Strategic Plan

for the Implementation of the

International Decade of Sciences for Sustainable Development

Jan 2024 – Dec 2033

2024 • 2033
International Decade of
Sciences for Sustainable
Development

Fostering Science for All

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Background

On 25 August 2023, the United Nations General Assembly proclaimed the period 2024–2033 the International Decade of Sciences for Sustainable Development and invited UNESCO to lead its implementation. This Decade presents a unique opportunity for humanity to unlock the full potential of science in pursuing sustainable development and ensuring a safe and prosperous future for all. Governments and all other relevant stakeholders in Member States of the United Nations are encouraged to actively support the implementation of the Decade, in collaboration with UNESCO.

The Decade is a natural extension of the International Year of Basic Sciences for Sustainable Development, although its scope is much wider. Whereas the Year focused on raising the profile of the basic sciences by explaining the link between a breakthrough in the laboratory and applications which may only find their way into our daily lives decades later, the Decade will be harnessing all of the sciences – basic, applied, social and human – to bring about transformative change to our societies, economies and environment.

The document that you are about to read presents a strategic plan for the Decade developed in the course of consultations with Member States, United Nations agencies, the private sector and civil society organizations. It includes a commonly agreed vision and mission as well as the key outcomes of the Decade and the governing framework for the Decade's implementation.

Rationale

The world is not on track to reach its Sustainable Development Goals

The world is not on track to reach the Sustainable Development Goals (SDGs) by 2030. To reach universal coverage for safe drinking water, sanitation and hygiene by 2030, current rates of progress will need to increase fourfold, according to the *United Nations' Sustainable Development Report* (2022). For at least 3 billion people, the quality of the water they rely upon is unknown for lack of monitoring.

Climate disruption is growing, as droughts, floods, storms and other weather-related hazards become more frequent and more severe. 'We are headed towards global warming of 3°C if we carry on with current policies,' observed Jim Skea, Chair of the Intergovernmental Panel on Climate Change, at COP28 in 2022, citing the UNEP *Gap Report* released a few days earlier. Phasing out fossil fuels and replacing them with more sustainable sources of energy will be impossible without science.

More generally, today's production and consumption models are unsustainable. Chemical, synthetic and electronic waste are ubiquitous. Plastics now make up two-thirds of demand for oil in the petrochemical sector, as the growing affordability of renewable sources of energy is motivating oil companies to step up production of synthetics. A 2016 report published by the World Economic Forum estimated that, at current rates, plastic particles could be more numerous than fish in the ocean by 2050. Over half of the elements in the average smartphone are increasingly scarce. Sustainable solutions such as battery-driven vehicles, solar panels and wind turbines are, themselves, rich in rare earth metals which are scarce by definition. We shall need science to reduce wastage, increase efficiency and develop more sustainable new materials.

Despite the scale of the challenge, research output in vital areas for sustainability remains marginal. According to an original study from the *UNESCO Science Report* (2021), just 0.03% of scientific publications focused on the topic of ecological alternatives to plastics and 0.02% on that of climate-ready crops over 2012–2019. Sustainability science is not currently a priority at global level.

A need for sound policies, sound science and solid public support

Too often, policy and research are turning a blind eye to pressing societal and environmental challenges. This neglect of societal needs is undermining trust in science.

We must write a new social contract for science, if we are to mitigate the daunting crises we face, such as climate disruption, biodiversity loss, resource depletion and socio-economic inequalities. That will entail aligning policies and research, so that both are pointing in the same strategic direction, towards sustainable development. People who do not have access to the benefits of scientific progress in their daily lives will be less included to support science. We must develop a new pact between science and society, in which each party acknowledges that it needs the other to thrive.

As part of this process, we must demystify science by fostering global scientific literacy. A society that understands science will be more likely to recognize its potential – and accept its limitations. A society that understands science will be less susceptible to take misinformation and disinformation at face value.

A more multi- and transdisciplinary approach to problem-solving

The history of humanity abounds with examples of how solving one problem inadvertently created another. This is because we tend to underestimate the complexity of problem-solving. This shortsightedness can be overcome by contemplating a problem from different angles, in other words, by involving specialists from different disciplines in problem-solving. During the Covid-19 pandemic, effective scientific advisory bodies grouped specialists from different disciplines, such as virologists, data scientists, mathematicians (modellers), economists and psychologists. Too often in the past, perspectives from the social sciences and humanities have been overlooked, despite the reality that human behaviour and sociological dimensions are key to successful decision-making. One aim of the Decade will be to foster a more multidisciplinary and transdisciplinary approach to problem-solving.

