CGIAR RESEARCH PROGRAM ON Water, Land and Ecosystems

LED BY: IWMI International Water Management Institute

CGIAR Research Program on Water, Land and Ecosystems: Annual Report for 2016

Submitted to the CGIAR System Management Office

April 2017

IN PARTNERSHIP WITH:

Bioversity International | CGIAR Challenge Program on WATER & FOOD | CIAT | CIP | FAO | ICARDA | ICRISAT | IITA | IFPRI | ILRI | World Agroforestry Centre | WorldFish

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Acronyms

AAS	CGIAR Research Program on Aquatic Agriculture Systems
ACIAR	Australian Centre for International Agricultural Research
ACWIRM	Advanced Centre for Integrated Water Resources Management
ADB	Asian Development Bank
AFSIS	Africa Soil Information Service
BMGF	Bill and Melinda Gates Foundation
Capdev	Capacity development
CBO	Community based organization
CCAFS	CGIAR Research Program on Climate Change, Agriculture and Food Security
CIAT	International Center for Tropical Agriculture
CRP	CGIAR Research Program
CPWF	CGIAR Challenge Program on Water and Food
DAI	WLE Flagship on Decision Analysis and Information Systems
DFID	Department for International Development (United Kingdom)
DGIS	Directorate General for International Cooperation (Netherlands)
DIP	District Irrigation Plan
ELMO	Evaluating Land Management Options
EthioSIS	Ethiopian Soil Information System
FAO	Food and Agriculture Organization of the United Nations
FTA	CGIAR Research Program on Forest, Trees and Agriculture
GILIT	Gender in Irrigation Learning and Improvement Tool
GTP II	Growth and Transformation Plan (second), Ethiopia
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRIPP	Groundwater Solutions Initiative for Policy and Practice
GRiSP	Global Rice Science Partnership
HI-NEX	Hydroelectric-Water-Food Nexus Project
HYV	High yielding variety
IBFI	Index Based Flood Insurance
IDO	Intermediate development outcome
IEA	Independent Evaluation Arrangement (CGIAR)
IES	WLE Flagship on Integrating Ecosystem Solutions into Policy and Investments
ILSSI	International Lab for Small Scale Irrigation
ISPC	Independent Science and Partnership Council (CGIAR)
IRRI	International Rice Research Institute
IWMI	International Water Management Institute
IWPP	IWMI-Tata Water Policy Program
LWP	WLE Flagship on Sustainably Increasing Land and Water Productivity
MABES	Mobile Agent-Based Ecosystem Services
MARIS	Migration, Agriculture and Resilience Initiative for Sustainability
MARLO	Managing Agricultural Research for Learning and Outcomes
MRV	WLE Flagship on Managing Resource Variability
MoU	Memorandum of Understanding
MRV	WLE Flagship on Managing Resource Variability
MWp	Mega-watt peak
NGO	Non-Governmental Organization
PIM	CGIAR Research Program on Policy Institutions and Markets
PMFBY	Prime Minister's National Crop Insurance Scheme (India)
PMKSY	Prime Minister's National Irrigation Program (India)
RDE	WLE Flagship on Regenerating Degraded Ecosystems

RRR	Resource recovery and reuse
SADMS	South Asia Drought Monitoring System
SDG	Sustainable Development Goals
SLO	System-Level Outcome
SOC	Soil Organic Carbon Application
SPaRC	Solar Power as a Remunerative Crop
SPICE	Solar Pump Irrigator's Cooperative Enterprise
SRF	Strategic Research Framework (CGIAR)
UNESCO-IHE	United Nations Educational, Scientific and Cultural Organization – Institute for Water Education
USAID	United States Agency for International Development
USD	United States dollars
UTFI	Underground Taming of Floods for Irrigation
WLE	CGIAR Research Program on Water, Land and Ecosystems

A Key Messages

A.1 Synthesis of progress and challenges

As articulated in WLE's framework paper of 2016, moving to the *sustainable* intensification of agriculture while sustaining critical natural resources and ecosystem services is an essential prerequisite to building resilience and sustainable growth. The CGIAR Research Program on Water, Land and Ecosystems (WLE) was established to address this challenge and contribute directly to meeting our global commitments on sustainable food production[1].

As noted by the IEA and by the ISPC,[2] WLE's successes have been based on its strong partnerships with many diverse institutions along its entire impact pathway; its alignment with global policy initiatives; its strong gender and poverty focus; and on its ability to facilitate collaboration among numerous scientific and practical disciplines. Implementing a large multi-institutional, multi-disciplinary program in highly diverse agro-ecosystems is a work in progress. WLE has developed a strong, reflexive learning culture and a high degree of cooperation and trust among its partners. Its adaptive management is supported by effective planning, implementation, monitoring and evaluation. WLE has also developed a stronger conceptual framework, which is reflected in the three overarching research questions used to organize Section C below.

