

This document highlights the crucial roles that soils and land will play in achieving several (at least nine) of the UN Sustainable Development Goals (SDGs), and proposes options for monitoring, follow-up, and review of soil- and land-related targets. These proposals support the request of the UN Secretary-General's Synthesis Report on the post-2015 sustainable development agenda,¹ to “*establish effective modalities for multi-stakeholder cooperation in science for sustainable development*”; and further the vision (Para 149) for a “[...] *universal review process [that] could be initiated at the national level, and would inform the [...] regional and global level reviews [for which] discussions should be public, participatory, [...] based on [...] scientific findings and evidence-based evaluations*”. The Synthesis Report hence outlines ways for innovative monitoring and review, bringing together all available sources of knowledge.

It is fundamental that soils and land remain integrated within the final set of SDGs and related targets. The key roles that these resources play for sustainable development was highlighted in the outcome document of Rio+20: recognizing (Para 109) “*the importance of [...], enhancing access [...] to secure land tenure*”; resolving (Para 110) to “*increase sustainable agricultural production and productivity globally*”; agreeing (Para 206) to “*strive to achieve a land-degradation-neutral world*” [LDNW]; and resolving (Para 240) to “*give women equal rights with men to [...] ownership and control over land*”.² Furthermore, 2015 was declared by the 68th UN General Assembly as the International Year of Soils.³ The following sections address the need for an integrated approach to implementation of the SDGs; for the monitoring of appropriate sustainable land management and land governance indicators; and for national multi-stakeholder initiatives for soil- and land-monitoring, and accountability.

¹ Para 123 – *The Road to Dignity by 2030*

² *The Future We Want*, A/RES/66/288

³ A/RES/68/232

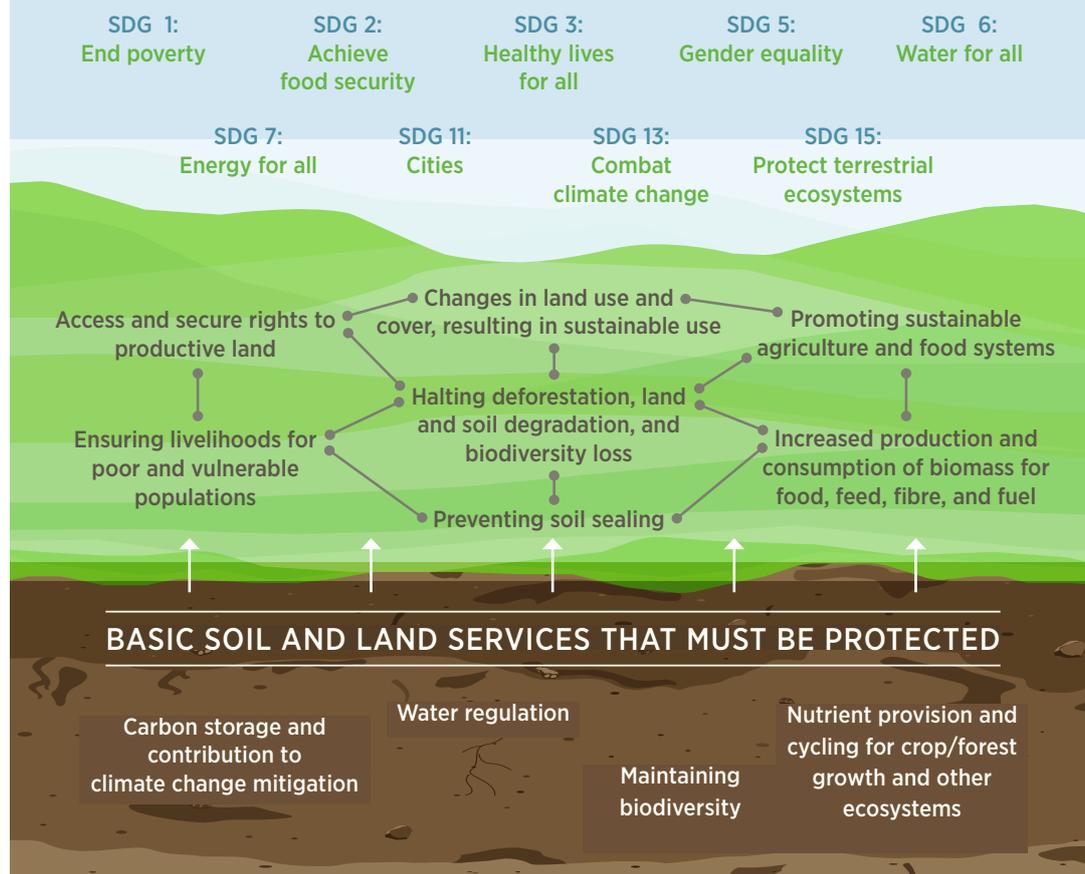
Soils and land play a foundational role throughout the SDGs

