

HOW UNESCO'S MANDATE IN EARTH SCIENCES CONTRIBUTES TO THE IMPLEMENTATION OF THE UNITED NATIONS 2030 AGENDA



What are the Sustainable Development Goals?

As a universal call to action, in 2015 the United Nations adopted Sustainable Development Goals (SDGs) as part of the 2030 Agenda for Sustainable Development to be implemented over fifteen years (2015-2030). With 17 objectives and 169 targets, the SDGs have the overall aim to eradicate poverty and other deprivations, introduce strategies that improve health and education, reduce inequality and spur economic growth, while at the same time ensuring environmental protection. To achieve this, a great transformation of the financial, economic and political systems that govern our societies is needed and political commitment and decisive action by all stakeholders is vital. Fully interconnected, the SDGs cover areas as diverse as education, gender equality, responsible consumption and production, and peace, justice and strong institutions. Each SDG has targets that need to be accomplished. Progress on the implementation of these targets is monitored by the Member States through the Voluntary National Reviews and presented at the UN High-level Political Forum on Sustainable Development, the main global forum for reviewing successes, challenges and lessons learned on achieving the 2030 Agenda for Sustainable Development.

How does Earth Sciences contribute to the implementation of the SDG's?

Geoscience, or Earth Science, is the study of the Earth. This includes its surface and the processes that shape it but also its interior and the dynamics that occur beneath the crust. Through the study of the oceans, the atmosphere, rivers and lakes, ice sheets and glaciers, volcanoes and earthquakes, earth science aims to understand how these systems work today, how they operated in the past and to predict how they may behave in the future. The study of geoscience also covers how living things, including humans, interact with the Earth, for example, through the resources we use or how water and ecosystems are interconnected.

The overall aim of the SDGs is to pave the way for a sustainable world and, as it is demonstrated in this booklet, geoscience is at the core of this mission. This discipline has the ability to grasp the complex interconnections between the atmosphere, hydrosphere, cryosphere, biosphere, and lithosphere giving a unique whole-planet perspective of the Earth system. However, it suffers from inherent limitations - incomplete data, lack of experimental control or the inability to make direct measurements - that are related to the fact that geoscience studies a 4.6 billion year old planet where most events occur at temporal scales much larger than the human lifetime. These challenges are very similar to those faced by sustainability science.

It therefore becomes evident that geoscience is paramount for the successful implementation of the Sustainable Development Goals.

The International Geoscience Programme (IGCP)

Since 1972, UNESCO, through the International Geoscience Programme (IGCP) and in partnership with the International Union of Geological Sciences (IUGS), has harnessed the intellectual capacity of a worldwide network of geoscientists to lay the foundation for our planet's future, focusing on responsible and environmental resource extraction, natural hazard resilience and preparedness, and adaptability in an era of changing climate. UNESCO, the only United Nations organization with a mandate to support research and capacity building in geology and geophysics, and its flagship programme, the International Geoscience Programme, actively contribute to society and to the implementation of the Sustainable Development Goals.

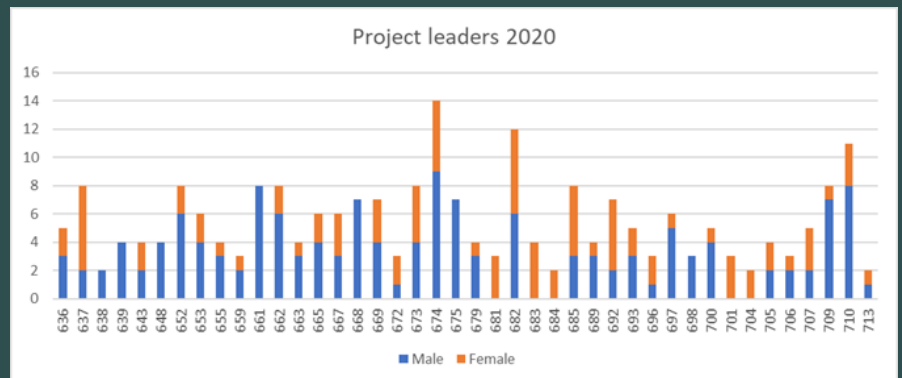
IGCP's Contribution to SDG 10



Income inequality has grown worldwide over recent decades. It is lowest in Europe and highest in the Middle East. Data shows that the richest 10% have up to 40% of the global income whereas the poorest 10% have only between 2 to 7%. To stop these widening disparities, the regulation and monitoring of financial markets and institutions must be improved by encouraging development assistance and foreign direct investment to regions where the need is greatest. This will empower lower income earners and promote economic inclusion of all regardless of sex, race or ethnicity.

SDG 10 aims to reduce inequality within and among countries.

The International Geoscience Programme was founded with the aim to promote scientific collaboration to reduce inequality. Based on the average number of leaders per project, the concept of collaboration at even the higher levels has strongly increased over the years. In the 1980s each project had on average less than two leaders. This number has raised to eight leaders (up to 15 for some projects) per project in the last decade. This increase is due to the fact that geoscience research has become more complex, requiring larger teams of scientists with different expertise. At the same time knowledge transfer from advanced to less developed regions has become the norm. There has been a steady increase in project leaders from Africa and Asia and overall 33% of the project leaders are based in a developing country. With Africa as a focal point for the upcoming UNESCO missions, this emphasis will continue in the future.



The number of project leaders and the gender distribution for active International Geoscience Programme projects in 2020.



Researchers from the UK and India working for IGCP project 672 during field work in the Himalayas. Credit: Amrita Singh

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