This report is the last of Phase 1, and work is reported for 2016 as required by the CGIAR guidelines, but it also presents results realized in 2016 from the investments over the course of Phase 1. WLE has produced significant outputs and important outcomes in 2016, despite the serious challenge of unpredictable funding. Overall, WLE achieved 85% of its 34 targets across 22 indicators. Considering the 55% cut compared to the original budget for the year, this is a noteworthy achievement. On gender, 70% of all technologies and 56% of tools developed address gender-differentiated impacts, and 44% of our new databases contain datasets differentiated by gender.

WLE is is increasingly recognized for the quality and critical importance of its work, and there is growing demand for its products and services. The Program is poised to make even greater contributions to the overall goals of the CGIAR over the next five years. In some cases, Phase 1 results will be carried through to Phase 2 where they can continue to be scaled up and out. WLE will also focus on integration and collaboration with wider CGIAR work on agri-food systems as a key priority for Phase 2.

A.2 Significant achievements

WLE's most significant achievements in 2016 include the following:

1. New financially viable business models that are being adopted by governments in Africa and Asia for cost-effectively, and even profitably, turning urban waste into compost and fertilizer products; for promoting solar irrigation pumps; and

2. Stronger recognition among scientists, investors and policy-makers of the large potential for exploiting groundwater sustainably to raise agricultural production in Africa, combined with unique portfolios of solutions to enhance groundwater recharge and reduction of groundwater mining, especially in South and Southeast Asia. Our work is leading to important outcomes, for example Underground Taming of Floods for Irrigation; and

[1] Responds to UN Sustainable Development Goals 2 (Zero Hunger), 5 (Gender Equality), 6 (Clean Water), 7 (Affordable and Clean Energy), 13 (Climate Change), and 15 (Life on Land).

[2] ISPC Commentary on the full proposal for the CRP on Water, Land, and Ecosystems (WLE) for Phase 2 (2017-2022), June 15, 2016.

3. A growing suite of innovative decision-support tools and datasets that are being used by governments and investors to identify opportunities for restoration of degraded lands and sustainable management of land and water resources; examples include the African Soil Information Service (AfSIS).

A.3 Financial summary

Table 1: Preliminary summary of WLE Expenditures against Budget in 2016[3]

2016 Approved budget allocation including 2015 carry over ((USD 000's)						2016 Actual expenditures (USD 000's)			
W1 & W2			W3, bilateral, other	Total	Gender %	W1 & W2	W3, bilateral, other	Total	Gender %
2016	Carry forward[4]	Total							
11,621	7,048	18,669	21,616	40,285	10%	18,322	28,836	47,158	TBC[5]

According to the CGIAR Finance Plan of March 2015, the projected allocation to WLE in 2016 was USD 22 million. Due to reductions in the CGIAR Fund, in November 2015, WLE's approved W1-2 2016 allocation was revised down by 55% to USD 9.8 million, resulting in a need to make significant cuts to a number of planned outputs and cross-learning and integration activities, and to reduce staffing and operating costs. A further cut was planned for later in the year, due to the effects of currency exchange fluctuations on W1-2 funds, but this did not materialize. The funding instability was a considerable risk for WLE in 2016, as noted in Section G. A contribution was confirmed late in 2016 by DFID to WLE, bringing the final 2016 W1-2 allocation to USD 11.6 million. USD 7.05 million of W1 & W2, carried forward from the previous year to support the Focal Region projects also contributed to the total actual program expenditures in 2016, which, including all sources of funding, were USD 47 million.

B Impact Pathway and Intermediate Development Outcomes (IDOs)

Underpinning WLE's theory of change during Phase 1 were three research questions.[6] These are central to structuring WLE's contribution to CGIAR's SLO 3 and its three IDOs (enhanced natural capital, enhanced benefits from ecosystem services and sustainably managed ecosystems). All three IDOs and seven of the nine[7] sub-IDOs are directly addressed by WLE, unchanged since 2012. WLE also contributes to SLO 2, e.g., work on water quality; and to SLO 1, e.g., work on resilience through agricultural land and water management.