By integrating scientific insights from various fields, we can better understand and address the complexities of global challenges. Scientific research provides the evidence base needed to make informed decisions and develop innovative solutions.

Taking a more multidisciplinary and transdisciplinary approach to problem-solving should ensure that the complementarities and trade-offs between the different SDGs are better reflected in policy-making and research and innovation. For example, developing affordable and clean energy (SDG7) may be an effective way of tackling climate change (SDG13) but the construction and operation of large hydropower plants, wind and solar farms can have negative effects on local biodiversity (SDGs 14 and 15) and phasing out fossil fuels (SDG7) can imperil jobs, if measures are not put in place to facilitate the transition, such as by enabling workers to retrain (SDG8). Science is essential in understanding these trade-offs and finding balanced solutions that promote sustainable development across all sectors.

The Decade at Glance	
Vision The sciences and a science culture required for a sustainable world developed and accessible to all. **Mission** To engage all societal actors to advance science and ensure that everyone benefits equally from it. **Objectives** ***Objective 1:*** To advance scientific knowledge by enhancing scientific endeavour to deepen our understanding of nature and humanity, as well as the intricate interplay between them, and to generate, use and leverage scientific knowledge to accelerate progress towards the Sustainable Development Goals (SDGs) and beyond. ***Objective 2:*** To build a robust science culture in which everyone has the right to participate in science and enjoy the benefits of scientific progress and its applications in accordance with the Universal Declaration of Human Rights.	**Expected Outcomes of the Decade** ***Outcome 1***: The global community is empowered through scientific literacy. ***Outcome 2:*** Actionable scientific knowledge is produced and used to accelerate progress towards the SDGs, in alignment with human rights. ***Outcome 3:*** Basic sciences are advanced through global collaborative research initiatives. ***Outcome 4:*** Open science is widely and equitably used to democratise scientific processes and access to scientific knowledge. ***Outcome 5:*** National innovation systems are transformed, in order to respond better to the needs of science and society.

Navigating challenges and opportunities for Sciences for Sustainable Development

In proclaiming the International Decade of Sciences for Sustainable Development, the United Nations General Assembly has signalled the need to shift towards a transformative era of more inclusive and effective science-based collaboration and progress. The United Nations General Assembly has recognized that achieving sustainable development will require taking a transdisciplinary and multidimensional approach at global level – an approach that bridges scientific disciplines, all forms of knowledge and the realms of science, policy and society. The success of the Decade will hinge upon the extent to which we manage to address the key challenges that currently hinder such a holistic approach. See the table below for a selection of these key challenges and opportunities for tackling them.

Addressing these challenges will require engagement by the Decade's stakeholders and partners across academia, the government, private sector and civil society. In order to get back on track when it comes to reaching the SDGs, all stakeholders need to: enhance scientific literacy; accelerate the transition to more accessible, inclusive and open science; strengthen the connections between different scientific disciplines, communities and stakeholders; deepen the dialogue between different knowledge systems; enhance the science–policy–society interface; and nurture a global culture of science.

Challenges and Opportunities for Sciences for Sustainable Development	
Challenge	**Opportunity**
The proliferation of misinformation and disinformation, which is being exacerbated by the restricted ability of non-scientists to access scientific information and, even when they do, to comprehend the difference between opinion and scientific evidence.	Empowerment of the global community through scientific literacy.
The lack of institutional support, recognition and incentives for the collaborative generation, use and dissemination of actionable knowledge addressing pressing societal needs.	Transformation of the STI systems to prioritize the production, dissemination and use of actionable scientific knowledge to advance sustainable development in alignment with human rights.
The need to take complementarities and trade-offs between different SDGs into account in policy-making and research.	Adoption of a more multi- and transdisciplinary approach to problem-solving and policy-making.
The limited recognition by the public, policy-makers and the scientific/engineering community of the vital importance of basic sciences is hindering investment in basic research and, by extension, the capacity for innovation, thereby curbing progress in tackling global challenges for sustainable development.	Strengthen basic sciences through targeted science communication initiatives to enhance public awareness and foster increased support and investment in scientific research and innovation for sustainable development.
The disciplinary silos and limited interdisciplinary collaboration caused by existing structural institutional and financial constraints.	Advancement of, and targeted investment in, global collaborative transdisciplinary and multidisciplinary research initiatives.
Growing inequalities between and within nations in terms of the population's access to a scientific education, knowledge, infrastructure and the benefits of science, reflecting an inherent disconnect between science and societal needs, as well as a lack of diversity, inclusion and equity in national science, technology and innovation systems.	Transition to open science, in line with the values and principles of the 2021 UNESCO Recommendation on Open Science.
The fact that national innovation systems are disconnected from society and driven by cultural and social factors, norms and biases that influence what knowledge is produced, which voices are heard, whose knowledge is valued, who participates in science and who benefits from scientific knowledge, processes and progress.	Transformation of national innovation systems to encourage collaboration, agility, social justice, inclusivity, diversity, equity and responsiveness to societal needs.

