

Policy Brief

SSRP BRIEF #1 JULY 2018

Interactions among the Sustainable Development Goals ... and why they are important



OVERVIEW

The UN Sustainable Development Goals (SDGs) are a comprehensive, internationally agreed-upon set of objectives aiming to vastly improve economic, social and planetary well-being. How exactly to achieve these goals is now a point of discussion at many fora around the world. At one such forum, a Wilton Park Roundtable, an international group of stakeholders and experts found the efficiency of implementation to be a central issue. This efficiency in turn, is, related to the fact that the goals are all interconnected: In some cases steps towards achieving one goal may hinder the achievement of one or more other goals, leading to unintended “trade-offs”, or inefficiencies in implementation. But at least as often, actions towards a particular goal can have a positive influence on other goals, setting up beneficial “synergies” among the SDGs. Actions that take advantage of these synergies are key to implementing them efficiently because many different goals can be achieved at the same time and fewer resources are needed to achieve the whole set of goals. Saving resources would be a major payoff to countries confronted with the high costs of implementing the SDGs. The challenge now is to sort through the large number of possible interactions among SDGs in order to uncover and exploit the most important synergies while minimising the effects of trade-offs. Much can be done to achieve this at all levels, from local to global, including raising awareness about SDG interactions, reorienting investments, and reforming governance.

KEY FINDINGS

- Governments and institutions are gearing up to implement the UN Sustainable Development Goals (SDGs), and an increasingly important issue is how to implement them efficiently.
- A key to efficient implementation is recognising that the goals are interconnected; taking action to achieve one is likely to affect one or more others. It follows that efficiencies can be gained by exploiting the positive interlinkages (“synergies”) and minimising the negative ones (“trade-offs”). Such an integrated approach will save resources and be an attractive option for governments looking to reduce the high costs of SDG implementation.
- The number of interactions among goals is very large and they differ in importance at different scales. For this reason, special efforts are needed, including a major international initiative, to uncover the most important trade-offs and synergies, and identify the most promising actions to capitalise on synergies.
- Other important steps for taking advantage of synergies are: setting up “learning platforms” to exchange experience; promoting research to better understand interlinkages; channelling financial investments into innovative strategies and infrastructure; and introducing governance reforms that lower sectoral barriers in government.

KEY CHALLENGES

World leaders from 193 countries took a crucial step towards a more positive future when they agreed to the Sustainable Development Goals (SDGs) in 2015. These goals capture some of society's greatest aspirations – a healthy planet, sustainable livelihoods, and affordable resources for all. In March 2018, a distinguished group of stakeholders and experts from around the world came together to discuss the next steps in implementing the goals. [Convened at an International Roundtable by the Sussex Sustainability Research Programme (SSRP), the British Council and Wilton Park]. The group focused on a particularly important aspect of implementation, namely the interactions among the 17 goals and their 169 targets, and how these interactions “are likely to have a profound influence on efforts to achieve the goals.”¹ This Policy Brief reports on their important findings and recommendations concerning SDG interactions.

Minimising or avoiding trade-offs

The Roundtable participants agreed that the interactions among the goals and targets could make it easier or more difficult to implement the SDGs, depending on the circumstances. For example, achieving the energy goal through major investments in bioenergy may – depending on location – result in a trade-off between the energy and food goals as energy crops compete with food crops for the same water and land resources.²

Another example is attaining the food goal by boosting inputs of fertilisers, pesticides and water to agriculture, or by expanding cropland over undisturbed natural ecosystems. These strategies may very well increase food production, but they also endanger water quality and natural habitats, leading to trade-offs among the food, water and land goals.

These types of actions amount to an “inefficient” implementation of the SDGs because steps taken towards one goal undermine others. Conversely, “efficient” implementation of the SDGs minimises or avoids these trade-offs.

BOX 1. CLEAN COOKSTOVES PROGRAMMES HELP TO ACHIEVE MULTIPLE GLOBAL GOALS



Usage of traditional cookstoves produces a substantial amount of smoke; so it is no surprise that household cooking is a major cause of indoor air pollution and a significant health threat particularly to women and children in poor countries. Various organisations, including the Global Alliance for Clean Cookstoves and the Climate and Clean Air Coalition, are working at the community level in several low and middle income countries to encourage households to replace traditional cookstoves with cleaner and/or more efficient types.^{3,4} A growing body of evidence suggests that doing this is an effective way of achieving several goals at the same time.^{5,6} First, curtailing indoor smoke provides an obvious health benefit to women and children and therefore addresses the health goal. Second, as compared to traditional types, clean cookstoves emit fewer black carbon particles, and black carbon makes a significant contribution to global warming. As a result, these cookstoves also help achieve the climate goal. Thirdly, cookstoves that burn biomass more efficiently reduce biomass requirements per household and in so doing decrease the amount of biomass harvested by the community from surrounding woodlands. This works towards achieving the land conservation goal of the SDGs. Finally, the improved efficiency of the cook stoves addresses the efficiency target of the energy goal. The conclusion? Introducing clean cookstoves is an example of a single concerted action that leads to synergies among several global SDGs.

