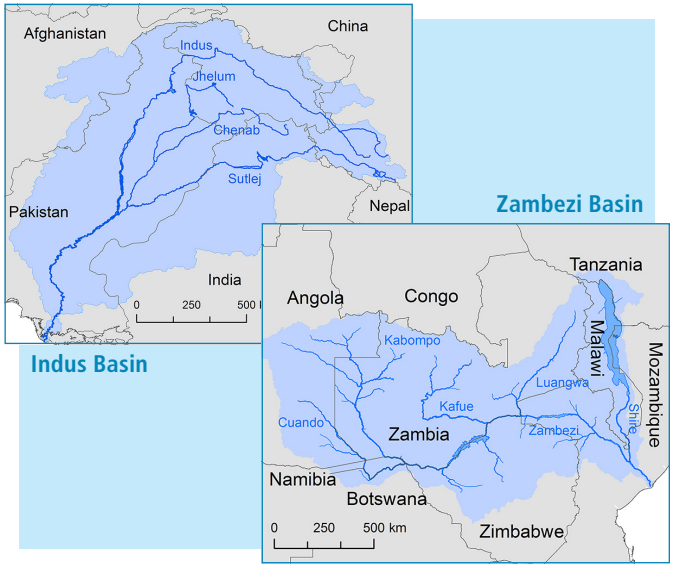
Project Output

The Integrated Solution for Water, Energy and Land project will develop an assessment framework which will provide strategic insights for developing future programming and funding strategies based upon a more holistic "systems" perspective that considers benefits and trade-offs across sectors and borders.

The project consists of four interlinked components:

- Development of a systems analysis framework for assessing solutions to nexus challenges.
- Exploring nexus solutions at global and selected regional (case study) scales.
- Building the foundation for a knowledge and capacity network on nexus decision support.
- Monitoring and evaluation.

Case studies (Zambezi and Indus river basin) will work with regional institutions and country-based stakeholders to inform cross-sectorial assessments and to provide strategic advice on nexus interactions, infrastructure investments, and opportunities for transboundary cooperation.



Partners

IIASA is an international scientific institute that conducts research into the critical issues of global environmental, economic, technological, and social change that we face in the twenty-first century. Our findings provide valuable options to policymakers to shape the future of our changing world. IIASA is independent and funded by scientific institutions in Africa, the Americas, Asia, Oceania, and Europe.

www.iiasa.ac.at

The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit, to help tackle our planet's most pressing environmental problems. Since then, the GEF has provided $14.5 billion in grants and mobilized $75.4 billion in additional financing for almost 4,000 projects. The GEF has become an international partnership of 183 countries, international institutions, civil society organizations, and private sector to address global environmental issues.

www.thegef.org

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability.

www.unido.org

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INTEGRATED SOLUTIONS for WATER, ENERGY, and LAND

A new project aims to identify integrated approaches to energy, water, food, and ecosystem security globally and in selected regions of the world

Funded by

A Global Challenge

Humanity has already reached or even exceeded the carrying capacity of several of the earth's ecosystems. Growing needs for food, energy and water will only exacerbate existing challenges over the next decades. Consequently, the acceptance of "business as usual" is eroding and we are being challenged to adopt new, more integrated, and more inclusive development pathways that avoid dangerous interference with the local environment and global planetary boundaries.

Looking ahead to 2050

- Up to 70 percent more food production will be required globally, with an even larger increase in developing countries.
- Electricity generation is expected to double and access to energy will be universal.
- With increasing energy and food demands, water demands are also expected to increase by 55 percent.
- 40 percent of the world's population will live under severe water stress by 2050.

A New Global Paradigm

The year 2015 was, in many ways, an important historical turning point with three major events taking place that will no doubt influence the development agenda for decades to come:

- **The 3rd International Conference** on Financing for Development was held in July in Addis Ababa.
- **The 17 Sustainable Development Goals** (SDGs) were adopted by the UN General Assembly in September.
- **COP 21 in December** delivered a new climate deal, the Paris Climate Agreement.

Together, these three international processes provide a universal political and societal agenda for fundamental change and a transformation toward sustainable development. They are testimony that joint action is ever more crucial, and that the international community is taking action. There exists unprecedented awareness and agreement that change is overdue. Equitable and sustainable development is the new development agenda.

A New Approach

There is an urgent need for an integrated approach that captures the synergies and trade-offs among food, energy, water and ecosystems and identifies cross-sectoral solutions responding to various alternative futures.

The **Integrated Solutions for Water, Energy and Land project** has been launched by IIASA, together with the Global Environment Facility (GEF) and the United Nations Industrial Development Organization (UNIDO).

In particular, this Integrated Solutions project will explore the following environmental problems:

- **Climate change impacts** on resource availability and supply systems, including implications for adaptation and mitigation strategies.
- **Terrestrial ecosystem impacts** associated with land, water, and energy management strategies with a focus on land use change.
- **Maintenance of environmental flows** for aquatic ecosystems.
- **Strategic insights** for accomplishing several of the SDGs.