Vision and Mission

Vision: The sciences and a science culture required for a sustainable world developed and accessible to all.

Mission: To engage all societal actors to further advance science and equally benefit from it.

Overall Objectives

By 2033, the sciences and the science culture that we need to develop a sustainable world will have made considerable progress and be accessible to all.

Objective 1: To advance scientific knowledge by enhancing scientific endeavour to deepen our understanding of nature and humanity, as well as the intricate interplay between them, and to generate, use and leverage scientific knowledge to accelerate progress towards the Sustainable Development Goals (SDGs) and beyond.

Objective 2: To build a robust science culture in which everyone has the right to participate in science and enjoy the benefits of scientific progress and its applications in accordance with the Universal Declaration of Human Rights.

Expected Outcomes by 2033

Expected Outcome 1: Global community empowered through scientific literacy.

This outcome aims to contribute to a world in which all people, regardless of their geographical location, gender, age or socio-economic status, have the ability to understand, evaluate and engage with scientific concepts, processes and evidence; and possess the skills to apply scientific reasoning in everyday life.

To achieve this outcome, the Decade stakeholders are invited to develop, implement and engage in a variety of initiatives, actions, programmes and other endeavours in the following ***priority areas***:

- *Science popularisation*: to foster public interest in science and acquisition of fundamental scientific knowledge, inspire curiosity and a desire for lifelong learning and promote science-based decision-making.
- *Enhancement of trust in science:* to fight disinformation, scepticism and mistrust in science and ensure open access to scientific findings and processes.
- *Science, technology, engineering and mathematics (STEM) education*: to strengthen STEM education systems and ensure equal access to quality STEM education for all boys and girls.
- *Integration of art and science*: to bring together art and science and contribute to a more vibrant and interconnected society.

Expected Outcome 2: Actionable scientific knowledge is produced and used to advance the achievement of the Sustainable Development Goals in alignment with human rights.

This outcome strives to provide society with readily applicable scientific knowledge to address the complex challenges associated with the achievement of the 17 Sustainable Development Goals (SDGs) in alignment with the *Universal Declaration on Human Rights*.

To achieve this outcome, the Decade stakeholders are invited to develop, implement and engage in a variety of initiatives, actions, programmes and other endeavours in the following ***priority areas***:

- *Actionable scientific knowledge*: to enhance the creation, responsible and timely distribution, and open access to actionable scientific knowledge, with a special focus on benefits for humanity, individual men and women, societies, the environment, and ecosystems.

- *Science–policy–society interface*: to strengthen the dialogue between science, policy and society and recourse to evidence-based decisions and policy-making at institutional, national, regional and international levels.
- *Science funding*: to promote investment in international multidisciplinary, interdisciplinary, transdisciplinary research programmes that address global challenges.

Expected Outcome 3: Basic sciences are advanced through global collaborative research initiatives.

This outcome aims to advance basic sciences on a global scale through collaborative transdisciplinary and multidisciplinary research initiatives and investment.

To achieve this outcome, the Decade stakeholders are invited to develop, implement and engage in a variety of initiatives, actions, programmes and other endeavours in the following ***priority areas***:

- *New Big Science initiatives:* to encourage cross-border interdisciplinary frontier research collaborations and enable researchers to address complex scientific questions jointly.
- *Partnerships and funding platforms:* to enhance collaboration among governments and other funders of scientific initiatives related to basic sciences and to increase support for Big Science programmes that involve developing countries and Big Science programmes that involve research institutes and civil society.
- *Capacity building:* to reduce capacity gaps and bridge the divides within and between nations when it comes to science, technology and innovation, with a particular focus on addressing these challenges in the African region and in Small Island Developing States.

Expected Outcome 4: Open science is widely and equitably used to democratise scientific processes and ensure access to scientific knowledge.

This outcome aims to accelerate the transition to open science, in line with the 2021 *UNESCO Recommendation on Open Science*. The focus will be on fostering accessible, transparent, inclusive, participative and equitable science systems and ensuring that scientific progress, knowledge and related processes are open and accessible to all, with benefits for all.

