CGIAR RESEARCH PROGRAM ON Water, Land and Ecosystems
LED BY IWMI International Water Management Institute

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6 WATER, ENERGY AND FOOD NEXUS

IMPORTANCE

Feeding 9 billion people by 2050 while reducing environmental impacts and improving energy efficiency is a momentous challenge that demands innovative and integrated thinking. Examining water, energy, land and food using a nexus framework is a starting point for more integrated decision making that aims for sustainable growth and development.

PROBLEM

Issues related to water, food, land and energy have often been tackled in isolation, resulting in unintended impacts on other sectors or groups. For example, development of irrigation schemes rarely takes into account water use by livestock, fish migration patterns, energy demands. This sectoral approach has failed to solve the increasingly complex challenges across water, energy and food, and ecosystems.

> “Achieving coherence at policy level is key to bringing the Nexus to life – it requires good analytical tools and a preparedness to embrace ideas beyond our normal comfort zone.”
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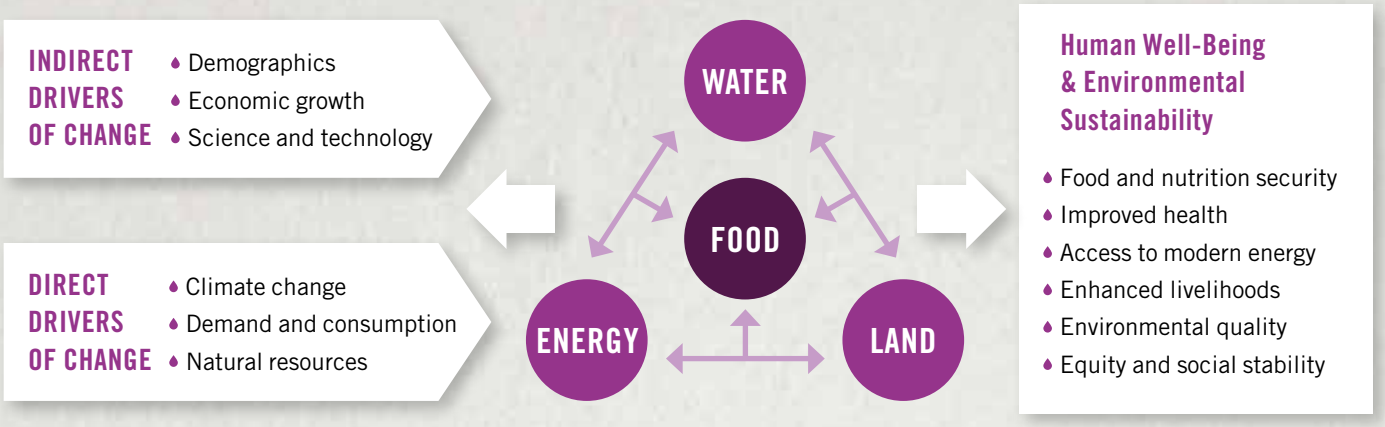
> JEREMY BIRD, DIRECTOR-GENERAL, INTERNATIONAL WATER MANAGEMENT INSTITUTE

The Nexus is a key WLE research-for-development cluster to support its ecosystem based agricultural intensifcation approach



WHAT WLE IS DOING

A nexus framework guides WLE's mission of increasing agricultural production while protecting ecosystems. Our goal is to develop tools, improve decision-making processes, build capacity and partnerships, and highlight case-specific solutions that encourage sustainable investments across water, food and energy and related ecosystem services. A transition to sustainable agricultural systems requires decision makers at all levels to make difficult choices among competing uses and users. Examples where WLE is working on the nexus include:

- In India, for example WLE researchers are helping communities prioritize water use, and use groundwater and energy more efficiently, to avoid over-pumping.
- WLE is also testing out innovative practices in reservoir areas to establish natural built infrastructure that improves food production, livelihoods and environmental services.
- In East Africa and South Asia WLE is working with farmers and basin authorities to identify resource-conserving pathways for sustainable agricultural intensification.
- In the Mekong, WLE is engaging with hydropower companies, governments, NGOs and local people to explore how benefits can be more equitably shared.

Expected Outcomes

By 2017

- WLE analytical tools are used more widely to assess water-food-energy trade-offs in WLE focal regions and as part of other research programs

By 2025

- **Ganges:** Inform future developments in land, water and energy management in the highlands, plains and delta areas.
- **Greater Mekong:** Strengthen sustainable, equitable investments and policies across the water, land, energy and food nexus to meet national growth and poverty goals.
- **Nile-East Africa:** Help negotiate trade-offs for planned infrastructure development and improve collaboration and decision-making.
- **Volta-Niger:** Guide improved management of ecosystems in the fragile north and in the growing urban areas of the south.

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