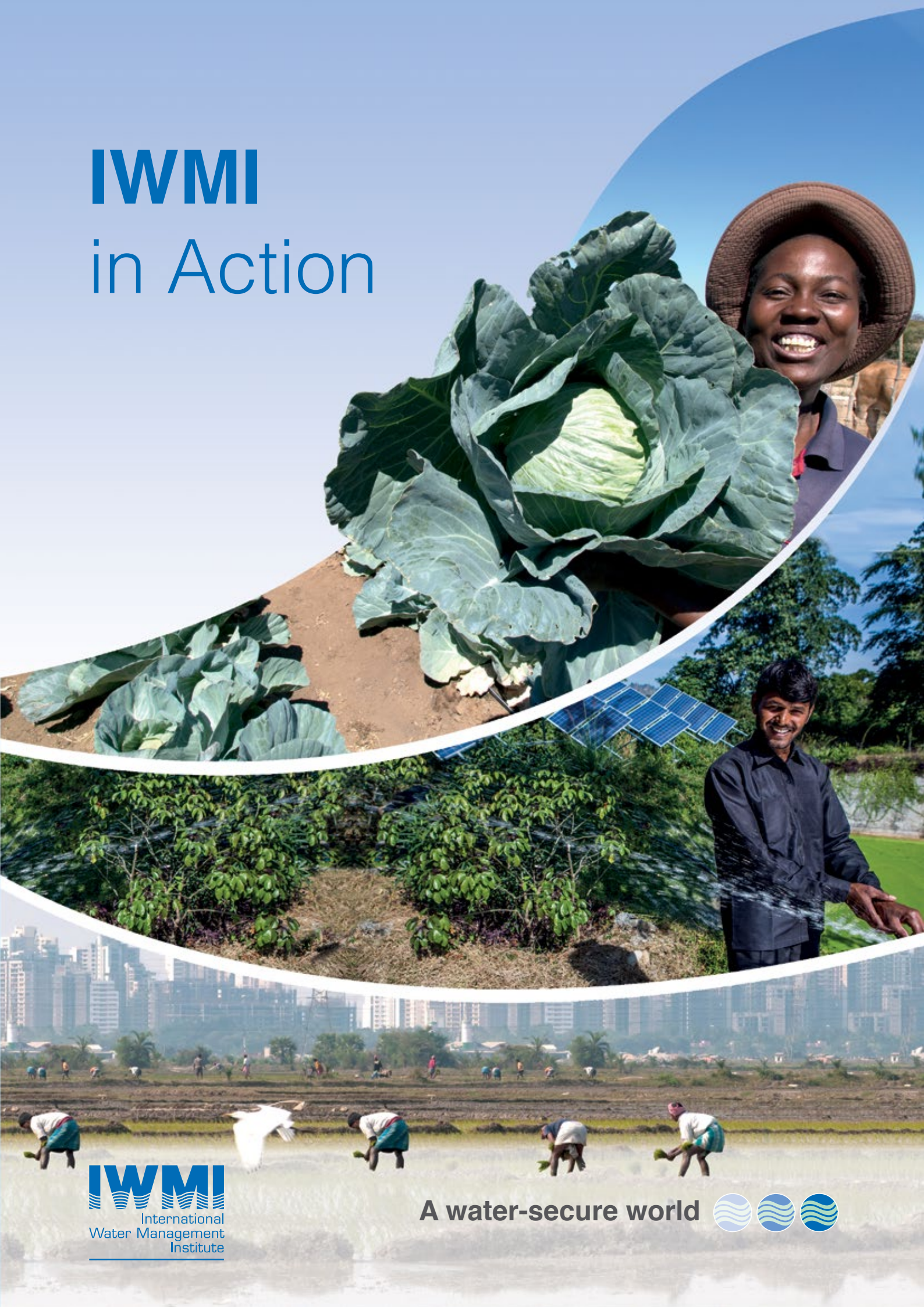


# IWMI in Action





# Our focus on global challenges

In a world of rapid social, economic and environmental change, water scarcity and declining water quality pose serious and undeniable threats to food security, growth and the natural resources on which human well-being depends. Of increasing concern is the social instability that can result, as rising competition for water aggravates unequal access to this vital resource, leading to the exclusion of poor communities and marginalized groups.