Links to soil and land resources can be found throughout the SDGs. Achieving the agenda as a package – particularly the goals and targets related to poverty eradication, food security, health, gender, water, energy, cities, climate change, and the protection of terrestrial ecosystems – will depend greatly on soil and land resources. Soils and land provide the basis for more than 95% of the food produced in the world and support the livelihoods of agricultural workers (one in three of all workers, and more than two-thirds of the entire workforce of Sub-Saharan Africa). In addition, soils hold one of the largest carbon pools on Earth and host a large pool of biodiversity. These resources are scarce and are also in jeopardy. Nearly one-quarter (24%) of the world's land area is affected by degradation, thereby impacting 1.5 billion people worldwide. We are losing 24 billion tonnes of topsoil every year to wind and water erosion. Due to global demographic changes, cropland per capita has fallen by more than half since 1960. Soil and land degradation, and poor soil fertility in particular, is widely accepted as the most critical factor in limiting agricultural production in Sub-Saharan Africa.⁴

As increasing – and sometimes competing – demands continue to be placed on soil and land resources, there are concerns about their future sustainability. The following graphic shows the inclusion of soils and land in the proposed SDGs. It examines the goals to which soil and land resources will contribute, thereby indicating where increased pressure can be expected. The graphic further depicts which fundamental soil and land services must be guaranteed to ensure that these resources can support delivery of the SDGs.

⁴ International assessment of agricultural knowledge, science, and technology for development (IAASTD): Sub-Saharan Africa (SSA) report. p. 109

SOILS AND LAND PLAY A FUNDAMENTAL AND CROSS-CUTTING ROLE IN ACHIEVING THE SDGs*



*Sustainable Development Goals

Source: IASS

Towards an integrated approach for governance and use of soils and land in the SDGs

We must move beyond silos in the post-2015 development agenda. Soil and land resources underpin the achievement of multiple goals and targets. This role presents a great challenge. There is a need to balance increasing pressures with the protection of these resources, and to take measures to protect the rights of the most vulnerable who depend on them. At the outset, it might seem that soil and land resources will be protected by default, through the achievement of SDGs related to food security or ecosystem conservation. However, as a whole, the SDGs will place increasing – and at times competing – demands on soils and land. An example

is the demand for food and energy: SDG 2 calls for ensuring access to sufficient food for all, and for doubling the agricultural productivity of small-scale food producers, while SDG 7 calls for substantially increasing the share of renewable energy, which includes biomass, in the global energy mix. At the same time, ecosystems and the quality of their soils and land need to be maintained and even restored or improved, as is the case for targets on land degradation, water quality, and restoration of mountain ecosystems (SDGs 2.4, 3.9, 6.6, 15.3, and 14.4, amongst others). To ensure that progress on some goals does not limit or challenge the achievement of others, an integrated approach that considers and analyses the combined impacts on soil and land resources is necessary.

In the process of meeting goals for economic growth, food security, cities, and energy, the protection of terrestrial ecosystems and the quality of soils need to be ensured and maintained. Equally, socio-economic and governance aspects of soil and land degradation must be addressed. This requires pro-poor and gender-sensitive approaches that work in favour of poor populations and marginalized groups, including indigenous peoples. Responsible and equitable land governance is crucial to that end. In many regions, responsible land governance means emphasizing the commons, in particular.⁵

We propose an integrated approach to implement the post-2015 development agenda in order to identify potential synergies and manage competing demands. However, such an approach will only be effective when accompanied by participatory governance instruments, and by effective monitoring and accountability mechanisms that ensure national ownership.

A coupled approach for monitoring, follow-up, and review

Ensuring the successful implementation of the post-2015 development agenda will depend on robust monitoring, follow-up, and review mechanisms. The implementation of the SDGs for soils and land needs to take place in an integrated manner that reflects the complexity of their contributions to sustainable development and the need to protect these resources.

