

# Science and Technology for an ambitious, integrated and transformational Post-2015 Development Agenda

The Scientific and Technological Community Major  
Group's vision & priorities for delivery of the Sustainable  
Development Goals and the post-2015 development  
agenda

*An updated position paper for the SD 2015 programme:*

*"Post 2 Post: Enhancing Stakeholder Engagement in the Post-  
Rio+20/Post-2015 Process"*

March 2015

## Introduction (draft)

This short position paper details the Scientific and Technological Community's vision and priorities for delivery of the Sustainable Development Goals (SDGs), in the wider post-2015 development agenda. It forms part of the European Commission-funded programme "*Post 2 Post: Enhancing Stakeholder Engagement in the Post-Rio+20/Post-2015 Process*" (*Post 2 Post*). This paper provides an opportunity for the Major Group to communicate and consult on its position as a basis for ongoing stakeholder engagement, capacity building and advocacy.

The paper sits alongside similar position papers authored by the other Major Groups. This updated position paper highlights the priorities of the Scientific and Technological Community and builds upon a previous position paper that was released in 2014. This update takes into account the work that has taken place in drafting text for the SDGs as well as the December 2014 United Nations Secretary General's Synthesis Report on the Post-2015 Agenda which summarised the latest priorities for delivering the SDGS.

The International Council for Science (ICSU), the International Social Science Council (ISSC) and the World Federation of Engineering Organisations (WFEO) are the three organizing partners of the Major Group. They work jointly to facilitate evidence-based decision-making and innovation in support of realizing sustainable development for the benefit of all.

## Summary of our position

Science and technology play a critical role for sustainable development. Science informs the formulation of evidence-based targets and indicators at global, regional and local levels. It is fundamental for assessing progress, testing solutions, and identifying emerging risks and opportunities. In recent decades, Earth-system research has provided critical inputs into our understanding of the interlinkages and interdependencies between natural and social systems which can support integrated policy-making, monitoring and review at different scales.

The SDG framework poses a number of conceptual as well as implementation challenges that will require enhancing the close collaboration between the policy and scientific communities, and other stakeholders. The 17 SDGs range from ensuring healthy lives to safeguarding the oceans. While 13 goals define social priorities for humanity, 4 address global environmental boundary conditions for climate, water ecosystem services and biodiversity, oceans. We applaud this significant progress from the MDGs. However, if the long-term overall goal is a sustainable future, the implementation of the SDGs will require integrating people-centred social and economic objectives, including the vigorous pursuit of the unfinished work of the MDGs, with respecting planetary boundaries.

More particularly, implementation must follow an integrated approach where possible to ensure that achieving the SDGs add up to long-term environmental sustainability. The greatest concern is that implementation does not address possible trade-offs between goals, for example on climate change, economic growth and energy.

To address these challenges, it will be critical to ensure:

- the development of interlinked targets that are common to different goals
- an integrated framework for implementing SDGs, notably at the national level

- a rigorous and participatory review and monitoring framework of implementation of SDGs
- the development of alternative measures of progress, beyond GDP, and key integrated indicators
- a renewed global partnership that foster dialogue and collaboration across actors
- the recognition of science as an important means of implementation in addition to technology
- a data revolution

These issues are also highlighted in the Synthesis Report by the UN Secretary General.

## Goals and Targets

An independent scientific review of the 17 Sustainable Development Goals and 169 targets was led by the International Council for Science, in partnership with the International Social Science Council. The report entitled *Review of Targets for the Sustainable Development Goals: The Science Perspective*<sup>1</sup> was published in mid-February 2015 ahead of the February meeting of the process of intergovernmental negotiations on the post-2015 development agenda. With more than 40 contributing authors from 21 countries, the report brings together a wide range of scientific expertise across the natural and social sciences in an accessible and concise manner.

The report is a unique tool designed primarily for negotiators, technical support teams and other actors engaged in defining the post-2015 Development Agenda. In particular it is a resource for technical review of the targets carried out in preparation for their adoption and translation at the national level. The report offers rigorous analysis of the proposed goals and targets, assessing whether they are backed up by scientific evidence, whether they address the economic, social and environmental dimensions of sustainable development in an integrated way, and whether they are sufficiently specific to be effectively implemented and monitored. It clearly identifies how well defined each target is through a “traffic light” colour scheme signalling where more technical work may be needed. Concrete recommendations are put forward for consideration in refining the goals and targets or in planning for their implementation and monitoring.

The main conclusions and key recommendations can be summarized as follows:

- The proposed SDGs offer major improvements on the Millennium Development Goals (MDGs). The SDG framework addresses key systemic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity, and environmental degradation that the MDGs neglected.
- The SDG framework would benefit from an overall narrative articulating how the goals will lead to broader outcomes for people and the planet. An overarching goal could be formulated, for instance in the political declaration framing the Post-2015 Development Agenda, binding together the 17 goals, thus providing a clearer means-to-end continuum.
- The current SDG framework does not identify the wide range of social groups that will need to be mobilized to deliver on the goals as agents of change alongside governments.

