

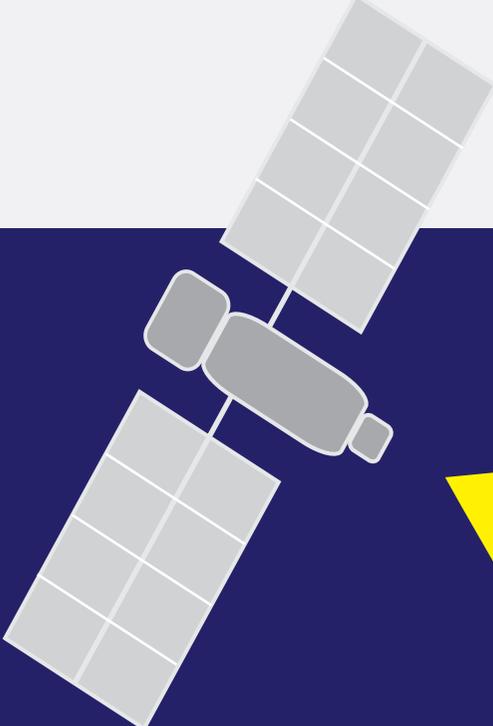
EO contribution to



THE GLOBAL GOALS

For Sustainable Development

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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



1 NO POVERTY



Target 1.4

By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance

EO contribution to achieving target

mapping of land use and developments, base mapping for land administration, assessment of compliance with land use regulations and property rights, infrastructure mapping (for market access and access to basic services)

Indicator 1.4.2

Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure

EO contribution to achieving target

mapping for verification of land tenure rights

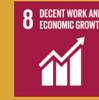
Target 1.5

By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

EO contribution to achieving target

risk assessment and simulation models / forecasting and early warning





2 ZERO HUNGER



Target 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

EO contribution to achieving target

agricultural knowledge and information systems, crop health and yield monitoring, market access, agricultural land rights, agricultural market information, site evaluation, tackling pest and diseases, fertilizer advice, crop calendars

Indicator 2.3.1

Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size

Monitoring of indicator with EO

parcel identification and crop monitoring

Target 2.4

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

EO contribution to achieving target

see 2.3 + drought early warning, agricultural insurance, market access and infrastructure analysis, climate adaptation scenarios

Indicator 2.4.1

Proportion of agricultural area under productive and sustainable agriculture

Monitoring of indicator with EO

land use / land cover mapping and monitoring





3 GOOD HEALTH AND WELL-BEING



Target 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

EO contribution to achieving target

early warning systems for vector-borne diseases

Indicator 3.3.3

Malaria incidence per 1,000 population

Indicator 3.3.5

Number of people requiring interventions against neglected tropical diseases

Target 3.6

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

EO contribution to achieving target

base mapping for the identification of roads and assessment of road conditions (paved, unpaved)

Target 3.8

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

EO contribution to achieving target

infrastructure and population density mapping to assess access to basic services (health facilities) disaggregated by population group; base map for planning of creation of health facilities

Target 3.9

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

EO contribution to achieving target

air quality and water quality monitoring systems; mapping of potentially dangerous infrastructure (waste management facilities, industry, mining, nuclear facilities, etc.)

Indicator 3.9.1

Mortality rate attributed to household and ambient air pollution

EO contribution to achieving target

air quality monitoring and early warning systems

Indicator 3.9.2

Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)

