

CGIAR RESEARCH PROGRAM ON
WATER, LAND AND ECOSYSTEMS



RESEARCH
PROGRAM ON
Water, Land and
Ecosystems



SUSTAINABLE SOLUTIONS FOR PEOPLE AND SOCIETIES



A farm worker uses water from a solar pump in India.
Prashanth Vishwanathan (IWMI)

“ Sustainable management of water, land and ecosystems is not about conserving nature and sacrificing productivity for farmers — it is the very entry point to raise productivity and improve livelihoods. ”

Johan Rockström, WLE Steering Committee Chair

IN PARTNERSHIP WITH:



THE CHALLENGE

Global agriculture is one of humanity's greatest success stories because we produce more food than ever before. But this success masks two key constraints. Agriculture is the single largest contributor to environmental degradation, and more than 70% of global freshwater resources are used for food production. And despite progress, one person in every nine remains food insecure. The future success of sustainable agriculture hinges on the sector's ability to be a net contributor to natural capital, while also producing enough food for all and sustaining vital income-generating opportunities for the poorest and most marginalized.

VISION

WLE's vision is for a world in which agriculture delivers enduring prosperity for farming communities and thrives within vibrant ecosystems.

MISSION

WLE's mission is to provide the evidence base and solutions to help decision makers scale up sustainable land, water and ecosystem management innovations and investments in agricultural landscapes. This will reduce risks and increase resilience of women and men in developing countries. The program achieves this through a focus on increasing productivity and identifying synergies, and managing trade-offs among sectors. WLE supports the implementation of Sustainable Development Goals, with a focus on No hunger (SDG 2), Clean water and sanitation (SDG 6), and Life on land (SDG 15).

Led by the International Water Management Institute (IWMI), WLE combines the resources of 11 CGIAR centers, FAO and hundreds of research and uptake partners based around the world.

TACKLING TODAY'S AGRICULTURAL AND POVERTY CHALLENGES



Taking temperature readings of windrows containing fecal sludge, to be used in production of fertilizer pellets. Bangladesh. Neil Palmer/IWMI

RESILIENCE: WLE is developing a portfolio of technologies, services and institutional mechanisms to strengthen the resilience of governments and communities, enabling them to better respond to extreme weather events. For example, in Africa, researchers have developed SMART ICT tools to empower smallholder farmers to make informed decisions in managing their land and water resources better. This is being trialled in Sudan and Nigeria.

PRODUCTIVITY: WLE works on water productivity and availability for agriculture, as well as equitable access for both men and women. In India, WLE has helped

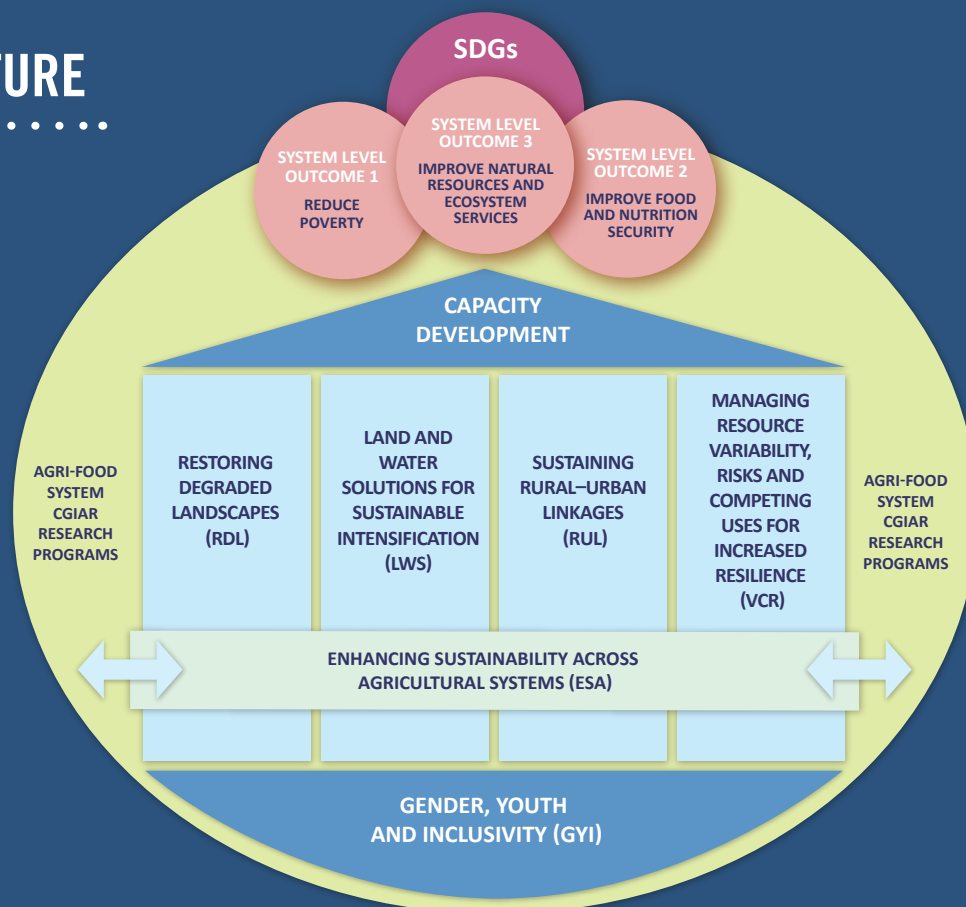


establish the world's first solar pump irrigation cooperative. This enterprise aims to reduce over-extraction of groundwater by providing incentives for the cooperative to sell excess power produced by their solar irrigation pumps back to the grid.

