



Below, are some of the key terms that are being integrated into the SDGIO.

Access	Adverse	Adequate	Appropriate
Basic	Benefit	Efficient	Effective
Informal	Infrastructure	Integration	Promote
Resilience	Resource	Sustainable	Vulnerability

The semantics used in the SDGIO

Terms in the SDGIO are defined with respect to a core set of universal terms, such as *process*, *role*, and *entity*. These core terms are generalised for application to a variety of levels of granularity and specialised domains. For example, organisms, populations, ecosystems, and legal documents are all entities in the SDGIO. Below, is an illustration of the treatment of *risk*, *hazard*, *vulnerability*, and *resilience* in the SDGIO.

All entities have a set of innate vulnerabilities which are tied to their physical makeup. A *vulnerability* is the potential for an entity to undergo change, usually negative, as a result of being exposed to a *hazard*. A hazard, then, is an entity which can cause the realisation or manifestation of one or more vulnerabilities in another entity. *Risk* is seen as the potential for an entity to realise or manifest a vulnerability as a result of being exposed to one or more hazards.

Using logical relationships, the SDGIO seeks to clarify which entities are considered vulnerable to what set of hazards and thus what risks they are exposed to. Quantifications of entities such as risks can then be associated with the specific forms of risk affecting entities vulnerable to particular hazards. Estimations of the chance of a particular risk manifesting, say, risk of flooding, can be precisely represented then by distinguishing between the entities relevant to the risk and information about them.

From the semantics such as these, we can approach *resilience* as the capacity of an entity to recover its previous composition, qualities, and functionality following some process wherein one or more of that entity's vulnerabilities were realised.

Domains requiring further representation

The semantics behind some of the key terms used in the SDG indicator definitions will require clarification before they can be adopted; however, there are also entire *domains* which today have no ontological representation. For example, *Human wellbeing*; *Law and legal representation of entities, their rights and roles*; *Policy and political processes, documents*; *Social entities and processes*; and *Financial activities and economic representations of entities*. The input of domain specialists is being used to initialise the following ontologies that will be needed to comprehensively represent the semantics of the SDG process.

For further information on the SDG Interface Ontology

Please contact Jacqueline McGlade, Director, Division Early Warning and Assessment, UNEP (Jacqueline.mcglade@unep.org). Requests for terms to be included in the SDGIO should be sent to Lud Coppens (ludgarde.coppens@unep.org). The SDGIO technical environment can be seen at <https://github.com/SDG-InterfaceOntology/sdgio> and the connection to SDG relevant ontologies on the SDG portal at uneplive.unep.org/portal.

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

Support to try to convert from gray to green or simply refer to 5.1.a

1.4.2 Share of women among agricultural land owners by age and location

The most comprehensive information is available at the OECD
<http://stats.oecd.org/Index.aspx?DatasetCode=GID2>

As you can see from the extract of the GGEO indicator final report on gender disaggregated data, there are data on 121 countries

1. Land ownership: Data are available from the Demographic and Health Surveys Program (DHS Program), for selected countries with land ownership. The Living Standard Measurement Surveys: Integrated Surveys on Agriculture (LSMS-ISA) provides data for six countries in Africa: Ethiopia, Malawi, Niger, Nigeria, Tanzania, and Uganda, they are publically available here <http://go.worldbank.org/D55LN9XP40>. This data are, according to Doss et al (2013), not always comparable between countries due to difference in definitions of land ownership or in the possibility of recording joint ownership or not. The FAO has a [Gender and Land Rights Database](#), covering 47 countries globally with the number of women owning land and the total number of ownerships. Some of the data are dated as they are mostly base on agricultural censuses and these are conducted every 10 years.
2. Access to land: The [Gender, Institutions and Development Data Base](#) (GID), has data on women's access to land for 121 OECD countries in 2009 ().

The [Women's Empowerment in Agriculture Index](#) (WEAI) developed by the U.S. Agency for International Development (USAID), IFPRI, and Oxford Poverty & Human Development Initiative (OPHI) comprises two sub-indexes—one measures gender parity in empowerment within the household and the other the following five domains of empowerment. It has been tested in [Bangladesh 2011](#), [Guatemala 2011](#), and [Uganda 2011](#).

- a. Production: Input in productive decisions and autonomy in production; this could include inputs in irrigation
 - b. Resources: Access to and decision making power about productive resources and assets, such as land, agricultural inputs, or credit
 - c. Income: Control of use of income
 - d. Leadership: Group member, speaking in public, this could include Involvement in water users' associations and other social or economic groups
 - e. Time: Workload and Leisure, this could include Allocation of time to irrigated agriculture and domestic tasks
3. The IHSN catalogue has seven datasets that study agriculture and have gender as a variable; of these three are available online: the Third Integrated Household Survey 2010-2011, Malawi; Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey 2012, Rwanda; and, the Comprehensive Food Security and Vulnerability Analysis 2010, Sierra Leone.
 4. Gender Performance Indicator for Irrigation (GPII) The indicator was tested in nine case studies in Asia and Africa (Van Koppen, 2002), of these five case studies are readily available online.