Key outcomes achieved in 2016 address these research questions. Examples include

- The resource recovery and reuse (RRR) work on co-composting, through public-private partnerships, which is rapidly expanding beyond the work in Ghana to Sri Lanka, India and Nepal; and,
- The establishment of the first solar pump irrigators' cooperative in the world in May 2016, in Gujarat. This small experiment is contributing to India's ambitious target of establishing 100 GW of solar energy by 2022, and to the widespread out-scaling of the model to sell electricity, while also reducing the over-pumping of aquifers.

[3] All figures in Section A.3 are preliminary, pending receipt of final financial statements from WLE partners.

[4] Additional funding received by WLE in 2014 was programmed to cover the Focal Region and Innovation Fund initiatives, across 2015 and 2016.

[5] Figures on gender percentage of expenditure for 2016 have not yet been provided by all WLE partners.

[6] 1) How can we balance healthy ecosystem services while increasing agricultural productivity? 2) What innovative institutional, governance and management practices can improve ecosystem provisioning and support the achievement of gender equity? 3) How can we ensure that investments in water, food, land and energy are sustainable and meet national and sub-national goals?

[7] Enhancing the conservation of habitats and the enrichment of plant and animal biodiversity are the only two sub-IDOs under SLO 3 to which WLE is not directly contributing.

The recently verified positive impacts of water governance and management interventions in a polder in coastal Bangladesh, discussed below in Section C.3, is an example of WLE's impact.

Major 2016 outputs have focused largely on understanding the trade-offs that occur between different ecosystems services in agricultural interventions, developing and adapting technologies that improve soils and reduce water use, and preparing investment cases, based on research, for the reuse of human waste. Key strategies have included applying science-based knowledge, tools and methodologies to co-developing solutions with communities and implementing partners, to demonstrate that ecosystem-based approaches to agricultural intensification are economically viable at scale over the long term.

The major assumptions underpinning effective delivery have involved the willingness of key change agents – i.e., policy-makers and investors – to utilize the new approaches supported by research. Adapting and learning throughout the first phase has resulted in a greater focus on political economy analysis, understanding and targeting change agents and working more upstream, i.e., at policy level. Most of WLE's achievements result from a long-term engagement with multiple partners along the impact pathway, including immediate clients, and in-depth research that involves thinking laterally across sectors and/or disciplines. Further details on each of these and the pathways are found in Annex 5 to this report.

C Progress along the Impact Pathway

Section C synthesizes the key outputs, outcomes and impacts delivered during 2016. The output and outcome sections are structured along the three underpinning research questions of WLE (as in Section B) and reflects results and lessons drawn from across the Program, where appropriate building on work from earlier in Phase 1.

C.1 Progress toward outputs

In addition to publishing 142 papers in ISI-ranked journals in 2016, WLE has produced 12 new databases, 58 tools (of which 19 are decision-support tools), conducted research on 153 technologies and contributed to 11 policies drafted, presented or passed. WLE provided short-term training to 13,343 people, of whom 32% were women, and 246 people benefited from long-term training, of whom 52% were women. Annex 1 contains further details.

This sub-section emphasizes the major outputs produced during Phase 1 that have matured in 2016 and those that are central to achieving its planned Phase 1 outcomes; and, areas that WLE will continue to build upon in Phase 2, as the Program shifts to a stronger focus on integrating sustainability.

a. Balancing healthy ecosystem services with increased agricultural productivity

WLE has addressed this question by providing evidence for decisions, developing numerous decision-support tools, databases and data sets, and assisting potential users to adopt them. The most impactful ones include:

Decision-support tools for sustainably increasing agricultural productivity

Decision analysis approaches that predict the impacts of specific agricultural or natural resource management decisions, and thereby support researchers, policy-makers and entrepreneurs to make more evidence-informed decisions. These pioneering approaches use Bayesian networks and other causal models taken from business and decision sciences. Scientific data are combined with the knowledge of experienced stakeholders, experts and decision-makers to produce a range of probabilistic impacts and outcomes of various decisions. These decision analysis approaches are now being used for comparing water reservoir management options in Burkina Faso; advising a local government in Kenya on plans to supply a paper mill with farm-sourced wood; anticipating the nutrition implications of introducing fruit trees to small farms in Kenya; and assessing the implications of replacing traditional home gardens with large-scale commercial agriculture in Uganda. The same methods have also shown potential for broader land use valuation, for example, a comparison of several land use options in a savannah region of Botswana.

The **Soil Best Bets Compendium** is a novel toolbox that supports more effective targeting of soil and land management investments. Information is housed on a one-stop shop website, which describes detailed management practices, technologies and types of initiatives that maintain or increase soil organic matter, fertility and productivity. Each 'best bet' includes an overview of its suitability in different geographies and agro-ecologies, resource requirements, scientific basis and case studies. The compendium allows users to draw from existing research and recorded field experience as well as to comment on and add new case studies. Developed with GIZ support, key users include applied researchers, sustainable land management implementing agencies and extension officers.