EO contribution to achieving target

surface water quality monitoring

DATA



HIGH

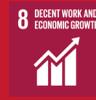


DANGER

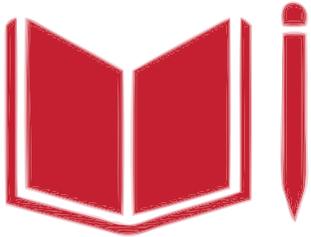


LOW





4 QUALITY EDUCATION



Target 4.2

By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

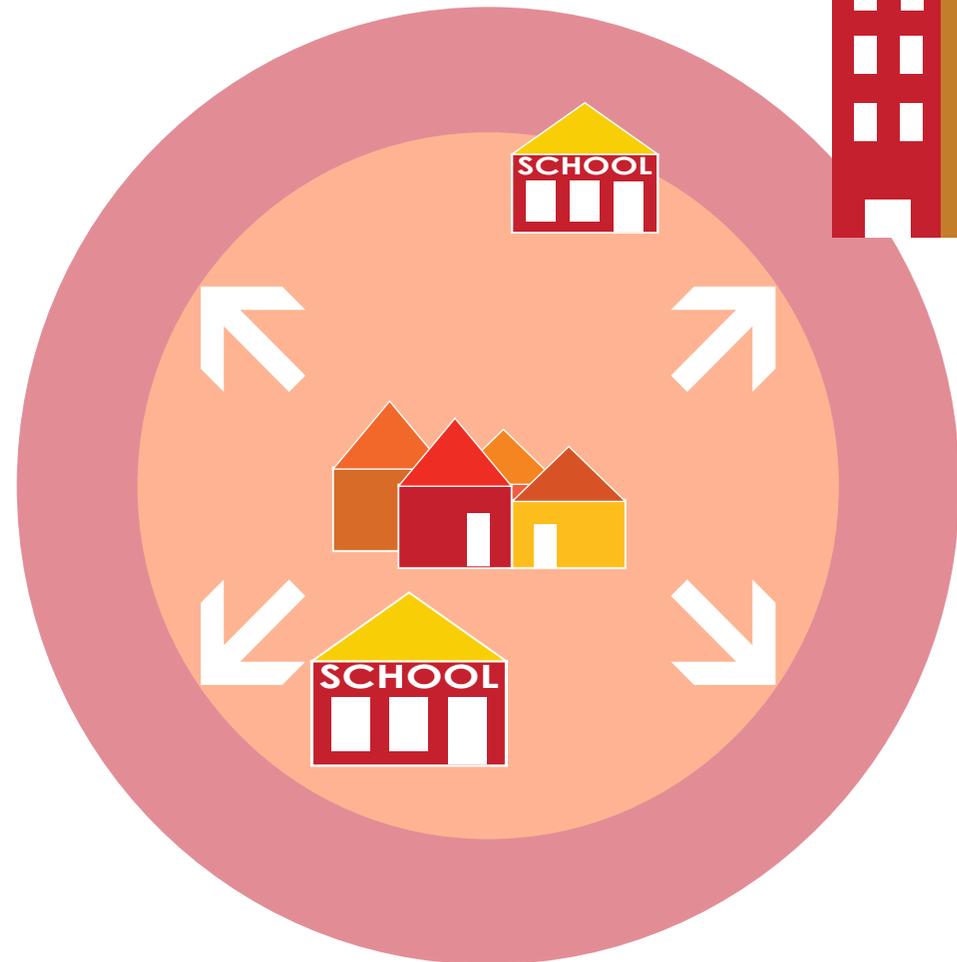
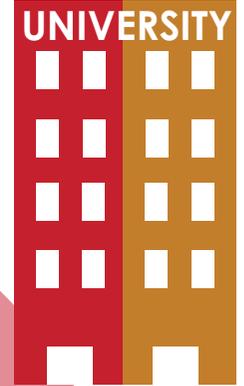
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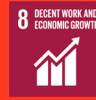
Target 4.3

By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

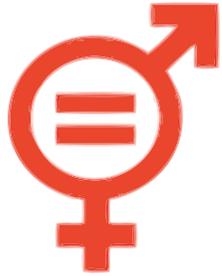
EO contribution to achieving targets

infrastructure and population density mapping to assess access to educational services (schools) disaggregated by population group; base map for planning of creation of schools





5 GENDER EQUALITY



Target 5.4

Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate

+

Target 5.6

Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

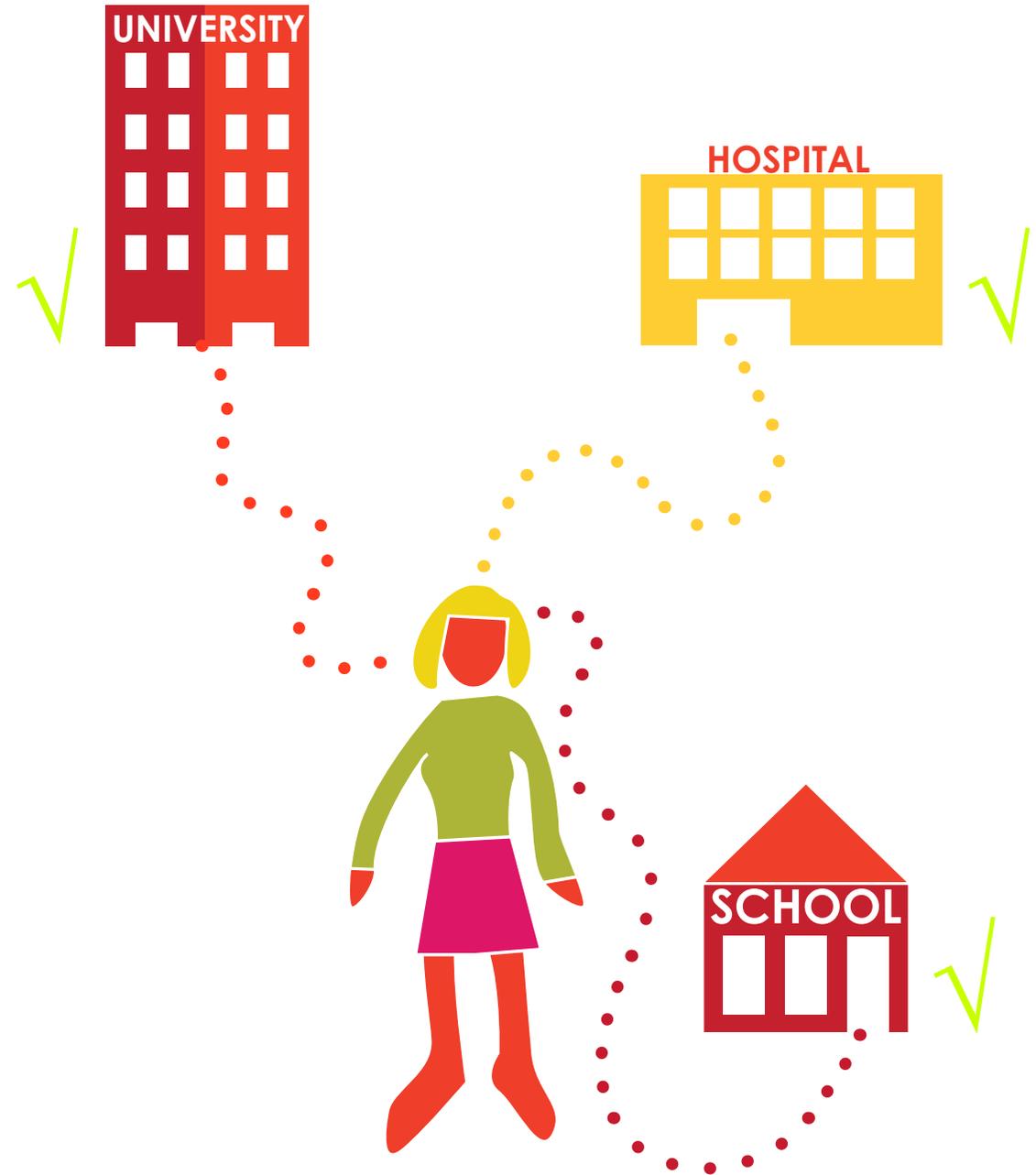
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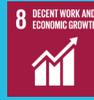
Target 5.a

Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws

EO contribution to achieving targets

assessment of access to health facilities, arable land, infrastructure, schools, etc. in terms of travel time (throughout the year)





6 CLEAN WATER AND SANITATION

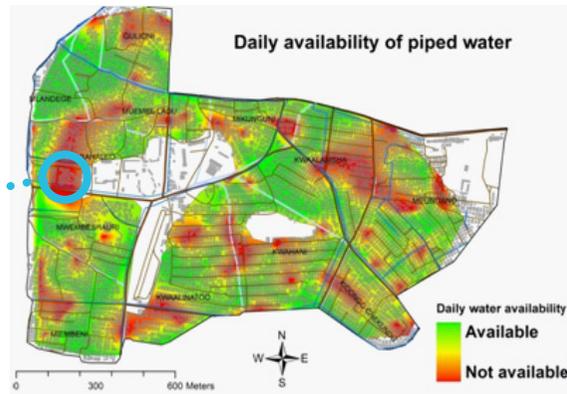


Target 6.1

By 2030, achieve universal and equitable access to safe and affordable drinking water for all

EO contribution to achieving target

assessment and monitoring of available water resources for drinking water



Target 6.2

By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

EO contribution to achieving target

assessment of proximity to and availability of drinking water, sewerage and drainage systems and wastewater treatment plants

Target 6.3

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

EO contribution to achieving target

water quality monitoring

Indicator 6.3.2

Proportion of bodies of water with good ambient water quality

Monitoring of indicator with EO

(surface) water resources monitoring and water quality monitoring

Target 6.4

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

Indicator 6.4.1

Change in water-use efficiency over time

Contribution to achieving target and monitoring of indicator with EO

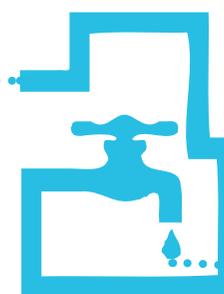
water resources assessment and monitoring; input for water accounting and water productivity assessments

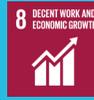
Indicator 6.4.2

Level of water stress: freshwater withdrawal as a proportion of available freshwater resources

Contribution to achieving target and monitoring of indicator with EO

water resources assessment and monitoring; input for water accounting and water productivity assessments





6 CLEAN WATER AND SANITATION



Target 6.5

By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

Indicator 6.5.1

Degree of integrated water resources management implementation (0-100)

Contribution to achieving target and monitoring of indicator with EO

water resources assessment and monitoring; input for water accounting and water productivity assessments