Taking advantage of synergies

On the positive side, many SDGs are mutually supporting, in that actions towards one goal can help achieve other goals at the same time. For example, programmes that replace millions of smoky wood or dung-fired cookstoves with clean varieties advance not only the energy goal but also goals for health, climate, and land (see Box 1). Likewise, introducing sustainable nutrient and pesticide management and agroforestry approaches to agriculture could maintain or even increase crop yields while reducing water pollution and threats to health, thereby helping to achieve the food, water and health goals.

A third example comes from efforts to introduce both public health programmes and more sustainable forestry practices at the same time to poor villagers in tropical deforestation zones. This sets up a synergy between the health and land biodiversity goals.⁷ Encouragingly, these synergies among SDGs are not only common, but they may arise even more frequently than trade-offs.⁸

Efficient implementation

Taking advantage of synergies promotes an “efficient” implementation of the SDGs because it advances multiple goals simultaneously. This, in turn, helps reduce the human, financial, and material resources needed to achieve the complete set of goals.

To take full advantage of synergies requires scaling up numerous individual programmes and actions; and this calls for harmonising, coordinating, or even in some cases, combining efforts to tackle the different SDGs. Such an integrated approach would be in contrast to most current efforts in which countries, businesses and international organisations concentrate on single SDGs, and each goal tends to have its own dedicated support structure.⁹ Although not everything can or should be harmonised or combined, pursuing an integrated approach will save resources and be an attractive option for governments looking to reduce the high costs of SDG implementation.

BOX 2. THE CONTEXT OF TRADE-OFFS: A COASTAL FISHERY EXAMPLE



Poor fishers in low-income countries are often reluctant to stop exploiting coastal fisheries even though they recognise they are in decline.¹⁰ This is understandable considering their overriding need for food security. However, if fishing communities all along the coast follow this course, the sum of their actions works against the global target for conserving ocean ecosystems. Hence, a trade-off is set up between local actions to achieve the food goal and global efforts to achieve the oceans goal. Moreover, while fish harvests may be adequate for a few years, the fishery may eventually collapse, and a successful short-term strategy becomes a long-term misfortune. In this case a trade-off develops over time as efforts to reach the food goal in the present clash with those in the future. This example shows that trade-offs depend on context, and develop over different spatial and temporal scales.

To surmount these trade-offs, a wider view of the SDGs is needed. Examples of this include programmes for “sustainable livelihoods” which help fishers find seasonal livelihoods other than fishing.¹¹ With an alternative livelihood they tend to fish less, which reduces pressure on depleted fisheries, and allows marine ecosystems to eventually revive. Programmes that promote this livelihoods approach lessen the trade-off between the food and ocean goals and help achieve the goals for both “decent work” and ocean conservation.

Reaping the benefits

To reap the benefits of synergies some important factors need to be considered. First, the number of potential interactions is very large, amounting to several thousand, making it very unlikely that they can all be addressed. But research has shown that some interlinkages are stronger than others, which means that an urgent task is to uncover the synergies and trade-offs that matter the most for a particular community, country or region.^{12,13,14}

Second, synergies and trade-offs depend on context (see Box 2). Therefore, understanding their relative importance to policy requires knowledge about how they play out under different circumstances and for whom, especially over different spatial and temporal scales. For example, the importance of some SDG interactions is not apparent unless they are examined at the global level. In line with this, new research from the Sussex Sustainability Research Programme shows that globalization factors, such as international trade agreements, can have an important influence on how the goals are interlinked.^{15,16}

Third, policymakers are missing out on opportunities to exploit synergies because some decisions are locking in trade-offs instead of synergies. This is the case for countries aiming to reach the goal for energy by expanding their capacity of coal-fired electricity. Investments of this sort lock-in power plants, transformers, transmission lines, and sizable carbon dioxide emissions for decades to come, and thereby set in place a trade-off between the energy and climate goals. As an alternative, investments that expand the production of renewable energy may help achieve the energy, climate and other goals at the same time. Acting now provides a chance to benefit from synergies and avoid the lock-in of trade-offs.