Measuring progress on soils and land will be an important and challenging task. The need for soil and land indicators has been raised in different platforms, but there is a lack of consensus within the scientific community on definitions and reliable measurements. The definition of land governance and tenure indicators has been far less problematic, and we therefore fully support the Global Land Indicators Initiative's short list of indicators on:

1. Perceived tenure security	Percentage of women and men, communities, and businesses that perceive that their land resource and property rights are recognized and protected.
2. Secure land rights	Percentage of women and men, indigenous peoples, and local communities and businesses with legally recognized evidence of tenure.
3. Equal rights of women and men	Extent to which the legal framework provides women and men equal rights to land resources and property.
4. Legal recognition of a continuum of land rights	Extent to which the legal framework recognizes and protects legitimate land rights and uses, derived through a plurality of tenure regimes.

Source: GLII proposed indicators short list.

⁵ Action Aid International, Biovision, Forest Peoples Program, et al. (2015): Secure and Equitable Land Rights in the Post-2015 Agenda. A key issue in the future we want

To contribute to the process of agreeing on global soil and land management indicators, and under the umbrella of the Global Land Indicators Initiative, the European Environment Agency and the Institute for Advanced Sustainability Studies invited a group of experts on remote sensing and field monitoring to discuss globally relevant indicators on soil and land quality, which are presented below.

Given the potential trade-offs inherent in the SDGs regarding the sustainable use of soil and land resources alluded to above, the proposed indicators need to be accompanied by accountability mechanisms at the national and local levels. This is best accomplished by involving multiple stakeholders who can provide an overview of the protection of soil and land resources while recognizing and drawing attention to unsustainable trends or practices. At the regional and global levels, coordination should take place with current initiatives contributing to the monitoring of soil and land resources, such as the Voluntary Guidelines on the Responsible Governance of Tenure of Land and the United Nations Economic Commission for Africa's Land Policy Initiative.

a) Soil and land indicators

The task of defining soil and land indicators has occupied the scientific community for the past two decades, and finding consensus on appropriate types of indicators remains a challenge. This is true in many areas of sustainable development, as evidenced by the search for global indicators for the post-2015 development agenda by the United Nations Statistical Commission (UNSC).

Existing assessments and studies already provide vast amounts of information on the magnitude of soil and land degradation. At the same time, there is a general understanding that these assessments are outdated and that there is a need for standardized monitoring systems around the world. Forthcoming reports will contribute to this need. These include the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' thematic assessment of land degradation and restoration, and the Intergovernmental Technical Panel on Soils' report on the status of world soil resources.

The following global indicators build upon the work by the UNCCD secretariat to explore the development of common land indicators across the Rio Conventions (UNCCD, CBD, and UNFCCC).⁶ The indicators follow a tiered approach; they are measurable and essential in capturing a minimum of globally comparable information on soil and land. However, even in combination, they do not comprehensively address all quantitative and qualitative aspects of soils and land. Therefore, these indicators should be employed within the context of broader monitoring and review strategies. Complementary indicators at both the national and sub-national scales, that monitor issues relevant to specific national contexts, are crucial. Countries should validate default global data via data sourced nationally and locally. In addition, the monitoring of these global indicators needs to be accompanied by local monitoring and accountability initiatives that include a wide range of stakeholders (see the following section). Linking global data to (sub-) national data would thus blend a top-down with a bottom-up approach.

⁶ UNCCD United Nations Convention to Combat Desertification; CBD United Nations Convention on Biological Diversity; UNFCCC United Nations Framework Convention on Climate Change.