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<sup>1</sup> <http://www.icsu.org/news-centre/news/top-news/review-of-targets-for-sustainable-development-goals-science-perspective>

- Key trade-offs and complementarities among goals and targets should be specified in a follow-up document as their will be need to be managed to ensure success and overall progress across the SDGs.

Out of 169 targets, 49 are considered well developed, 91 targets could be strengthened by being more specific, and 29 require significant work. The analysis of the targets provided in the report could support a technical review of the targets around criteria such as:

- *Consistency with existing international agreements and processes* - The success of the SDGs is partly dependent on aligning targets and goals with existing international agreements and political processes. These include the Post-2015 Framework for Disaster Risk Reduction (to be agreed in Sendai, March 2015), the UNFCCC negotiations with the new climate agreement expected in December 2015, and the process on Financing for Development. All of these depend on each other for success. In addition, the report suggests harmonization of targets with the Aichi Biodiversity targets, and International Labour Organization social protection floors.
- *Implementability* - Some targets lack the focus to enable effective implementation. Recommendations are made where possible for specifying potential fields of application. Many of the targets may also contribute to several goals, and some goals and targets may conflict. Action to meet one target could have unintended consequences on others if they are pursued separately. Research suggests that most goal areas are interlinked, that many targets might contribute to several goals, and that there are important trade-offs among several goals and targets. By tackling targets in an integrated way, the desired results can be achieved for many targets.

For example, progress on ending poverty (SDG 1) cannot be achieved without progress on the food security target under SDG 2, macroeconomic policies related to targets on full and productive employment and decent work under SDG 8, the reduction of inequality under SDG 10, and without enhancing resilience to climate change under SDG 13. Success in these will lead to better health and wellbeing, thus contributing to the achievement of SDG 3.

There are also important trade-offs between targets: For example, an increase in agricultural land-use to help end hunger can result in biodiversity loss, as well as in overuse and/or pollution of water resources and downstream (and likely negative) effects on marine resources, which in turn could exacerbate food security concerns.

- *Measurability* - A number of targets are not quantified, and wherever possible the report proposes minimum levels of ambition that could be specified. For example, figures are suggested for targets to reduce water pollution, increase recycling and safe reuse of waste water, or to prevent new and reduce existing marine pollution. The report does not focus on indicators for measuring progress, but does identify some apparent gaps where key indicators may need to be developed and make recommendations to support an ambitious framework for monitoring and review of implementation. Measurability will depend on the availability of data and capacity to measure the targets. The capacity to collect reliable data at the national level consistently across member states is considered, as well as the availability of data and commonly agreed definitions to enable comparison. Also, the veracity of some existing indicators needs to be confirmed before relying on them for performance assessment, and the importance of baselines that are country-appropriate is raised.

## Framework

### *Cross-cutting issues*

In addition to the call by the Scientific and Technological Community for an integrated framework for implementing the SDGs which addresses cross-cutting issues, we urge governments and other stakeholders to ensure **linking the Post-2015 Development Agenda, Framework for Disaster Risk Reduction, as well as the new international agreement on climate change being negotiated under the UNFCCC**. From a science perspective, sustainable development, combating climate change and disaster risk reduction are intrinsically interrelated. Three high-level meetings in 2015 give us the opportunity to chart a coherent global agenda for all three areas. While acknowledging that the three agendas will remain separate as three distinct intergovernmental processes, the SG in his Synthesis Report highlights the interplay between SDGs, climate change and disaster risk reduction. He notes that climate change exacerbates environmental threats to development. In this regard, the scientific community welcomes the SG's support for a greater recognition that the three agendas depend on each other to succeed. In particular, the scientific community strongly favours retaining the dedicated goal on climate change in the SDGs framework.

Science like technology is a critical means of implementation to support an evidence-based approach to realising sustainable development, identifying and harnessing synergies across international processes, agreements and frameworks. A much enhanced harnessing of both science and technology for sustainable development is needed to scale up national science and technology activities and capacities, and encourage stronger collaboration across scientific and policy-communities. In addition, we call upon member states to enhance support for international cooperation in relevant scientific research, scientific and technological capacity building, knowledge sharing and innovation. This has been strongly recognised in the Sendai Framework for Disaster Risk Reduction 2015-2030 adopted by governments in Sendai in March 2015.

## **Monitoring and Implementation**

The effective follow-up and review will be key for the success of the Post-2015 Development Agenda. The ability to report on progress is key to mobilise action, promote accountability and shared learning, and allow for course changing. This will require filling the information and data gaps as well as developing new metrics for a more integrated understanding of sustainable development.