Target 6.6

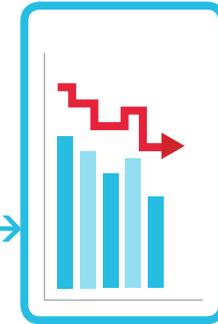
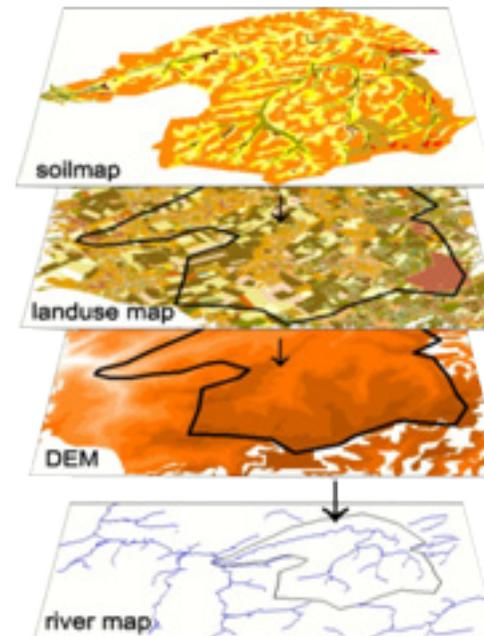
By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

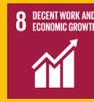
Indicator 6.6.1

Change in the extent of water-related ecosystems over time

Monitoring of indicator with EO

land use / land cover mapping and monitoring





7 AFFORDABLE AND CLEAN ENERGY



Target 7.1

By 2030, ensure universal access to affordable, reliable and modern energy services

EO contribution to achieving target

solar, wind, hydropower and biofuel potential assessment and monitoring of performance

Indicator 7.1.1

Proportion of population with access to electricity

Indicator 7.1.2

Proportion of population with primary reliance on clean fuels and technology

Target 7.2

By 2030, increase substantially the share of renewable energy in the global energy mix

EO contribution to achieving target

solar, wind, hydropower and biofuel potential assessment and monitoring of performance

Indicator 7.2.1

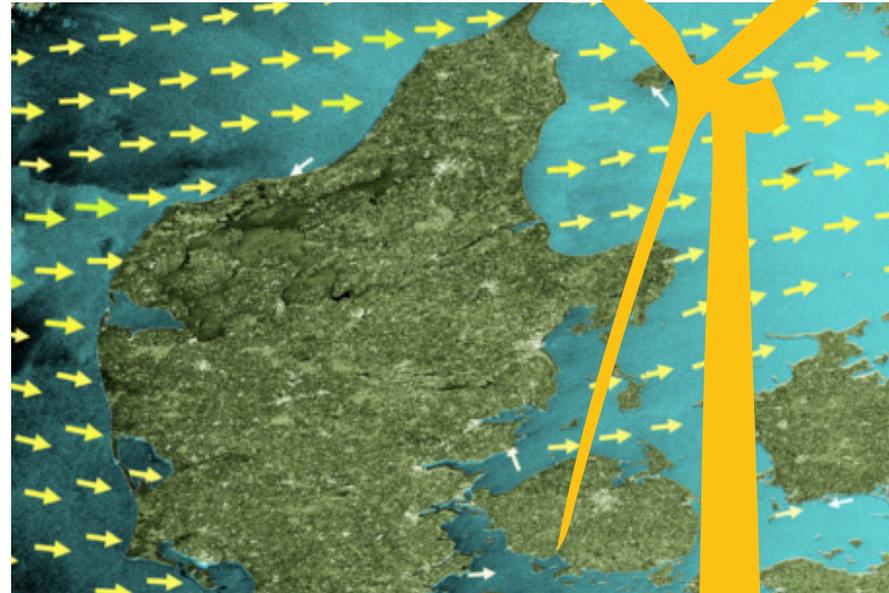
Renewable energy share in the total final energy consumption

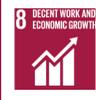
Target 7.b

By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

EO contribution to achieving target

mapping of energy utilities and access to electricity





8 DECENT WORK AND ECONOMIC GROWTH



Target 8.4

Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead

EO contribution to achieving target

mapping and monitoring environmental degradation and environmental impact of extractive industries

Indicator 8.4.1

Material footprint, material footprint per capita, and material footprint per GDP

Monitoring of indicator with EO

data input for footprint calculations (same as 12.2.1)