A methodology that calculates sustainable limits to water abstraction for agriculture is the first systematic attempt to understand how much surface and ground water is needed for agriculture, while also maintaining the environmental flows in rivers needed to sustain ecosystems and water-related ecosystem services. WLE researchers have taken forward this work, in collaboration with Utrecht and United Nations universities as well as the International Institute for Applied Systems Analysis, and developed an interactive tool (Global Environmental Flow Information System) that water managers and planners can use to visualize and assess sustainable groundwater abstraction scenarios at regional, national and river basin scales. This information will be useful to policy-makers seeking ways to combine surface and groundwater use sustainably. Given that globally, an estimated 43% of irrigation comes from groundwater, and 14-17% of food produced with groundwater relies on unsustainably mining aquifers, tackling this challenge is vital for sustainable food production.

Information and data sets for more effective soil management

Digital soil property maps for sub-Saharan Africa provide spatial predictions of soil properties, such as soil organic carbon (SOC), pH and nutrient content. Information about soil health and degradation is critical for landscape management and for making smart land-use choices to maximize sustainable production, especially across larger landscape and time scales. Building on this work, WLE, with the Bill and Melinda Gates Foundation (BMGF), has helped set up Soil-Plant Spectral Diagnostic Labs in 10 African countries. The Program is collaborating with scientists in Ethiopia, Ghana, Nigeria and Tanzania to prepare soil health baselines as part of the Africa Soil Information Service (AfSIS), the most comprehensive soil sample database available for Africa, with over 28,000 sampling locations by the close of 2016. The researchers have also contributed to the infrared and x-ray spectroscopy methodology used by AfSIS, which costs much less than conventional soil and plant analysis techniques.

There is growing evidence that some donors and government agencies in Africa are using these maps and associated tools to map soil fertility problems, target soil conservation efforts, and measure soil carbon stocks. For example, the Ethiopian Soil Information System (EthioSIS), launched in 2012, will soon have sampled soils from all *woredas* of the country and has already produced soil fertility atlases for all regions. They are being used to shape interventions in the second Growth and Transformation Plan (GTP II) Agricultural Transformation Agenda to improve fertilizer use efficiency.

b. Innovative institutional and management practices for improved ecosystem provisioning and gender equity

WLE works with partners to analyze and provide advice on government policies and institutional arrangements for more effective natural resources and ecosystem management. In 2016, key highlights included the following:

Innovative approaches to collective action on common property resources

An experimental game approach has enabled local stakeholders to better understand the constraints to, and strategies for, improving community management of natural resources. Now tested in several areas, growing evidence is demonstrating that this experimental game approach is effective in improving both scientists' and community members' understanding and awareness. In Andhra Pradesh, India, and in Colombia, experimental games pilots helped water users understand how to solve groundwater challenges. In India, many farmers thought that groundwater levels were mostly affected by rainfall and

had not recognized how much irrigation contributes to depleting aquifers. The games helped make this connection explicit and led farmers to begin addressing the problem cooperatively by coordinating their crop choices during the dry season. Further, there was a significantly (at 95% confidence level, with p-value=0.001) higher rate of adoption of rules and water registers in sites where the game was played, compared to sites where they were not played. This supports the hypothesis that games have an impact on community-level rules.[8] However, playing the games alone is not enough to bring about change: holding discursive workshops after the games reinforced the positive attitudes toward cooperation and sharing.

A related study in Tamil Nadu used a similar experimental game to test different approaches to assessing behavior toward sanitation and hygiene preferences. Based on survey responses, the game clearly demonstrated the role of communication in improving sanitation and hygiene preferences. It also showed that experimental games can be a valuable and cost-effective tool for improving participants' knowledge and preferences.

Evidence from game-based behavioral experiments in Cambodia and Vietnam under the "mobile agent-based ecosystem services" (MABES) project, designed to reduce pesticide usage, showed that payments may actually discourage coordination in ecosystem services provision, where coordination among farmers is complex and unenforceable. Vietnamese farmers playing the game chose to cooperate and use the subsidy to adopt natural pest control practices, increasing everyone's yields. However, the Cambodian farmers in a similar agro-ecosystem chose to take the subsidy but did not cooperate, leaving winners and losers. Experimental games are useful both for modelers to understand patterns of thinking and behavior, and to farmers to understand the benefits and pitfalls of cooperation.