RECOMMENDATIONS: MAKING THE MOST OF SYNERGIES AMONG GOALS

Participants at the Wilton Park Roundtable made a series of recommendations on how to take advantage of synergies among goals and promote an efficient implementation of the SDGs:¹⁷

Launch a major international initiative to identify and prioritise SDG interactions that have the greatest positive leverage and impact.

This initiative would uncover the most important synergies and trade-offs, taking into account that they are large in number and differ in importance at different scales. In addition, it would assess the most promising and efficient investment options for capitalising on synergies. Responsibility for starting the initiative could be in the hands of a group of countries, the UN, and/or other international actors. This initiative should build on existing analytical efforts and work closely with the research community (see Recommendation 3).¹⁸

Establish “learning platforms” to exchange experience and knowledge about SDG interactions.

Many government and research institutions have already studied the interactions among SDGs and it would be very beneficial if they set up learning platforms to share this knowledge. Such platforms could take many forms including online data repositories, publication catalogues and depots, blog sites and others. Some international platforms exist, such as those from the UN and ICSU^{19,20}, but new platforms are especially needed at the national and sub-national scales to provide the more specific knowledge needed by different countries and communities.

Support inter- and transdisciplinary research about SDG interactions

The research community and funding organisations should step up and give high priority to research concerned with SDG implementation and interlinkages. The SSRP, the International Council of Science, and Future Earth have taken steps in this direction, but much more needs to be done. New research programmes, commissioned reports, and conferences should be devoted to this topic. Gaps in knowledge need to be urgently filled. For example, we need to better understand which government and institutional models work best to support an integrative approach to the SDGs and which synergies and trade-offs have the

largest potential payoff in saving resources (in line with Recommendation 1). Existing methods to identify SDG interactions should be improved and new methods developed, as needed. The input of the research community is also needed in the development of multi-purpose SDG indicators and efficient monitoring and evaluation systems. All of these research efforts should incorporate traditional and indigenous knowledge and engage both the northern and southern research communities.

Produce a review of the economic impact of SDG interactions

A prominent research institution, or group of institutions, should prepare a review of the global economic costs associated with implementing the SDGs and the expected cost savings derived from taking advantage of synergies among SDGs. Of equal importance, this review should include an estimate of the costs to people and the environment of not achieving the SDGs. This report could be modelled after the “Stern Review” of the costs of climate change published in 2006, which had a significant influence on international climate policy.²¹ An associated “Sustainability Gap Report” should also be prepared which provides a global overview of trends and gaps in SDG implementation, and presents concrete options for a more systemic and cross-sectoral approach to achieving the SDGs.

Channel financial investments into innovative strategies and infrastructure.

While priorities for acting on synergies are being identified through various initiatives, action should already be taken on plans, programmes, and investments that have already demonstrated high potential to help achieve multiple SDGs. These include efforts for sustainable production and consumption, sustainable agriculture, integrated water resources management, and several variants of renewable energy production. The private sector has an important role to play in these investments and in stimulating innovative approaches to achieving the SDGs.

Introduce governance reforms that break down sectoral barriers and foster an integrative approach to implementing the SDGs

The “silo” or sectoral mode of governance has the advantage of allowing government officials in a particular ministry or agency to concentrate on a limited portfolio of important issues. But this style of governance is unsuitable for taking advantage of the synergies among goals because these positive connections are likely to span the portfolios of several departments. As an alternative, a “multi-sector” approach could be adopted by governments, international institutions, businesses, and others. The idea would be to achieve the global goals by acting on policies and measures that cut across two or more sectors. These actions could be devised and coordinated, for example, by interagency working groups or standing committees.

FURTHER INFORMATION

This Policy Brief is based on results from an International Roundtable on “Achieving the SDGs: building on interlinkages among goals”, co-sponsored by the Sussex Sustainability Research Programme, Wilton Park Foundation, and the British Council, 5-7 March 2018. The Brief draws on the report from the Roundtable (www.wiltonpark.org.uk/wp-content/uploads/WP1608-Report.pdf) and a Statement from participants addressed to the July 2018 meeting of the High-Level Political Forum on Sustainable Development (www.sussex.ac.uk/ssrp/sdg-interactions). The authors are grateful to Charlotte Humma and Olivia Taylor for their inputs.