5. Vecchione from the University of Sannio proposed in 2010 an index to measure sustainability in agriculture. The index named the Agricultural Sustainability Index (ASI) uses 18 agricultural indicators. The index was tested in one specific area in Italy for 1971 and 2001. Gender is covered as those employed in agriculture by gender. The data was obtained from official statistics ISTAT (<http://www.istat.it/en/>), and INEA (<http://www.inea.it/en/banchedati>).
6. Gender disaggregated data are available for the adoption of varieties of crops that are more resistant to drought in Ethiopia (Cavatassi et al 2011). The data is available online <http://tinyurl.com/ov3fygo>.
7. The World Bank used data from the [Living Standards Measurement Study-Integrated Surveys on Agriculture](#) to address gender gaps in agriculture for six countries in Africa (Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda). The data are gender-disaggregated for productivity, inputs (fertilizers, farm hired labour), returns on inputs (productivity from amount of fertilizers), access to markets, information and credit.
8. Forest ecosystems provide a wide range of resources. The use of these resources can vary. Data have been collected in Cameroun to show that opinions about the function of these resources were gender motivated (Etongo and Glover 2012); the data is available online <http://www.hindawi.com/journals/ijfr/2012/871068/> .
9. Hours worked in agricultural domains by sex is provided for years between 2000 and 2013 for 74 countries by the [ILO](#)
10. The Niger Census is available on the website of [HarvestChoice](#): Niger General Census of Agriculture and Livestock initiated the first generation of sex-disaggregated data looking at the gender dimension in the livestock sub-sector.

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

The global monitoring of ambient air quality (PM_{1.0}, 2.5,10; SO_x, NO_x, Ozone and VOCs) is being intensified in 2015-2016 with a view to cover all countries through the UNEP Air Quality Monitoring programme, in collaboration with the WMO, WB, WHO, US EPA and a range of private sector partners. The data flows will be calibrated with existing standards under CLRTAP, EU and national monitoring schema. (See AQ Monitoring Leaflet)

The global monitoring plan for persistent organic pollutants (POPs) under the Stockholm Convention on POPs can contribute to the data collection, as it provides a global harmonized organizational framework for the collection of comparable monitoring data on the presence of POPs from all regions, in order to identify changes in their concentrations over time, as well as on regional and global environmental transport. Monitoring activities under the global monitoring plan are focused on generating measurement data from core media: ambient air, human milk and human blood, and surface water for water-soluble POPs (perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride). The most relevant information for this indicator are the data on annual releases of specific chemicals to air, water, land.

The national reports of the Stockholm Convention from Parties also include various type of information, including information on measures to reduce or eliminate releases of specific POPs. Potential compiling entities: UNEP / BRS should be involved.

Target 5.a.1 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

5.a.1 Share of women among agricultural land owners by age and location

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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.

The proposed indicators 6.3.1 and 6.3.2 do not address all elements of the target 6.3, particularly "minimising release of hazardous chemicals and materials".

Please note:

National Reports under the Basel Convention provide information on accidents involving transboundary movements of hazardous and other wastes in regard to "eliminating dumping".

Global Monitoring Plan Monitoring under the Stockholm Convention on POPs generates measurement data from core media: ambient air, human milk and human blood, and surface water for water-soluble POPs (perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride), which also collects data on POPs in air, human milk, blood, and water).

Target 11.6: 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Supporting information to help transform Yellow to Green

UNEP can provide information for 11.6.1. on **disaggregation for e-waste and non-e-waste**

The proposed additional indicator 11.6.2 should be extended to include other ambient air pollutants, such as releases of POPs to the air through reporting under the Stockholm Convention

Target 16.1.: Significantly reduce all forms of violence and related death rates everywhere

Please note that data provided by OCHA, UNHCR, peacekeeping field missions, WMO, WHO, UNICEF and UNEP, show that **natural resources have also given rise to homicide cases.**

Target 16.3.: Promote rule of law at the national and international levels and ensure equal access to justice for all

Number and type of competent national institutions and percentage data on number of cases reported and impact in the last 12 months

Data for the additional indicator is available from the national criminal justice systems, UNODC.

Target 16.4: By 2030, significantly reduce illicit financial and arms flows, strengthen recovery and return of stolen assets and combat all forms of organized crime

Gray to yellow/green

Illegal sales of wildlife/poaching and illegal trade with chemicals, hazardous wastes etc.

Data from UNEP, UNODC, World Customs Organization, Interpol, and relevant MEAs Secretariats (CITES, Basel, Rotterdam, Stockholm Conventions, Green Custom Initiative, Montreal Protocol) through the national regular reporting and international cooperation.

Target 16.7.: Ensure responsive, inclusive, participatory and representative decision-making at all levels

UNEP's suggestion for additional indicator can be supported by additional comment: Data from the Legal Office of UN, Human Rights Council, UNDESA, UNDP, WB, UNEP and UN social and economic commissions might be available to measure the indicator.

Target 16.10.: Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements

"Existence and implementation of legal and institutional instruments and practical tools for ensuring public access to information and protect fundamental freedoms"

This expresses support for using internationally respected indexes as well as national reports (e.g. Environmental Democracy Index, Human Rights Index, etc. The suggested indicator should be disaggregated to the existence of legal international and national basis for implementation, concrete implementation measure including number of cases dealt, complaints of citizen, organizations/associations/groups. Indicator can also benefit from databases and regular reports to HR Council, UN Economic and Social Commissions, international agreements including MEAs, and UNDP etc.