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

Indicator 9.1.1

Proportion of the rural population who live within 2 km of an all-season road

Contribution to achieving target and monitoring of indicator with EO

mapping, monitoring and analysis of rural settlements and roads



Target 9.4

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

EO contribution to achieving target

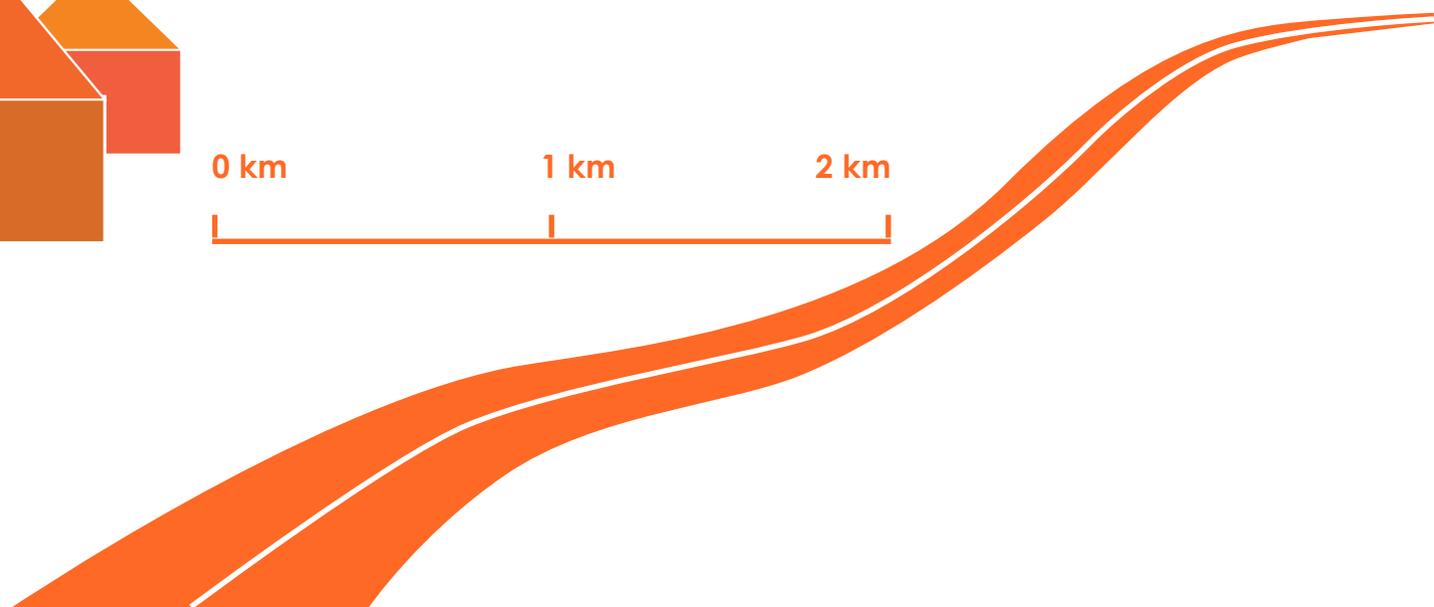
mapping and monitoring of infrastructure (projects) and vulnerability assessment of infrastructure

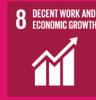
Indicator 9.4.1

CO² emission per unit of value added

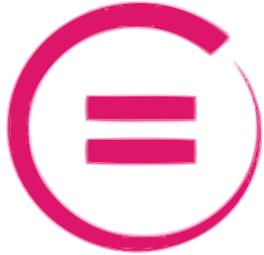
Monitoring of indicator with EO

measuring CO² in atmosphere and climate modelling





10 REDUCED INEQUALITIES



Target 10

Reduce inequality within and among countries

EO contribution to achieving target

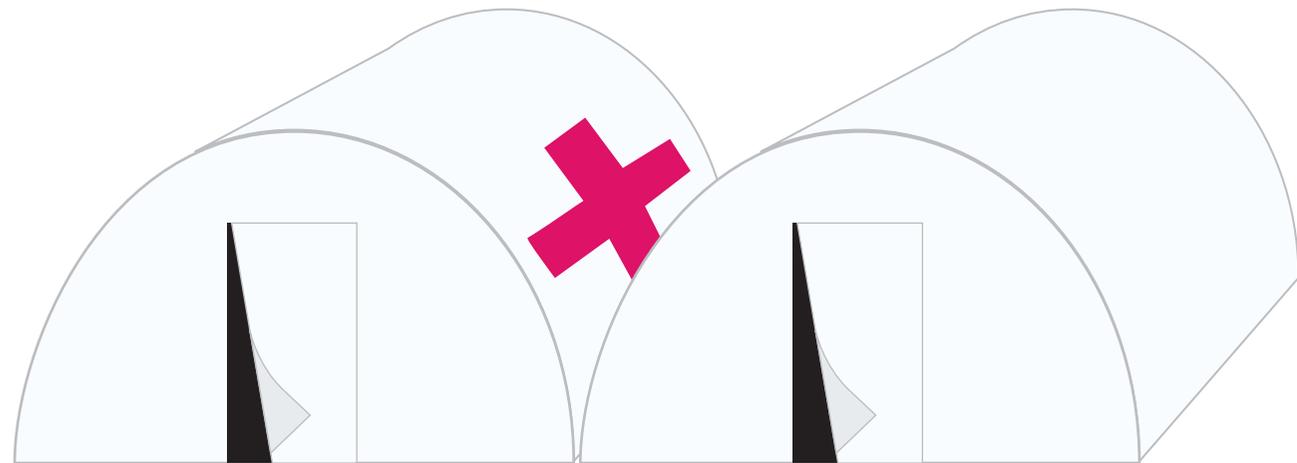
combination of actions for SDG-1 – 9 with emphasis on vulnerability

Target 10.7

Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies

EO contribution to achieving target

mapping and monitoring migration patterns (refugee camps, settlements)





11 SUSTAINABLE CITIES AND COMMUNITIES



Target 11.1

By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Indicator 11.1.1

Proportion of urban population living in slums, informal settlements or inadequate housing

Monitoring of indicator with EO

mapping and monitoring of slum extent and housing quality

Target 11.2

By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons



Target 11.3

By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

EO contribution to achieving target

assessment of sustainable urban planning through a combination of actions for 1.4, 1.5, 3.6, 3.8, 3.9, 4.2, 4.3, 5.4, 5.6, 7.b and 9.1

Indicator 11.3.1

Ratio of land consumption rate to population growth rate

Monitoring of indicator with EO

mapping and monitoring of urban sprawl and impervious surfaces; land use / land cover mapping and monitoring

Target 11.4

Strengthen efforts to protect and safeguard the world's cultural and natural heritage

EO contribution to achieving target

mapping and monitoring of cultural and natural heritage sites and identification of threats

Target 11.5

By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

EO contribution to achieving target

risk assessment and simulation models; forecasting and early warning; monitoring of disasters and damage assessment



11 SUSTAINABLE CITIES AND COMMUNITIES



Target 11.6

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

EO contribution to achieving target

mapping of waste sites and assessment of impact of urban expansion on the environment

Indicator 11.6.2

Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)

Monitoring of indicator with EO
air quality monitoring

Target 11.7

By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

Indicator 11.7.1

Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities

Monitoring of indicator with EO

urban monitoring and change detection, including green and public spaces

Target 11.a

Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

EO contribution to achieving target

mapping and monitoring of land use, land cover and urban processes

Target 11.c

Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

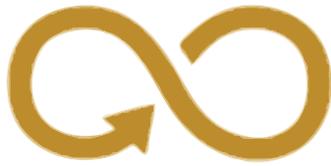
EO contribution to achieving target

mapping and monitoring of urban housing





12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Target 12.2

By 2030, achieve the sustainable management and efficient use of natural resources



Target 12.4

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment



Target 12.5

By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

EO contribution to achieving target

mapping and monitoring of use of natural resources (agriculture, water, forests, fishing, mining, energy, air, environment, etc.)

Indicator 12.2.1

Material footprint, material footprint per capita, and material footprint per GDP

EO contribution to achieving sub-goal

data input for footprint calculations

Target 12.8

By 2030, ensure that everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

EO contribution to achieving target

overarching purpose of EO in combination with mobile and web applications



13 CLIMATE ACTION



Target 13.1

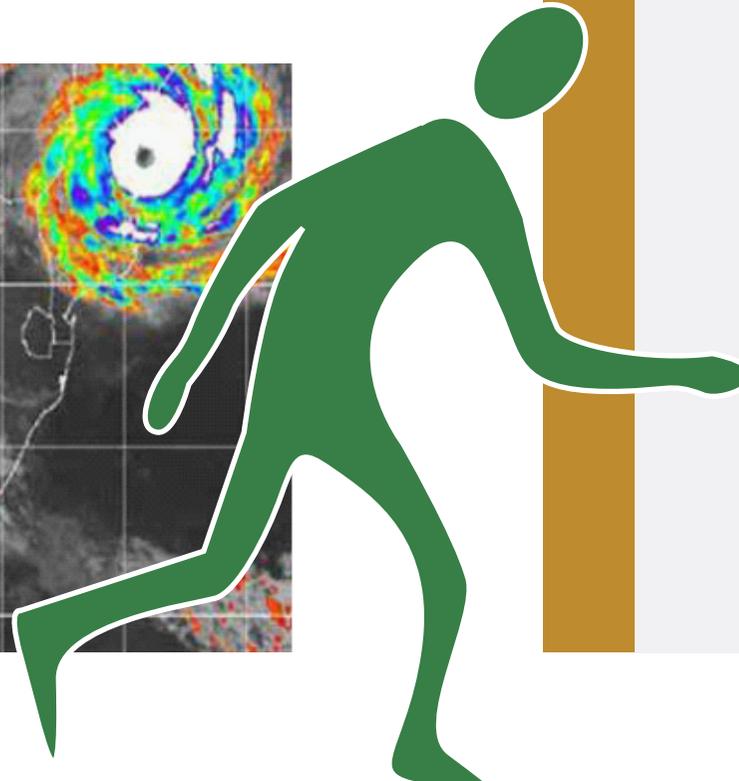
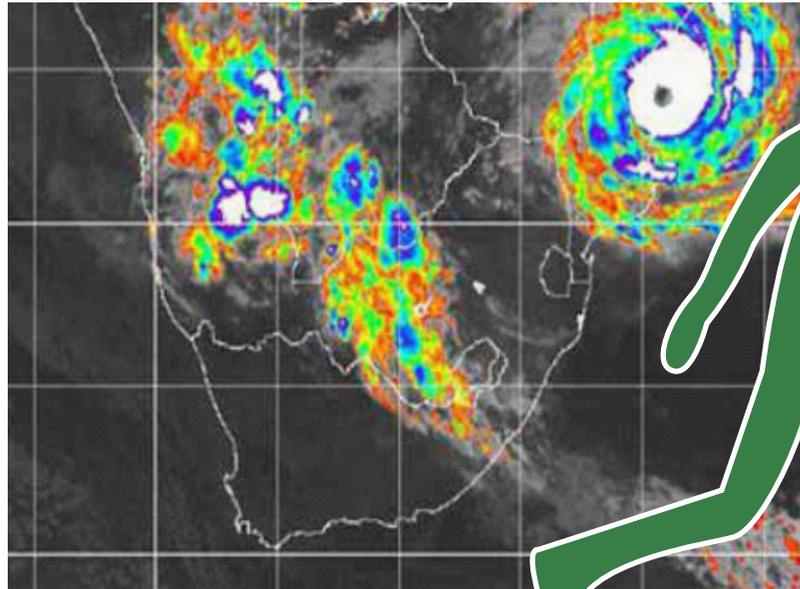
Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