Finally, WLE has also been developing and testing an experimental game-based protocol to explore the options for sustainable management of watershed common property resources. This protocol and the other experimental games will help understand better how to design and implement incentive frameworks to encourage sustainable agro-ecosystem management.

c. Ensuring sustainability of investments in water, food, land and energy that meet national and sub-national goals

Much of WLE's work aims at identifying game-changing opportunities for investments that support the Sustainable Development Goals (SDGs) as well as the water, food, land and energy priorities of governments. Here we highlight two important examples from 2016.

Decision-support information, maps and educational materials to support investment decisions

Mapping groundwater for irrigation in Africa: A ground-breaking paper in 2014 produced maps showing that in Africa, about 40 million ha could be irrigated with groundwater. Recent advances in mapping technology have enabled WLE to produce updated maps in 2016 that identify 80 transboundary aquifers and aquifer systems superimposed on 63 international river basins. Nearly a third of the continent's population lives within the hydrological boundaries of these shared aquifers, which cover approximately 42% of continental Africa's land area. The maps and complementary training materials respond to an expressed need from African decision-makers to strengthen the integration of transboundary groundwater issues into river basin management – a much-neglected element of resource management. Improved knowledge of groundwater resources will help target effective interventions and investments in agricultural water management.

Published research papers with policy advice

Hydroelectric-water-food nexus (HI-NEX) in the Ganges headwaters: Policy-makers often promote run-of-the-river hydroelectric projects as being less damaging socially and environmentally than reservoir-based schemes. However, evidence from a WLE focal region project on the impact of three run-of-the-river hydroelectric projects in Uttarkahand, India, found that if poorly planned, these schemes also often

[8] Ruth Meinzen-Dick, Marco A. Janssen, Sandeep Kandikuppa, Rahul Chaturvedi, Kaushalendra Rao, Sophie Theis. Playing Games to Save Water: Collective Action Games for Groundwater Management in India. Paper under review by *World Development*.

have significant, sometimes devastating, local social and environmental impacts. The study found women are especially badly affected when water, land and forest resources are reduced, and indeed are leading political protests against these projects. WLE identified the key failure as being the non-consideration of impacts on ecosystem services and of local stakeholder concerns and priorities. The research identified specific strategies to design such hydropower projects differently and in ways that safeguard, even enhance, local livelihoods, maintaining critical ecosystem services, and achieving more equal hydroelectric benefits. Involving local communities from the beginning in planning and designing such projects, and prioritizing their benefits as well as downstream interests is not only feasible, but is likely to lead to more sustainable schemes, reducing protests and resistance that cause delays and increase the investment costs of schemes (Buechler et al. 2016; Scott et al. 2016; Thapa et al. 2016).

C.2 Progress toward achievement of research outcomes and IDOs

WLE's outcome matrix shows that of the 35 planned outcome targets for 2016, 21 (60%) have been fully or over-achieved, and a further 11 (31%) partially achieved, thus an aggregate of 91% success. Given the funding cuts, this is a considerable achievement. Three targets were not met (9%) due to either social unrest in target countries and funding cuts. This sub-section highlights how WLE research has been utilized, and how it has delivered changes in behavior or practice, such as the introduction of WLE-influenced new policies and investments. The outcomes are organized again around WLE's three integrating research questions.

a. Balancing healthy ecosystem services with increased agricultural productivity

Implementing investment and business models to foster nutrient recycling from urban waste

WLE's work on investment and business models to foster nutrient recycling from urban waste contributes to achieving the IDOs on sustainably managed ecosystems and improved food safety. The *Resource Recovery and Reuse* Flagship shifted its emphasis from producing innovative research outputs (e.g., Otoo and Drechsel forthcoming 2017) to also ensuring that these become significant, even game-changing, products and services taken up by governments, donors and international agencies. Most cities in developing country are unable to manage solid and liquid wastes effectively, leading to serious pollution and threats to human health. They urgently need cost-effective solutions. WLE's long-term research has produced a suite of technical options and business models, for example, co-composting carbon-rich municipal food waste with dried, nitrogen-rich fecal sludge from septic tanks. This co-compost can be enriched with fertilizer and pelletized, to meet market demand. The resulting product, developed by WLE and its partners, is labeled *Fortifer* and has been officially tested and approved for commercial use in Ghana over the past year.