To achieve this outcome, the Decade stakeholders are invited to develop, implement and engage in a variety of initiatives, actions, programmes and other endeavours in the following ***priority areas***:

- *Awareness raising and capacity building*: to equip a broad range of actors in open science, including male and female scientists, early career researchers, publishers, innovators, academic leadership, policy-makers, citizen scientists, and Indigenous and local knowledge-holders with the ability to understand, promote and/or practice open science.
- *Open access to scientific knowledge*: to ensure open access to scientific knowledge, including scientific articles, data, source code and software, hardware and other research outputs, fostering transparency and collaboration within the scientific community.
- *Shared and equitable use of open scientific infrastructure:* to promote access to, and shared utilisation of, scientific infrastructure, fostering collaboration and knowledge exchange across borders.
- *Engagement with societal actors beyond the conventional scientific community:* to engage with a broad range of societal actors, including Indigenous and local knowledge-holders, to enhance inclusivity and diversity in scientific discourse.

Expected Outcome 5: National innovation systems are transformed to respond better to scientific and societal needs.

This outcome aims to transform the scientific structures, narrative, paradigms and ecosystems into a dynamic, adaptive, multi- and transdisciplinary framework that encourages the advancement of science, as well as collaboration, agility, social justice, inclusivity and responsiveness to societal needs. It reimagines the way in which science is conducted, evaluated and applied by embracing the ongoing evolution and iterative improvements.

To achieve this outcome, the Decade stakeholders are invited to develop, implement and engage in a variety of initiatives, actions, programmes and other endeavours in the following ***priority areas***:

- *Diversity, inclusion and equality*: to promote diversity, inclusion and equality of opportunity with a focus on young scientists, female scientists and engineers and scholars who have tended to be marginalized.
- *Scientific freedom and rights of scientists*: to protect the fundamental rights of scientists and to enhance the scientific human capital through adequate career development and performance appraisal systems.
- *Mobilisation of all scientific disciplines and knowledge systems:* to foster research ecosystems that break with the traditional silo approach and mobilise all disciplines and knowledge systems.
- *Research assessment and alignment of incentives:* to foster research assessment and evaluation practices, as well as the incentives system, including assessment of scientific careers, and criteria for fund allocations that integrate the values and principles of open science and align with the vision and mission of the Decade.

Partners

A partner may be an individual, organization or entity that collaborates with one or more of the stakeholders toward a shared goal or objective. These partnerships typically involve mutual cooperation, contributions and engagement in activities aimed at achieving the Decade's objectives. Therefore, the Decade will be open to all partners. See Annex I for a provisional list of the different categories of partner.

Engagement in the Decade

The Decade will leverage a decentralised and open approach to implementation, empowering partners to engage and implement a diverse array of initiatives that contribute to the achievement of the Decade's outcomes and objectives.

Member States, United Nations agencies, international organizations, research institutes and other stakeholders are encouraged to propose programmes, projects and activities at the global, regional, national and local levels which set out to contribute to the Decade's outcomes.

Different programmes, projects and activities under the Decade can focus on specific fields or span multiple disciplines at local, national, sub-regional, regional or global levels. The duration of these initiatives can be flexible, tailored to address emerging or ongoing challenges with significant socio-economic and environmental implications.

The Decade Executive Committee will approve targeted engagement strategies for key stakeholder groups throughout the Decade and a mechanism to endorse the various initiatives under the Decade. In recognition of the diversity of stakeholders and the wide range of potential types of engagement, the Decade does not promote a prescriptive, top-down framework for stakeholder engagement. Rather, the Decade will promote a stakeholder ecosystem that builds on existing stakeholder groups and platforms and that will develop and evolve organically over the next ten years and beyond.

An open digital platform will be established to facilitate this decentralised and open approach to implementation. The platform will serve as a hub for potential partners to register their interest in contributing to the endorsed initiatives for the Decade. Partners committing to engage with any endorsed initiatives of the Decade will share information, progress and results openly through this platform. They will also be encouraged to collaborate with partners from different regions or domains, contributing to the cross-disciplinary nature of the Decade's initiatives. Regular reporting and tracking of progress will be facilitated through designated working groups.

Outreach and communication

An outreach and communication strategy will be developed, periodically reviewed and evaluated.

All partners are expected to carry out outreach and communication activities within their respective fields and regions to attract additional support for the Decade.

An official logo was created for the Decade to identify and distinguish programmes, projects and activities under a unified visual identity, as well as for promotional purposes.