CITATION

Joseph Alcamo, Caroline Grundy and Jörn Scharlemann. 2018. Interactions among the Sustainable Development Goals, and why they are important. SSRP (Sussex Sustainability Research Programme), University of Sussex and Institute of Development Studies, Brighton, UK. Policy Brief 1. www.sussex.ac.uk/ssrp/sdg-interactions

CONTACT

SSRP@sussex.ac.uk
www.sussex.ac.uk/ssrp

REFERENCES

- 1 Anon. 2018. *Connecting the dots to catalyse change: Why managing interactions among SDGs is key to sustainable development*. Statement from Wilton Park Roundtable, March 2018 to the UN High-level Political Forum on Sustainable Development. www.sussex.ac.uk/ssrp/sdg-interactions
- 2 Lapola D, Schaldach R, Alcamo J, Bondeau A, Koch J, Koelking C, Priess J. 2010. Indirect land-use changes can overcome carbon savings from biofuels in Brazil. *Proceedings of the National Academy of Sciences* 107 (8): 3388-3393.
- 3 <http://cleancookstoves.org/>
- 4 <http://ccacoalition.org/en>
- 5 Rosenthal J, Quinn A, Grieshop A, Pillarisetti A, Glas R. 2018. Clean cooking and the SDGs: Integrated analytical approaches to guide energy interventions for health and environment goals. *Energy for Sustainable Development* 42: 152-159.
- 6 Anenberg S, Henze DK, Lacey F, Irfan A, Kinney P, Kleiman G, Pillarisetti A. 2017. Air pollution-related health and climate benefits of clean cookstove programs in Mozambique. *Environmental Research Letters* 12: 025006.
- 7 Middleton J, Cassell JA, Novotny V, Colthart G, Peck M, Fairhead J, Walker SL, Head MG, Macgregor H, Inacio J and Stewart A. 2017. *Surfaces: An interdisciplinary project to understand and enhance health in the vulnerable rainforests of Papua New Guinea*. Inaugural Planetary Health / GeoHealth Annual Meeting, 28-30 April 2017, Harvard Medical School, Boston, USA. <http://www.sussex.ac.uk/ssrp/research/health-and-environment/enhancing-health-in-vulnerable-rainforest-setting>.
- 8 Griggs DJ, Nilsson M, Stevance A, McCollum D. (eds.). 2017. *A guide to SDG interactions: From science to implementation*. Paris, France: International Council for Science (ICSU). <https://council.science/cms/2017/05/SDGs-Guide-to-Interactions.pdf>
- 9 For example, the UN's inventory of multi-stakeholder partnerships to support the SDGs is organised according to individual SDGs: <https://sustainabledevelopment.un.org/partnerships/>
- 10 Cinner J, Daw T, McClanahan T. 2009. Socioeconomic factors that affect artisanal fishers' readiness to exit a declining fishery. *Conservation Biology* 23(1): 124-130.
- 11 Allison E and Horemans B. 2006. Putting the principles of the Sustainable Livelihoods Approach into fisheries development policy and practice. *Marine Policy* 30: 757-766.
- 12 Scharlemann JPW, Mant RC, Balfour N, Brown C, Burgess ND, Guth M, Ingram DJ, Lane R, Martin J, Wicander S, Kapos V. 2016. *Global Goals Mapping: The Environment-human Landscape*. A contribution, Towards a Sustainable Earth: Environment-human Systems and the UN Global Goals. <https://nerc.ukri.org/research/partnerships/international/overseas/tase/mapping/>
- 13 Griggs, op. cit.
- 14 Pradhan P, Costa L, Rybski D, Lucht W, Kropp JP. 2017. A systematic study of Sustainable Development Goal (SDG) interactions. *Earth's Future* 5: 1169-1179.
- 15 Lydgate E. 2012. Biofuels, sustainability and trade-related regulatory chill. *Journal of International Economic Law* 15 (1): 157-180.
- 16 Lydgate E. 2012. Sustainable development in the WTO: from mutual supportiveness to balancing. *World Trade Review* 11 (4): 621-639.
- 17 Anon, op.cit.
- 18 These include, but are not limited to, initiatives of the International Institute for Applied Systems Analysis; Future Earth; the International Council for Science; Stockholm Environment Institute; the University of Sussex and the UN Environment World Conservation Monitoring Centre; and the UN Department of Economic and Social Affairs.
- 19 UN DESA: <https://www.un.org/development/desa/capacity-development/2018/02/15/walking-the-walk-on-sdg-implementation/>
- 20 Nilsson M, Griggs D, Visbeck M. 2016. Policy: map the interactions between sustainable development goals. *Nature* 534: 320-322.
- 21 Stern NH & Great Britain. 2006. *The economics of climate change: The Stern review*. Cambridge, UK: Cambridge University Press.