TRADE-OFFS AND SYNERGIES: WLE is working on Africa's first water fund. In the Tana River Basin in Kenya, the fund is to manage water and ecosystem services across scales and sectors. It is designed to provide a sustained water supply to more than nine million people and generate US\$21.5 million in long-term benefits.

WLE INTO THE FUTURE

WLE has completed five successful years of operation (see page 4 on achievements). WLE Phase 2 (2017–2022) will build on this. In the second phase, WLE will support communities, policymakers, investors and the private sector to make better decisions when planning and implementing development efforts that impact on landscapes. WLE ensures that solutions incorporate equity, access to resources and gender mainstreaming.



FLAGSHIP 1: REGENERATING DEGRADED LANDSCAPES (RDL)

The RDL flagship works to restore degraded landscapes as well as enhance ecosystem services and related benefits, such as food, energy, clean water and livelihoods. RDL will work with more than 1.5 million farm households to restore more than 3 million ha and an estimated 4 MT CO₂-e yr⁻¹ sequestered in soils. It focuses its efforts around SDG 15.3 on achieving a land degradation-neutral world.

FLAGSHIP 2: LAND AND WATER SOLUTIONS FOR SUSTAINABLE INTENSIFICATION (LWS)

The LWS flagship will help to strengthen the resilience of farming communities, especially the poor, by developing productive agricultural land and water management solutions that can be sustainably applied at scale. LWS research will foster more resilient, equitable and food-secure farming landscapes, benefiting two million households and thereby contributing to SDG 6.4 on increasing water use efficiency at scale (target: 5% in irrigation).

FLAGSHIP 3: SUSTAINING RURAL-URBAN LINKAGES (RUL)

The RUL flagship addresses challenges related to urbanizing landscapes (i.e., resource competition and pollution) and opportunities for closing water

and nutrient loops. RUL increases water- and nutrient-use efficiency on 4 Mha of urban and peri-urban areas and aims to improve nutrient- and water- use efficiency on 3.6 Mha through resource recovery from food waste. RUL works primarily on SDG 2, 6, and 11.

FLAGSHIP 4: MANAGING RESOURCE VARIABILITY, RISKS AND COMPETING USES FOR INCREASED RESILIENCE (VCR)

The VCR flagship aims to reduce risks and losses that farming communities suffer from floods, drought and other water-related events as well as help them manage trade-offs from competition over water, energy and land. It expects to co-develop and scale innovative policy mechanisms and institutional arrangements, benefiting six million households by 2022. VCR works primarily on SDGs 2.4 and 6.4.

FLAGSHIP 5: ENHANCING SUSTAINABILITY ACROSS AGRICULTURAL SYSTEMS (ESA)

The ESA flagship will pool evidence on sustainability from across the suite of WLE and other CGIAR research programs. It will deliver knowledge and evidence to support large scale development decisions and investments on commodities.

WLE PHASE 1 (2013-2016) KEY ACHIEVEMENTS



RESEARCH
PROGRAM ON
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RESEARCH & SOLUTIONS



247 FIELD TESTED
TECHNOLOGIES



1 MILLION+ VIEWS
ON WEB-BASED PLATFORMS

509 ISI PUBLICATIONS



OUTCOMES & IMPACTS

122 MULTISTAKEHOLDER R4D PLATFORMS

22 (2013)

24 (2014)

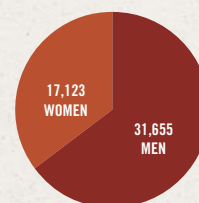
41 (2015)

35 (2016)

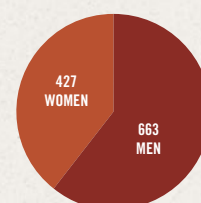


WLE TOOK PART IN MORE THAN 210 POLICY
RELATED ENGAGEMENTS

CAPACITY DEVELOPMENT



SHORT-TERM COURSES



LONG-TERM TRAINING

2,889,300 HECTARES UNDER IMPROVED TECHNOLOGIES OR
MANAGEMENT PRACTICES (2016)

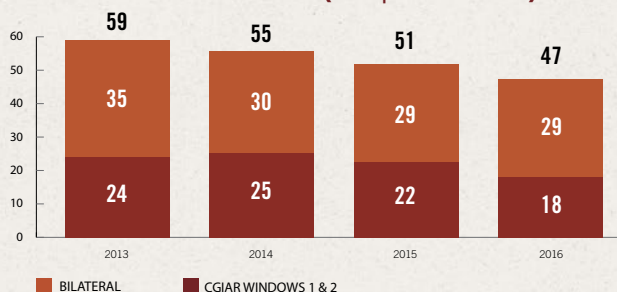


333,000 FARMERS APPLYING
NEW TECHNOLOGIES



PROGRAM

ANNUAL EXPENDITURE (US \$ MILLIONS)



354 PARTNERS

13 CORE
163 RESEARCH
113 CAPACITY DEVELOPMENT
35 ENABLING AND LEVERAGE (UPTAKE)
7 INVESTMENT

CGIAR Research Program on Water, Land and Ecosystems
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IN PARTNERSHIP WITH:

