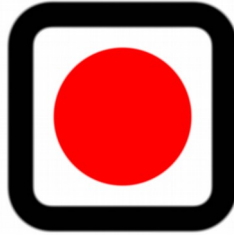


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Space Technologies and Sustainable Development Goals

Space technologies and data are fundamental for achieving the SDGs: they provide real-time, homogenous information from any location, including remote areas, upon which strategic policy making decisions can be based; and they are essential for monitoring progress against the SDGs.

Just to provide a few examples, through space technologies, countries can improve:

- resilience to disasters,
- increase agricultural output and profitability,
- fight the spread of diseases,
- foster innovation, education and research in science, technology, engineering and mathematics (STEM) fields, and expand opportunities for women in these fields,
- promote industrialization,
- productivity improvements through innovation and economic growth,
- achieve better water management,
- support clean energy transition,
- promote sustainable infrastructure and cities,
- analyse natural resources and ecosystems for sustainable consumption and production,
- monitor and devise strategic responses to climate change and the risks to life and biodiversity under water and on land,
- combat illegal trade and other criminal activities,
- foster peace and justice,
- and promote international cooperation and partnerships across nations.

UNOOSA Annual Report, Vienna 2018

Sustainable Development Goal 1 - No Poverty: End poverty in all its forms everywhere

- Forecast natural disasters and better coordinate subsequent aid
- Maximize the exploitation of natural resources
- Contribute to providing more efficient support to vulnerable people

In combination, space technologies can contribute to preventing more people from falling below the poverty line and help target specific support to those in need. An example of this is the development of precision agriculture and food security applications for monitoring the health of crops or providing early warnings for natural disasters.

As space technologies are a key asset contributing to the achievement of SDG 1, their contribution is linked to a subset (five out of a total of seven) of the SDG 1 targets, which are listed below:

1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day

1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions

1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions

Sustainable Development Goal 2 - Zero Hunger: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Space technologies are key enablers for increasing the productivity of agricultural cultivation through informed management processes, improving the efficiency of the utilization of existing assets as well as of natural and anthropogenic resources (including land, seeds, fertilizers, plant protection agents and water).

Contribution of space technologies related to SDG 2:

2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

Sustainable Development Goal 3 - Good Health and Well-being: Ensure healthy lives and promote well-being for all at all ages

Information derived from EO and meteorological satellites in combination with GIS and GNSS has increasingly been used to study disease epidemiology, enabling increased use of spatial analysis to identify the ecological, environmental and other factors, such as movements of population, that contribute to the spread of vector-borne diseases by locating “hotspots”, monitoring disease patterns and defining the areas that require disease-control planning.

Space not only plays a role in monitoring the quality of the air but also directly in reducing the emissions. Transport is one of the main sources of air pollution, for which evidence on direct effects on mortality as well as on respiratory and cardiovascular disease is firmly established. Use of satellite navigation systems in road vehicles can reduce journey times by more than 10 per cent and thus contribute to reducing emissions of harmful and polluting substances.

The targets where space can better contribute within SDG 3 are:

3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents

3.8 Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

Space helps monitor and track diseases and also environmental conditions related to global health.

Sustainable Development Goal 15 - Life on Land: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

The targets where space can better contribute within SDG 15 are:

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

UNOOSA European Global Navigation Satellite System and Copernicus: Supporting the Sustainable Development Goals BUILDING BLOCKS TOWARDS THE 2030 AGENDA, Vienna 2018