EO contribution to achieving target

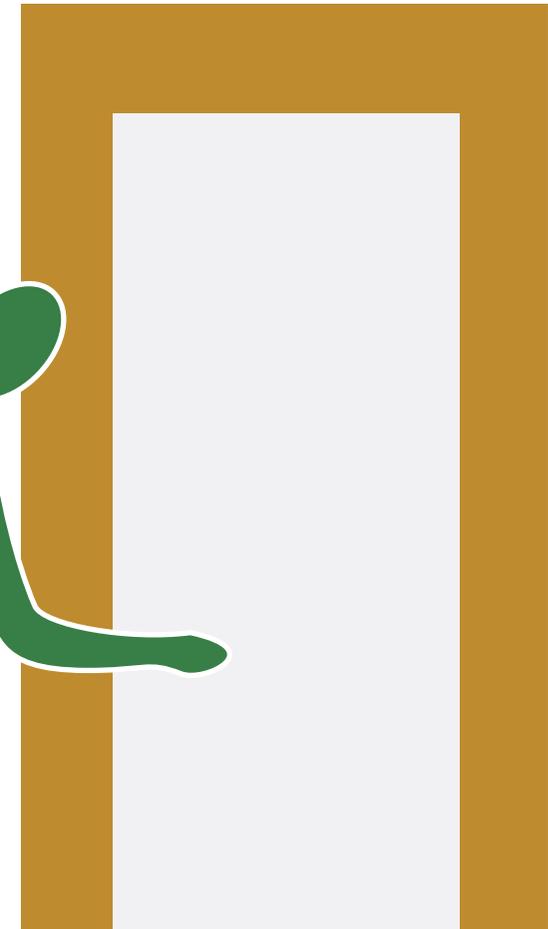
support to modelling for prevention, early warning and monitoring of disasters (storms, floods, earthquakes, volcanic eruptions, landslides, industrial disasters); mapping and monitoring of actions for rehabilitation and strengthening of resilience

Indicator 13.1.1

Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

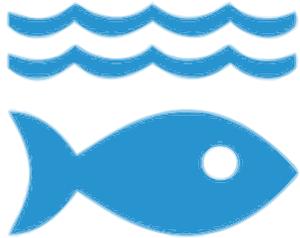


shelter





14 LIFE BELOW WATER



Target 14.1

By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Indicator 14.1.1

Index of coastal eutrophication and floating plastic debris density

Monitoring of indicator with EO
(surface) water quality monitoring



Target 14.2

By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Indicator 14.2.1

Proportion of national exclusive economic zones managed using ecosystem-based approaches

Contribution to achieving target and monitoring of indicator with EO

ecosystem mapping and monitoring; coastal land use / land cover mapping and monitoring

Target 14.3

Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

EO contribution to achieving target
monitoring of ocean acidity

Target 14.4

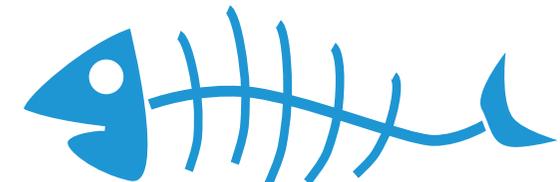
By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

EO contribution to achieving target
identification, monitoring and analysis of potential fishing zones & detection of harmful algal blooms

Indicator 14.4.1

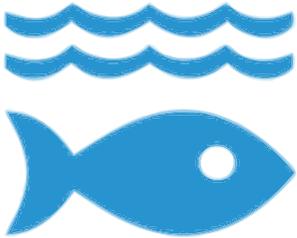
Proportion of fish stocks within biologically sustainable levels