Proposed indicator	Description	Measurement	Link to relevant global initiatives (Annex I)	Associated SDGs ⁷
Land cover/land use change	Land cover/land use serves as an 'umbrella indicator' that allows stratification/disaggregation of land productivity and soil organic carbon indicators. Land cover classes (e.g. forestry, agriculture, urban) will vary in importance depending on the context. Changes in land cover/land use give a first indication of the loss, degradation, or restoration of land and soil quality.	Proportion of different land cover/land use classes according to a globally accepted framework (e.g. FAO Land Cover Classification System – LCCS). The indicator requires geo-spatial mapping of land cover/land use classes, using comparable methodologies at regular time intervals. Harmonized data are available at global and national scales.	EC, EEA, FAO's LCCS, LQC & LUC, GBEP, GEF through land degradation assessment, GOFC-GOLD, SDSN, UNCCD, UN-HABITAT, WB's LGAF, IIASA & IFPRI	Proposed SDGs 6, 11, 13, 15
Land productivity change	Land productivity addresses the net primary production per unit of area and time. Land productivity reflects the overall quality of land and soil as a result of climatic conditions and resource use/management. Changes in land productivity, interpreted together with additional data, may give an indication of the loss, degradation, or restoration of land productivity and soil quality.	The indicator requires a long-term time series of land productivity measures in high spatial resolution, best addressed by Earth-Observation-approximated net primary productivity (NPP). There are established methodologies for calculating NPP from remotely sensed data. Global data for reference years are readily available.	EC Copernicus Programme data, EC-JRC data sets, FAO land suitability criteria & crop types and yields, UNCCD, WB	Proposed SDGs 1, 2, 6, 7, 13, 15
Soil organic carbon change	Soil organic carbon is relevant to estimate carbon fluxes and can be an important indicator of overall soil quality.	Soil organic carbon (C) can be estimated as a stock (expressed as mass per unit area, e.g. g C/ha) or as content (e.g. % or g C/100 g soil) for a reference depth. The indicator requires geo-spatial mapping of soil organic carbon over a reference depth, using comparable methodologies at regular time intervals. There are established methodologies to model soil organic carbon. Global modelling outputs of soil organic carbon are available for reference years.	FAO agro-environmental indicators, FAO-UNESCO Soil Map of the World, GBEP	Proposed SDGs 13, 15

Source: outcome document GLII-EEA-IASS expert workshop on indicators for sustainable land management.

⁷ **Proposed SDG 1.** 'End poverty in all its forms everywhere'

Proposed SDG 2. 'End hunger, achieve food security and improved nutrition, and promote sustainable agriculture'

Proposed SDG 6. 'Ensure availability and sustainable management of water and sanitation for all'

Proposed SDG 7. 'Ensure access to affordable, reliable, sustainable, and modern energy for all'

Proposed SDG 11. 'Make cities and human settlements inclusive, safe, resilient, and sustainable'

Proposed SDG 13. 'Take urgent action to combat climate change and its impacts'

Proposed SDG 15. 'Protect, restore, and promote sustainable use of terrestrial ecosystems; sustainably manage forests; combat desertification; and halt and reverse land degradation and halt biodiversity loss'

b) National multi-stakeholder initiatives for soil and land monitoring and accountability

At the global level, the UN High-Level Political Forum on Sustainable Development (HLPF) is expected to “*follow up on the implementation of sustainable development*” (Para 84 of A/RES/66/288: The Future We Want). The global level, however, needs to be linked to and be based on monitoring at the regional and national levels. The national level, as highlighted by the UN Secretary General’s report on the post-2015 development agenda, “*should be the most significant*” since it is the “*closest to the people*”.⁸

Building on the considerations above, a national participatory monitoring and accountability approach should be a central feature of the post-2015 development agenda. This approach is in line with the voluntary and state-led follow-up and review that will characterize the post-2015 development agenda. Given the potential for trade-offs among the SDGs, such a participatory process is necessary to identify synergies and enable debates on the priorities of soil and land use in the course of implementing the post-2015 agenda. National stakeholders would be able to have an overview of the use of soil and land resources and raise alerts for unsustainable trends or practices. This can, in turn, lead to preventative and proactive approaches, help find synergies, and manage trade-offs. Such an approach to monitoring goes beyond reporting on indicators. By including a dialogue on the state of soil and land resources, and by offering a platform to discuss potential trade-offs, this approach would also include a strong accountability component. Accountability in this context refers primarily to the responsibility and obligation of national governments to justifying decision making concerning soil and land use, and holding actors accountable for unsustainable actions.

The proposed national multi-stakeholder initiatives for soil and land monitoring and accountability can also empower people to articulate their priorities to their national governments. The empowering effects of multiple-stakeholder and rights-holder platforms might assume particular importance in situations where current mechanisms for soil and land governance do not sufficiently address the needs of poor and vulnerable groups.

We see national governments taking the lead in establishing national multi-stakeholder initiatives for soil and land monitoring and accountability, within the context of a renewed global partnership for development.⁹ Such initiatives should be based, as much as possible, on existing fora, and on existing experiences with this type of approach. There are established global review mechanisms that include a multi-stakeholder review processes. One example is the national-level consultation process conducted ahead of countries’ submissions of “State Under Review” reports to the UN Human Rights Council (UNHRC).