The Ghanaian Ministry of Agriculture has drawn on WLE research to include waste composts in its fertilizer subsidy program. Also, based on WLE's recommendations, a large-scale co-composting facility in Accra, Ghana, operated as a private-public partnership, started pilot runs in 2016, before its official launch in 2017. Three other plants are planned.[9]

WLE is extending this important work to other countries. For example, in Sri Lanka, IWMI (supported by W1-2 funding from WLE) has incorporated septage management in the national sanitation policy, which is under review by the cabinet. A MoU with the Ministry of Agriculture will support rolling out of RRR solutions, and the President visited several field sites to encourage this roll out. In India, several donors (ADB, World Bank, GIZ, BMGF) and Indian states have requested WLE to advise on management of waste; and, in Nepal, ADB called on WLE to backstop a RRR feasibility study. A recently completed focal region project in three mid-sized cities on the Ganges River recommended decentralized community-based, non-conventional sanitation systems that not only collect and treat waste, but also reuse it, with the possibility

[9] Three further enterprises are planned, aside the WaFo fertilizer plant which is ready. Two of the three new public-private partnerships have been signed: one for the production of Fortifer, one for dry fuel (briquettes). The third one will be on wastewater use for aquaculture. WLE is now waiting for the donor to approve the next phase – the co-financing of the plants.

of partial cost recovery (e.g., co-compost of municipal sludge). This recommendation is now under active consideration by the three cities.

Finally, IWMI has signed a contract with Enviu and its Indian partners to help facilitate partnerships between three promising waste-to-resource companies (which offer a particular waste-based asset and are interested in the Indian market) and different local Indian enterprises interested in partnering to use their technologies and business models. Various Indian and Sri Lankan institutions have also expressed strong interest in the RRR training curriculum, which will be developed in WLE Phase 2. These include the Indian Institute of Management in Bangalore, the Institute of Science and Technology in Goa, the Centre for Science and Environment in New Delhi and the University of Wayamba in Sri Lanka. By transforming waste into an asset for agriculture, WLE is not only supporting soil rehabilitation and fertility, but also providing cost recovery solutions for the waste management sector.

b. Innovative institutional and management practices for improved ecosystem provisioning and gender equity

Scaling out Underground Taming of Floods for Irrigation (UTFI): an innovative management practice

This initiative contributes to achieving at least two IDOs: enhancing and protecting natural capital, and more sustainable management of agro-ecosystems. Specifically, it tackles the dual challenge of flooding and groundwater depletion, by using excess wet season river flows or floodwater to recharge aquifers. This has the potential both to protect lives and assets downstream by reducing flood damage and to boost agricultural productivity by making more groundwater available for irrigation during the dry season. UTFI combines mapping and hydrological modeling with institutional analysis and consultation to design recharge interventions that are low-cost, low-tech, robust and easily managed by farmers. Active community involvement is the key to success. The project is being implemented in collaboration with CCAFS and various Indian partners and communities.

WLE reported initial results of this work in 2015; the full published results are available here. A pilot trial had already been initiated in Rampur District, Uttar Pradesh, supported by the Mahatma Gandhi National Rural Employment Guarantee Scheme. This enabled 2,000 people to be remunerated for participating in establishing a UTFI system by renovating a village pond – an important if modest *impact*. Based on the results of this pilot, Rampur District has now included UTFI in its District Irrigation Plan (DIP) – thus achieving WLE's 2016 planned outcome. The DIP sets aside USD 1.2 million of Government of India funds for its implementation; it is currently awaiting approval by the Chief Secretary of Uttar Pradesh. WLE and CCAFS are undertaking efforts for the Prime Minister's flagship National Irrigation Program (PMKSY) to include UTFI. Trials are planned elsewhere in India as well as in Vietnam and Bangladesh in 2017, with private sector co-financing. A cost-benefit analysis for one district (Moradabad) in north India suggests that the economics of UTFI implementation are favorable, with agricultural production and flood protection benefits greatly exceeding investment and operational costs. WLE expects this initiative to have major long-term impacts in the near to medium future.

