 - SDG 5 - Gender Equality
 - SDG 8 - Decent Work and Economic Growth
 - SDG 9 - Industry Innovation and Infrastructure
 - SDG 10- Reduced Inequalities

Space Activities Breed Cooperation Vital to SDGs

- Space offers unique opportunities for multilateral partnerships and collaborations and also is vital to monitoring treaty adherence, directly addressing:
 - SDG 16 - Peace and Justice, Strong Institutions
 - SDG 17 - Partnerships for the Goals



Developing Space Technologies Offer More

- The prospect of permanent human presence in space has led to design requirements for the harvest of ambient energy in space, recycling water and atmosphere, growing food staples in harsh and artificial conditions and applying principals of architecture and engineering design to adapt to the unforgiving of space.
- It forces humans to leverage limited resources to address human requirements.
- The principals of space exploration and utilization, as well as the development of space communities, can be applied to assure and accelerate achievement of the SDGs.

Developing Space Technologies and SDGs

- **SDG 1 - No Poverty**
 - Expanding our economy beyond our globe offers infinite opportunity in terms of jobs and economic development, and a very much richer world.
- **SDG 2 - No Hunger**
 - Controlled environment agriculture systems can feed everyone.
 - Producing hardier and more diverse seeds and plant stock are essential to preserving the heritage of evolutionary diversity.
- **SDG 3 - Good Health and Well-Being**
 - Living and working in space allows us to better understand human physiological and psychological requirements.



Developing Space Technologies and SDGs

- **SDG 4 - Quality Education**
 - Expanding to space builds new horizons for literally every discipline from archaeology to entertainment.
- **SDG 5 - Gender Equality**
 - Space confirms that the genders truly are equal. Women can perform the same economic tasks as men.
 - Just as important, studying osteoporosis and human reproduction and development in response to micro-gravity environments will help close the knowledge gap in related to women's health issues.

Developing Space Technologies and SDGs

- **SDG 6 - Clean Water and Sanitation**
 - Human communities in space will have to develop efficient bio-regenerative food production, water purification and waste processing protocols and processes that can also be used on Earth.
- **SDG 7 - Affordable and Clean Energy**
 - Utilize solar energy and minimize use of fossil fuels.
- **SDG 8 - Decent Work and Economic Growth**
 - Building a space economy and a space community will provide contributions and jobs to all sectors of a traditional Earth economy.

Developing Space Technologies and SDGs

- **SDG 9 - Innovative Industrial Infrastructure**
 - History has shown that technology developed for space can almost always be adapted to provide efficiencies on Earth (think Velcro). Moreover, space technology spin-offs add value on Earth.
 - We must also clean-up orbital debris and protect both our existing space economy, access to space and further space development.
- **SDG 10 - Reduced Inequalities**
 - Space resources cannot only meet humanity's requirements, but more fully and equitably address human potential.

Developing Space Technologies and SDGs

- **SDG 11 - Sustainable Cities and Communities**
 - Space settlement design and engineering standards can reduce the environmental footprint of cities on Earth.
- **SDG 12 - Responsible Production and Consumption**
 - The necessary sustainable use and recycling of resources which are essential for survival in space can also be applied on Earth.

Developing Space Technologies and SDGs

- **SDG 13 - Climate Action**
 - The large scale use of space resources, space materials, space energy and manufacturing in space will allow most human activities that create substantial amounts of pollution to be done in space rather than on the Earth. Thus allowing Earth to return to the nearly pollution free condition that was enjoyed before the industrial revolution
- **SDG 14 - Life Below Water**
 - Closed environment aquaponics system alternatives can reduce over-fished and stressed oceans and thereby help restore ocean ecosystem balances.
 - Advanced tele-robotics and AI can improve both our observation and understanding of the ocean world on Earth and ocean worlds in space.

Developing Space Technologies and SDGs

- **SDG 15 - Life on Land**
 - Moving people and production facilities off Earth will help preserve life on land. And of course, remote sensing capabilities provide the tools to observe, understand, monitor and protect life on land and our evolutionary heritage.
- **SDG 16 - Peace, Justice and Strong Institutions**
 - We are one species. We have been challenged many times on Earth. However, the challenges of space afford us best opportunity to unite with a common goal.
 - If we sow justice by respecting the International Declaration of Human Rights and provide strong institutions meeting human requirements we promote peaceful and sustainable human communities with civility.



Developing Space Technologies and SDGs

- **SDG 17 - Partnership for Goals**
 - In space, we are all representatives of humankind.
 - The challenges of space settlement and the use of space resources for the dramatic benefit of all humanity requires peaceful global collaboration.
 - Preservation of open access to space and protection of the existing space economy is a fundamental requirement for global space development supporting the fundamental principles of the Outer Space Treaty.

Our Future



But the Solution is Right in Front of Us

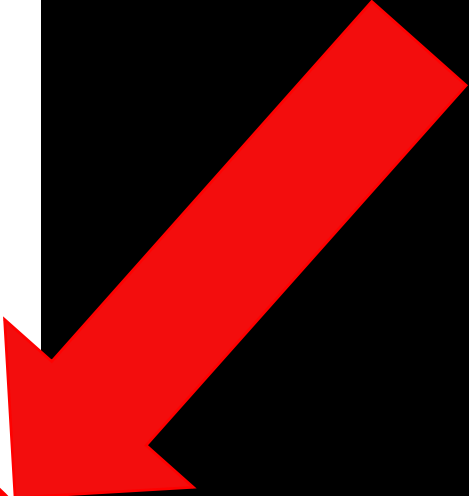
- The Mission and Vision of NSS is people living and working in space, the human settlement of space, and the use of space resources for the dramatic benefit of humanity.
- We hope you will consider elevating the exploration and utilization of space, the creation of communities in space, and the expansion of the Earth economy in space as a priority, if not for 2030, then as the starting point for humanity's next evolutionary framework.
- NSS believes that the implementation of this 18th SDG is a critical step that will enable the fulfillment of the first 17 SDGs on Earth and in space.



THE GLOBAL GOALS

For Sustainable Development

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL-BEING 	4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION 
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND 	16 PEACE AND JUSTICE STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	18 SPACE ECONOMY 



National Space Society

Thank You.

Al.anzaldua@nss.org

michelle@forallmoonkind.org

www.nss.org