**HARMFUL
ALGAL
BLOOMS**





14 LIFE BELOW WATER



Target 14.5

By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

EO contribution to achieving target

assessment of impact of economic activities on protected coastal and marine areas

Indicator 14.5.1

Coverage of protected areas in relation to marine areas

Monitoring of indicator with EO

mapping and monitoring of marine protected areas extent

Target 14.6

By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

EO contribution to achieving target

detection and tracking of fishing vessels

Indicator 14.6.1

Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing

Target 14.7

By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

EO contribution to achieving target

mapping and monitoring of tourism infrastructure, environmental impact and access to markets for fisheries and aquaculture; identification, monitoring and analysis of potential fishing zones & detection of harmful algal blooms



15 LIFE ON LAND



Target 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

EO contribution to achieving target

mapping and monitoring of ecosystems, including forests, wetlands and drylands and mapping and monitoring of phenomena that may affect these ecosystems (land degradation, urbanization, economic activity, disasters, etc.)

Indicator 15.1.1

Forest area as a proportion of total land area

Monitoring of indicator with EO

forest cover mapping and monitoring

Indicator 15.1.2

Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

Monitoring of indicator with EO

ecosystem and natural habitat mapping and monitoring

Target 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

Indicator 15.2.1

Progress towards sustainable forest management

Monitoring of indicator with EO

mapping and monitoring of forests, including forest degradation, rehabilitation and recovery

Target 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

Indicator 15.3.1

Proportion of land that is degraded over total land area

Monitoring of indicator with EO

land degradation monitoring; land use / land cover mapping and monitoring





15 LIFE ON LAND



Target 15.4

By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

Indicator 15.4.1

Coverage by protected areas of important sites for mountain biodiversity

Monitoring of indicator with EO
ecosystem mapping and monitoring

Indicator 15.4.2

Mountain Green Cover Index

Monitoring of indicator with EO
ecosystem mapping and monitoring

Target 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

Indicator 15.5.1

Red List Index

Contribution to achieving target and monitoring of indicator with EO
natural habitat and biodiversity mapping and monitoring

Target 15.9

By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

Indicator 15.9.1

Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020

Monitoring of indicator with EO
ecosystem, natural habitat and biodiversity mapping and monitoring





16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Target 16.1

Significantly reduce all forms of violence and related death rates everywhere

EO contribution to achieving target

monitoring of conflicts (bombing, military presence) and humanitarian efforts (refugee camps) from space

Target 16.2

Substantially reduce corruption and bribery in all their forms

EO contribution to achieving target

mapping and monitoring of properties and illegal constructions and activities (deforestation, mining, disturbance protected areas)

Target 16.6

Develop effective, accountable and transparent institutions at all levels

EO contribution to achieving target

mapping and monitoring of spatial dimension of public spending, such as infrastructure

Target 16.7

Ensure responsive, inclusive, participatory and representative decision-making at all levels

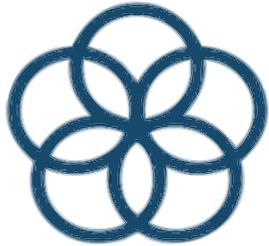
EO contribution to achieving target

overarching purpose of EO: increasing visibility of environmental and societal processes and monitoring of changes over time





17 PARTNERSHIPS FOR THE GOALS



Targets 17.1 - 17.5

Finance

Target 17.1

Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

EO contribution to achieving targets

mapping and monitoring of properties and illegal constructions and activities (deforestation, mining, disturbance protected areas) and spatial dimension of public spending, such as infrastructure

Targets 17.6 -17.8 & 17.9

Technology & capacity building

EO contribution to achieving targets

mapping and monitoring of effects of technology transfer, such as improved air quality, reduction environmental pollution, sustainable cities, environmental management, etc.

Targets 17.10 - 17.12

Trade

EO contribution to achieving targets

mapping and monitoring of agricultural production, industrial activity and transport characteristics

Targets 17.16 - 17.17

Multi-stakeholder partnerships

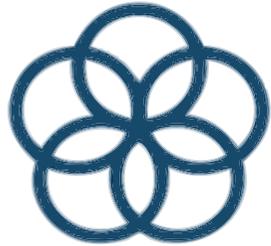
EO contribution to achieving targets

mapping and monitoring of transboundary issues and public-private issues (sustainable use of natural resources, environmental pollution, extractive industries, fisheries)





17 PARTNERSHIPS FOR THE GOALS



Target 17.18

By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

Indicator 17.18.1

Proportion of sustainable development indicators produced at the national level with full disaggregation when relevant to the target, in accordance with the Fundamental Principles of Official Statistics

Monitoring of indicator with EO

portfolio of EO applications that support natural wealth accounting (environmental accounting, ecosystem accounting and footprint calculations)

Target 17.19

By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Contribution of EO to achieving target

mapping and monitoring of infrastructure and economic, environmental and societal processes