C. Ensuring sustainability of investments in water, food, land and energy that meet national and sub-national goals

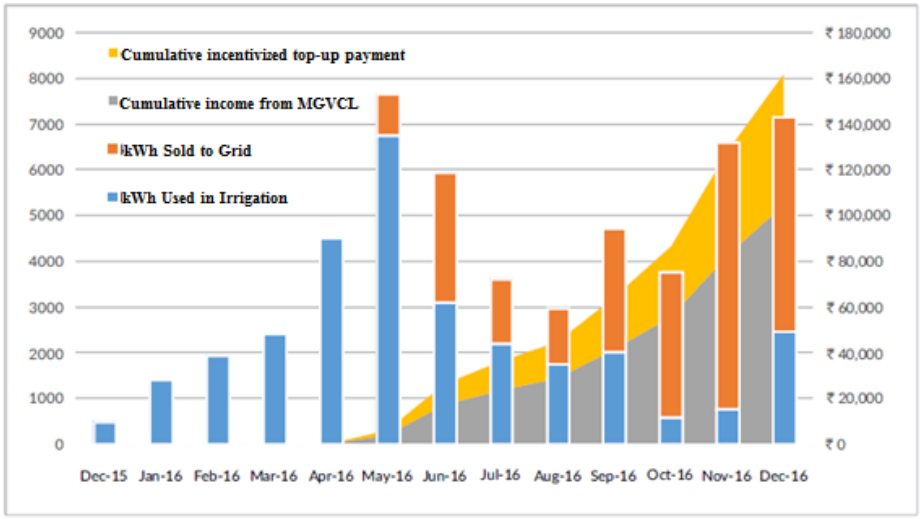
Scaling up a win-win model: Selling electricity to reduce over-pumping of aquifers in India

The IWMI-Tata Water Policy Program (IWPP), co-supported by WLE and CCAFS, fully achieved its planned outcome that the Government of India would use WLE research to improve its solar pump promotion scheme. This outcome contributes to two IDOs: more sustainable management of agro-ecosystems and natural capital enhanced and protected. In May 2016, the world's first Solar Pump Irrigators Cooperative Enterprise (SPICE) commenced operations as a pilot project in the village of Dhundi in Gujarat, India. The cooperative members pool their surplus solar energy and sell it to the local power distribution company under a 25-year power-purchasing agreement. Until May 2016, they had no alternative use for their 'free' power, so it was all used to pump water, depleting the aquifer; but WLE simulations had shown that

farmers would drastically curtail their pumping for irrigation if they could sell their surplus solar power, reducing groundwater abstraction.

As soon as the sale of surplus energy to the grid began, pumping rates started declining. Figure 1 shows the development during 2016: farmers' pumping and electricity usage was rising until the sale of excess power began in May; since the set-up of the cooperative and selling of excess to the local power company, it has been substantially reduced – even in May and December, i.e., before and after the monsoon, when irrigation is required. The *solar power as a remunerative crop* (SPaRC) model contributes to solving two major problems: over-pumping of the aquifer and provision of low-cost electricity for agriculture, which has been threatening the financial viability of the electricity power company.

Figure 1. Solar energy used in irrigation and sold to the grid by the Dhundi Cooperative



WLE believes that in the near future, we will be reporting major impacts directly resulting from this initiative. We have estimated the potential benefits of expanding this pioneering experiment to the ten western Indian states struggling with both aquifer mining and the costs of supplying electricity for irrigation pumps. These benefits include restoring western India's groundwater balance within five to seven years; reducing the cost of subsidies for irrigation pumps; reducing India's annual carbon footprint by four to five percent; and solarizing India's 15 million electric pumps, which by itself will achieve India's ambitious target of establishing 100 GW of solar energy by 2022. The IWPP's solar irrigation pilots have received considerable publicity and official attention,[10] and the Government of Gujarat has sought IWPP's inputs to formulate a state-wide policy for rapid replication of the model. The Gujarat Energy Minister has already announced that the Dhundi model will be replicated immediately and its benefits will be extended to 20,000 farmers under an initial 400 MWp program. In 2017, WLE plans to build on this momentum and implement more field pilots on solar irrigation; a field pilot on solar irrigation service providers has already been initiated in Bihar, involving local entrepreneur farmers.

10 http://indianexpress.com/article/india/india-news-india/gujarat-solar-co-operative-at-dhundi-village-sells-water-instead-of-electricity-2974172/; http://epaperbeta.timesofindia.com/article.aspx?eid=31808&articlexml=this-gujarat-village-is-harvesting-a-sunny-crop-31072016019016; http://indiaclimatedialogue.net/2016/11/21/solar-cooperative-sets-benchmark-eco-friendly-farming/.

C.3 Progress toward impacts

WLE regularly assesses the impacts of adopting many specific natural resource management practices, technologies and policies,[11] including those originating from its own research. The external evaluation of WLE completed in 2016 documented that many WLE research activities are producing outcomes that are likely to achieve significant impacts from 2017 onwards. In most cases, WLE has collected the baseline data as a basis for future impact evaluations. The Program reported two promising examples of incipient impacts in 2015, related to resource recovery and reuse as well as to solar pump policies in India. Section C.2 demonstrates further progress in these areas in 2016, with a focus on collecting evidence of expected major impacts to be a priority for Phase 2.