These initiatives could be developed via a three-stage approach:

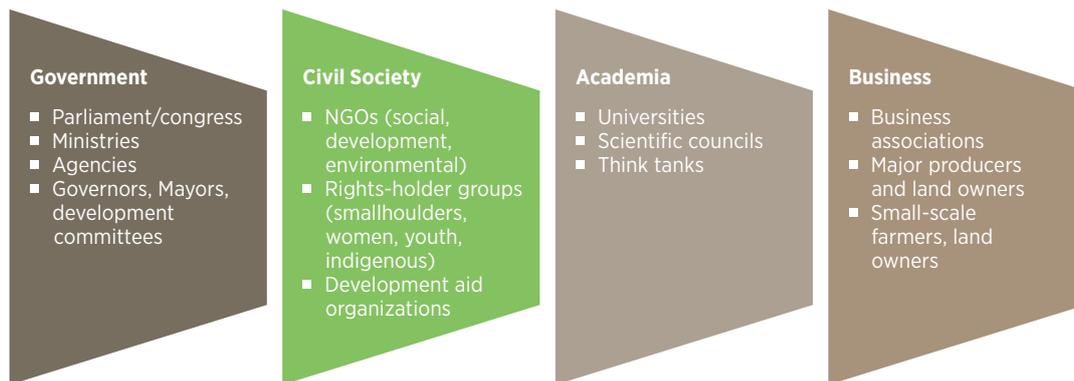
1. Establishing or strengthening multi-stakeholder dialogue platforms that are inclusive and offer perspectives from different actors (i.e. government, civil society, academia, business) and legitimate rights-holders in order to discuss the likely impacts of the SDGs on soil and land resources and define national priorities to address possible trade-offs.
2. The multi-stakeholder dialogue platforms (referred to under phase 1) develop strategies to monitor and review the state of soil and land resources (also taking into account socio-economic considerations). This might also imply identifying suitable indicators to complement global indicators, based on national capacities and priorities (as described above). Furthermore, an awareness and communication strategy could be developed to engage the wider population in this process.

⁸ Para 149.i – *The Road to Dignity by 2030*

⁹ Report of the UN System Task Team on the Post-2015 UN Development Agenda: A Renewed Global Partnership for Development

3. Periodic reporting by governments within these platforms, on progress made regarding soils and land, and review by stakeholder groups. National governments then feed these reports into the regional and global review mechanisms.

Potential stakeholders that might be involved in these initiatives include:



Global Soil Week 2015 (www.globalsoilweek.org) will discuss possible options to monitor and review soil- and land degradation, and to develop a common position among the soils and land community

The authors of this document look forward to discussing this proposal with stakeholders at all levels in support of the ongoing process to agree the post-2015 development agenda. The aim of sharing this proposal is to bring together the soil and land communities, to facilitate collaboration amongst current initiatives to prioritize soil and land resources within the global sustainable development agenda, and identify effective strategies to bring the global agenda to the field. Stakeholders from around the world will come together at the third Global Soil Week “*Soils. The Substance of Transformation?*” (Berlin, 19 – 23 April 2015) to further discuss this proposal, which will be presented and discussed within the framework of the post-2015 development agenda process in New York at a High-Level Event titled “*Follow-Up and Review Mechanisms for Natural Resource Management and Governance to Achieve the Sustainable Development Goals*” (12 – 13 May 2015).

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Annex I

Organizations and initiatives to which the proposed indicators are linked:

EC	European Commission (Copernicus – The European Earth Observation Programme)
EC-JRC	European Commission’s Joint Research Centre
EEA	European Environment Agency
FAO	Food and Agriculture Organization of the United Nations (LCCS – Land Cover Classification System, LQC – Land Quality Control Data, LUC – Land Use Change)
FAO-UNESCO	United Nations Educational, Scientific, and Cultural Organization
GBEP	Global Bioenergy Partnership
GEF	Global Environment Facility
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
IFPRI	International Food Policy Research Institute
IIASA	International Institute for Applied Systems Analysis (New global cropland map)
SDSN	Sustainable Development Solutions Network
UNCCD	United Nations Convention to Combat Desertification
UN-Habitat	United Nations Human Settlements Programme
WB	World Bank (LGAF – Land Governance Assessment Framework)

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