The International Water Management Institute (IWMI) conducts research for development through programs whose purpose is to build an evidence base for new approaches that address key water-related challenges:

- Building Resilience
- Sustainable Growth
- Rural-Urban Linkages

Our work brings to light striking insights on the status and possibilities of water and land management, develops innovative solutions to the most pressing problems (often through collaboration across diverse sectors of the economy and environment), and helps put in place the knowledge, policies and investments needed to reach the water-related targets of the United Nations Sustainable Development Goals.

Read on to learn **what** we aim to achieve, **how** our researchers work and **where** we concentrate our collaborative efforts.

To feed  
**9 billion  
people by  
2050,**



**farmers** will have to produce



**60%  
more food,  
requiring a  
19%**

**increase in agricultural  
water use,**



**which today  
accounts for 70%**

**of all water withdrawals  
in competition with energy, urban  
and environmental uses.**



## BUILDING RESILIENCE

### Water solutions to manage risk and variability

Farmers and agricultural land are increasingly vulnerable to water variability and extreme weather events, which in many places climate change is making worse.

#### Agriculture suffers from



**25%**  
of all the  
economic damage

**caused by  
climate-related disasters,  
on average, and 84%**  
of the  
damage resulting from drought.

Climate variability is already a reality for nearly one billion people who derive livelihoods from rainfed and irrigated farming in developing countries. The more frequent weather extremes that affect them often coincide with shocks in the financial, energy and health spheres – together with hazards like pollution and pest attacks – incurring significant economic losses for individuals and society as a whole.

To help provide farmers with a buffer against water risks and variability – enabling communities to thrive despite stresses and shocks – IWMI's strategic program on building resilience works with partners to devise research-based solutions:

- **Improved water management technologies and practices** that match local agricultural conditions, better enabling both men and women in rural communities to cope with uncertainty and increase productivity
- **New options in climate-smart agriculture** that offer incentives for sustainable use of surface and groundwater, and employ "big-data" approaches to minimize risk
- **Decision-support tools** that enable farmers, resource managers and policy makers to accelerate the adoption of improved practices for flood and drought management

This research contributes importantly to the sustainable intensification of agriculture, which is the key to achieving greater food security, improved nutrition and other improvements in rural livelihoods.

#### Contact:

**Meredith Giordano** ([m.giordano@cgiar.org](mailto:m.giordano@cgiar.org)),  
Interim Strategic Program Leader







## SUSTAINABLE GROWTH

### Water management for transforming economies

Across the developing world, the numbers of working-age people have rapidly expanded, boosting demand for employment and putting additional pressure on food supplies and natural resources.

Youth unemployment is especially **acute** in Africa.

Of the  
**10-12 million**  
youth entering the  
job market each year,



Only **3 million** find  
formal employment.

How well countries meet this challenge depends on their ability to transform agriculture and the wider economy – strengthening value chains and markets in ways that are equitable and environmentally sustainable. This, in turn, requires effective management of natural capital (including water), with a focus on gender equity in job creation.

Invariably, there will be competing demands for water. To manage difficult tradeoffs, societies need more effective institutions capable of implementing appropriate policies and incentives for change.

IWMI and its partners help promote the necessary conditions for sustainable growth by developing and disseminating:

- **Knowledge, tools and methods for future scenario and trends analysis**, which better enable planners to manage the intricate links between water, food and energy security
- **Water innovations for agriculture and agribusiness** that create opportunities for rural employment and transformation
- **Options for achieving inclusive and gender-sensitive outcomes**, while stimulating effective water governance more broadly through strong institutions and sound policies

Our strategic program on sustainable growth provides a clear focus for initiatives aimed at avoiding the economic and environmental failures that can perpetuate social unrest and mass migration.