Registered partners will form a network dedicated to the Decade. The Secretariat will leverage this network to amplify promotion efforts and disseminate progress updates on programmes, projects and activities. Moreover, the network will facilitate the exchange of best practices in tackling scientific challenges and promote cross-sectoral, transdisciplinary collaboration, while nurturing a culture of science.

Monitoring and Evaluation

The partner leading each initiative will be expected to conduct periodic monitoring of execution of the initiative and submit a progress report to the designated working group regularly.

Through these working groups, the Decade Secretariat will work with all the partners engaged in the Decade to compile annual reports on progress in implementing the Decade.

A consolidated progress report will be prepared and submitted to the United Nations General Assembly in 2026, 2029 and 2032.

Governance Structure

The Governance Structure is designed to ensure efficient execution, cohesive decision-making and effective resource utilisation. The framework encompasses several key components, each playing a pivotal role in achieving our collective goals and objectives.

Responsibilities and working mechanisms of the governing structure

Entities	Responsibilities	Members	Working mechanism
Executive Committee	Provide strategic direction, oversee implementation, approve decisions, coordinate with member organisations, review, and endorse decade initiative proposals	Six representatives from Member States, each representing one of the six UNESCO Electoral Groups, seven representatives from UNESCO and other UN agencies, and three representatives from science communities/civil societies	Convene twice a year to fulfil its duties as outlined in the Terms of Reference
Science Decade Secretariat	Coordinate day-to-day operations, support committees' operation, facilitate communication, manage resources, disseminate progress and news of the science decade implementation	UNESCO to provide Secretariat	Central hub for information exchange, liaison between committees
Advisory Committee	Provide expert advice, review proposals, and offer guidance on scientific and ethical matters	Eminent scientists and educators	Periodic meetings to provide advice to the Executive Committee and evaluate programmes and projects under the Decade, etc
National Committee	Tailor strategies/plans to regional/national contexts, implement initiatives, engage with stakeholders	National Science and Technology Management organisations	Coordinate relevant programmes, projects, activities for the implementation of the science decade in member states Regular communication, share progress with Secretariat

Entities	Responsibilities	Members	Working mechanism
Working Groups at global, regional, and/or national level	Coordinate the implementation of programmes, projects, and initiatives within its scope, gather local data, monitor progress, report to Executive Committee through the Secretariat	Could be UNESCO regional offices, regional offices of other United Nations agencies, category 2 centres, UNESCO Chairs, national regional union, academies of sciences, nongovernmental organizations, the national chapters of the Organization for Women in Science in the Developing World, as designated by the Secretariat	Monthly or bi-monthly meetings or as per need, with regular updates to the Executive Committee

Annex 1 – Examples of Partners in the Decade

National/local government:

The government at various levels is the key leader and coordinator/facilitator of implementation of the Decade within its jurisdiction.

Scientific community:

The scientific community will undertake initiatives and/or conduct scientific research aimed at advancing the SDGs through an open, transdisciplinary approach. This includes supporting STEM education and science popularisation, along with collaborating with policy-makers to make informed decisions.

Science funders

Science funders such as science foundations and public/private science funding providers will provide funding for various initiatives under the Decade, as well as for the running of the Secretariat.

Universities

Educational institutions can integrate the Decade into their activities to promote a culture of science and enhance science and engineering education. As research institutes, they can contribute to actionable research initiatives for the SDGs as part of the global science community.

Science museums

Science museums and centres can actively lead and/or engage in science popularisation and STEM education by working with various stakeholders at the global, regional, national and local levels.

United Nations organizations

Within their areas of competence, United Nations agencies can be responsible for identifying the needs and outputs expected from the Decade to guide/coordinate the partners to conduct their research in a collaborative manner. United Nations agencies may also lead/launch their own research initiatives under the Decade with their science partners.

International/Regional science organizations

Science organizations can lead various initiatives and coordinate scientific research initiatives to deliver the actionable knowledge needed to take the SDGs forward, promote the science–policy–society interface and foster a culture of science.

Civil society/nongovernmental organizations

Civil society is critical to mobilise the public to engage in the Decade and to bridge the gap between society and the scientific community. Civil society will also be an important partner for science popularisation and fundraising to advance science and the Decade's implementation.

Scientific publishers

Scientific publishers are critical partners for open science, in general, and open access, in particular.

Private sector

The private sector is a critical partner for the decade, particularly in funding and conducting scientific research and developing cutting-edge technologies.

Individuals

Individuals can also be important partners for the Decade through their promotional and outreach activities.