Regarding the SDGs, monitoring and review mechanisms should be integrated into implementation mechanisms from an early stage. Although efforts to track progress towards global goals and targets should primarily build on existing capacities, the SDG's broader context and changing social and technological circumstances require and allow a more systematic and ambitious approach. Innovation and determined action are needed on the technical front and in terms of institution building, with important contributions from the natural, social, and health sciences. From a technical perspective there is a need to strengthen Earth Observation and ground-based monitoring and statistical capacities to address critical and persistent data gaps. From an institutional perspective the need is to make sure that monitoring, review and reporting mechanisms are integrated into policymaking processes at all levels and that information is effectively used for improving decisions. While the importance of data collection and monitoring is recognized in the Open Working Group (OWG) proposal for SDGs, more attention is needed to the institutional dimensions of monitoring, reporting and review. An enabling environment is vital to help ensure that ambitious national commitments to implement the post-2015 goals are made.

The expanded set of SDGs and targets cover a wide range of topics for which current, detailed, and trustworthy data may not yet exist and for which traditional data collection and integration methods

may be technically difficult – or very expensive – to implement. While the role of statistical and remote sensing agencies will continue to be critical, data will come in more diverse formats and from more diverse sources. Recent attention to the ‘data revolution’ has inspired new thinking about the opportunities provided by new data and information technologies as well as the new or stronger challenges that may result (UN IEAG 2014). There will also be a need for shared web-based reporting platforms that can accept and provide quality control services for data from different sources and serve as assessment and reporting platforms for multiple audiences. Moving beyond traditional paper-based reports will also allow more creative combining of statistical and geospatial data with qualitative stories that help interpret, contextualize and communicate information to a wide range of audiences.

One of the key challenges likely to emerge is the large volume and complexity of a diverse set of socioeconomic and environmental data and indicators, which may sometimes provide inconsistent or even conflicting perspectives on progress. Making sense of this complex set of information will require significant efforts to ensure information quality, transparency, traceability, and realistic assessment of uncertainties and limitations. There will also be a need for better understanding of the dynamics and linkages across sectors and scales including human behavior and motivations, and for pointing out interlinkages, emerging trade-offs and synergies between goals. Establishing scientifically consistent and transparent protocols, common ontologies and conceptual frameworks for indicators that reflect systemic perspectives and principles for best measurement and assessment practices will be needed (Lyytimäki and Rosentström 2008; Pintér et al. 2012). The growing emphasis on a wider range of quantitative – and in some cases timebound – targets calls not only for reporting on status and trends, but also progress with regard to targets. This goes beyond statistical reporting of facts and evidence and requires a more analytic approach. Both global and sub-global reporting – including the global sustainable development report to be prepared under the auspices of the High Level Political Forum on Sustainable Development (HLPF) – can build on recent advances in integrated assessment reports and outlooks. These often combine status reporting with the analysis of policy drivers of change and alternative transition pathways that compare present directions with agreed future goals and targets.

A review process builds on but goes beyond monitoring as it attempts to determine the causes of successes or failures and to develop recommendations on the measures needed to improve goal attainment in the future. Research shows that compliance with norms and their implementation depends either on the political will of decision makers and/or on the capacities of local actors and institutions (Chayes and Chayes 1993). Thus, to make voluntary review attractive and effective, it should provide both incentives and capacity building. Moreover, the review process could encourage countries to honour their commitments by fostering transparency, applying peer pressure, and involving civil society and other stakeholders in holding governments to account.

## **Next Steps**

The SDG framework poses a number of conceptual as well as implementation challenges that will require enhancing the close collaboration between the policy and scientific communities and other stakeholders. Global research initiatives such as Future Earth aim to mobilize scientists to collaborate tackle these issues in partnership with policy-makers and stakeholders, and more

broadly to provide the knowledge needed to support transformations towards sustainable development.

## **Conclusion**

The Post-2015 Development Agenda is a unique opportunity to set an ambitious, integrated universal and transformational agenda for sustainable development that is supported by strong science, and puts people and the planet at the centre. We strongly support the need for goals and targets that integrate the economic, social and environmental dimensions of sustainable development and reflect their interdependencies.

Scientific communities worldwide are mobilising to support the definition, implementation and monitoring of this Agenda from the local to the global levels. An enhanced partnership between policy-makers, scientists and other sectors of civil society is key to jointly identify the critical questions that need to be addressed, to co-produce knowledge that effectively supports decision-making at different scales, and to co-deliver solutions supported by scientific evidence. Work is being undertaken by international scientific organisations and networks in this direction.

Such partnership work requires recognising explicitly the role that science plays in driving innovation: knowledge derived from research is a vital part of the solutions to the sustainability challenges we face.