#### Contact:

**Alan Nicol** ([a.nicol@cgiar.org](mailto:a.nicol@cgiar.org)),  
Strategic Program Leader



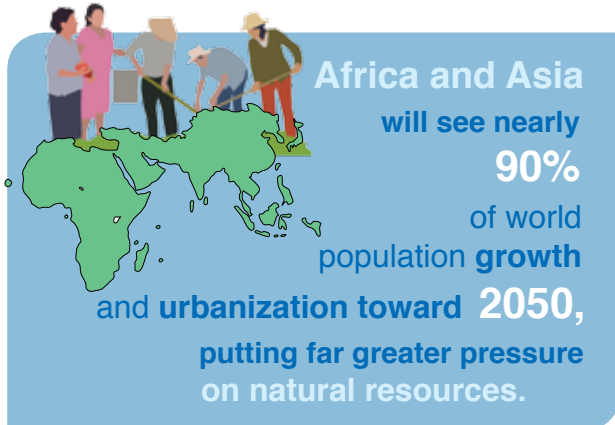




## RURAL-URBAN LINKAGES

### Water, food and waste innovations for urbanizing landscapes

Rapid urbanization is one of the defining global trends of our time.



One concern is that cities will lack the capacity to cope with rising demand for safe food and water as well as growing volumes of waste. Another is that rural areas will be unable to withstand increased pressure on agriculture and natural resources, especially in rapidly urbanizing areas of Africa and Asia, where more intensive food production has already taken a heavy toll on the environment.

While implying enormous challenges, urbanization will also create new business and livelihood opportunities. To benefit from these, societies must become adept at applying the principles of a circular economy, creating productive synergies between

urban consumption and sanitation, on the one hand, and sustainable agriculture, on the other.

IWMI contributes by working with partners to provide:

- **Technologies and decision-support tools** that inform public and private investment as well as policy formulation and capacity development in the rural-urban continuum
- **Innovative business models** and technologies for recovering water, nutrients for crops and energy from food waste, domestic wastewater and human excreta
- **Options for enhancing human and ecological health** as well as food safety through improved resource management

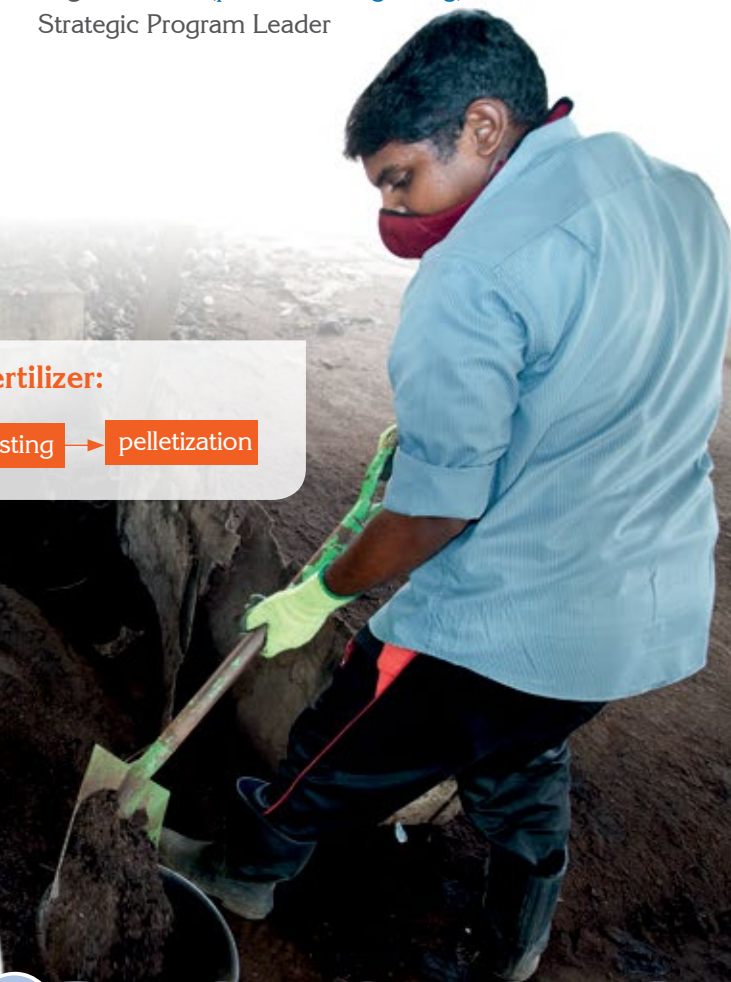
Our program on rural-urban linkages offers novel means to strengthen food security, while reducing the environmental footprint of urbanization and agricultural intensification as part of the global sustainability agenda.

#### Contact:

**Pay Drechsel** ([p.drechsel@cgiar.org](mailto:p.drechsel@cgiar.org)),  
Strategic Program Leader

#### Safe reuse of waste for organic fertilizer:

Latrine/septic tank → sludge drying → co-composting → pelletization



# How we put knowledge to work



## ***Water Futures***

Supporting resource planning at different scales through the development of advanced methods and tools, which enable stakeholders to address competing demands for water, food and energy, while improving the management of natural capital



## ***Agricultural Water***

Developing water and land management solutions that

improve production and lessen the risks for rainfed agriculture, while enhancing irrigated production and identifying options for more “intelligent” resource use



## ***Groundwater***

Identifying policy and management solutions through new partnerships and innovative field research that promote sustainable use of this resource and help reduce conflicts over water quantity and quality



## ***Governance and Gender***

Identifying institutional and policy measures that offer inclusive access to water and other resources, with special emphasis on gender equality in changing rural economies

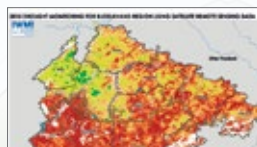




#### ***Water Innovation***

Fostering measures such as investment and commercialization through agribusiness

that help generate youth employment in emerging economies; assessing and promoting technology adoption; and helping mitigate the environmental consequences of economic growth



#### ***Water Risks***

(Using advanced geo-spatial tools to devise cost-effective measures (such as

flood and drought warning systems and index-based crop insurance) that reduce the economic impacts of stresses and shocks



#### ***Resource Recovery***

Analyzing technical, institutional and business options for the recovery of

water, nutrients and energy from human and agricultural waste to reduce pollution and lower the costs of treatment, while increasing its benefits



#### ***Water and Health***

Addressing risks posed by unsustainable urbanization

and agricultural intensification through innovations such as safe use of marginal quality water to produce and process higher quality food, with emphasis on urban and peri-urban agriculture

IWMI office locations and countries where we have projects underway



## PARTNERSHIP AND DONOR SUPPORT

A key “active ingredient” of IWMI’s success consists of **capacity strengthening** through **partnerships** with national and local government bodies, academic institutions, community-based groups, international organizations, development agencies, investors, nongovernmental organizations and the private sector.

The **CGIAR Research Program on Water, Land and Ecosystems (WLE)**, which IWMI leads, brings together many of our partners, creating a powerful engine for impact. IWMI/WLE research receives support from the CGIAR Fund as well as grants from many organizations. We appreciate their support for our collaborative efforts to achieve water security across the developing world.

### Contact:

**Julie van der Blik** ([j.vanderblik@cgiar.org](mailto:j.vanderblik@cgiar.org)), Director, Partnerships and Knowledge Management

#### IWMI headquarters and regional office for Asia

127 Sunil Mawatha  
P.O. Box 2075  
Pelawatte, Battaramulla  
Colombo, Sri Lanka  
**Tel:** +94 11 2880000, 2784080  
**Email:** [iwmi@cgiar.org](mailto:iwmi@cgiar.org)  
[www.iwmi.org](http://www.iwmi.org)  
[wle.cgiar.org](http://wle.cgiar.org)

#### Regional office for Africa

c/o CSIR Campus  
Agostinho Neto Road, Council Drive  
Airport Residential Area  
PMB CT 112, Cantonments  
Accra, Ghana  
**Tel:** +233 302 784753/4 or +233 289  
109561/+233 544 088 277  
**Email:** [iwmi-ghana@cgiar.org](mailto:iwmi-ghana@cgiar.org)

IWMI is a CGIAR center focused on research for development. CGIAR is a global research partnership for a food-secure future. Its work is carried out by 15 research centers in collaboration with hundreds of partners across the globe.

[www.cgiar.org](http://www.cgiar.org)

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RESEARCH  
PROGRAM ON  
Water, Land and  
Ecosystems

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