In 2016, WLE evaluated the local impacts of its work in the coastal areas of Bangladesh, where people face serious livelihood challenges. A recently completed WLE focal region project, also supported by AAS and GRISP, worked with NGOs, local communities and government to pilot-test in four villages of a 30-ha polder, two interventions recommended by earlier research: 1) high-yielding rice varieties and new dry season crops (e.g., sunflower), and 2) revitalization of water infrastructure and its management. IWMI carried out an impact evaluation of both the pilot test and a larger investment program's (Blue Gold) implementation of the water management interventions in the entire polder. The new crop varieties did have higher yields, but marketing problems reduced their profitability. However, the water management interventions at both the pilot and polder levels had very significant positive impacts: reduced waterlogging enabled higher productivity. Farmers' perceptions of the intervention were very positive. The evaluation concluded this intervention has a significant chance of wider adoption because of its low cost and clear benefits; the current Blue Gold program is one vehicle for scaling it out. In 2016, the project got additional funding from USAID's Feed the Future Sustainable Intensification Innovation Lab, and a joint workshop was held to discuss future collaboration. There are similar opportunities emerging from the Mekong delta work.

Other examples of potential major impacts are emerging. WLE and CCAFS are collaborating with private sector insurance companies, government and research institutions to help farmers affected by extreme weather events in Bihar, India, with weather-based crop insurance, called Indexed-Based Flood Insurance (IBFI). IBFI uses remote sensing and modeling to support a low-cost crop insurance product offered by a major private-sector insurance provider, Bajaj Allianz. In 2016, 307,677 ha were covered by flood insurance; after a major flood in August, the project provided crop damage estimates for rice and maize over an area of 30,357 ha, for which Baja Allianz reportedly covered losses of some USD 34 million – a major impact. Finally, the South Asia Drought Monitoring System (SADMS) is a regional drought monitoring platform developed and managed by WLE. In 2016, its data were used by the Sri Lankan Disaster Management Center to manage responses to a very serious drought. SADMS data were also used by the Government of India to plan drought relief activities in several states. This is evidence of an outcome that has likely had substantial impacts, which WLE hopes to document and report in 2017.

D Gender Achievements

A key goal of WLE's gender research in 2016 was to enhance understanding of how increased access to productive resources and to decision-making on collectively managed resources can lead to women's empowerment and stronger engagement in sustainable agricultural intensification. Field research has shown that using a gender perspective to understand land ownership and class, livelihood aspirations, intergenerational change and societal dynamics such as migration is critical to identifying ways to achieve equitable sustainable intensification. The Program has begun translating its findings into tools, manuals

[11] Some of these studies can be found here.

and uptake activities to transform policy and practice to adopt a more nuanced approach to addressing gender in agriculture. A forthcoming WLE brief synthesizes the results of Phase 1 gender research.[12]

WLE's research on land tenure and security for smallholders in Ethiopia, as well as in Ghana and Tanzania, has demonstrated that giving women land tenure rights is, in itself, not enough to achieve more equitable access to resources and services. It is also critical for women to understand their legal rights to land and to have access to production inputs such as seeds and fertilizer. Further, in Ghana, studies have shown that small reservoirs appear to meet women's needs for irrigation crops and raising livestock; however, initial analysis also shows that women will only invest in irrigation technology if it proves profitable, is affordable and the investment does not require too much of their own labor, which is in short supply.

However, based on research in India, Bangladesh and Nepal, strengthening land and tenure security can often enhance access to irrigation for marginal women farmers. This is important as ostensibly well-meaning irrigation programs in Nepal, India and Bangladesh often entrench unequal access to resources for women and men (Clement and Karki 2016; WLE 2016). Further, male-centric gender ideologies often restrict women's access to subsidies and other services.

Other research in South Asia and China documents how gender and age roles are being transformed due to migration, and these very changes are making it more challenging for those who stay behind to access water and resources. The WLE team has organized migration policy dialogues in India and China, and at Stockholm Water Week, to share experiences and best practices from across the region. The dialogues examined how to 1) support women and older farmers in adapting to change arising from migration, and 2) encourage youth to channel migrant remittances and skills to build sustainable livelihoods at home. These dialogues preceded WLE's new MARIS network (Migration, Agriculture and Resilience Initiative for Sustainability), which includes a range of policy-makers, academics and practitioners.

Exciting research started in 2016 is also showing how women are engaging in collective action around water and land. Work in Nepal shows the importance of women's agricultural collectives to achieve economies of scale and improve their bargaining power with landowners. This model is now being piloted by government and NGO partners across the Eastern Gangetic Plains. Yet at the same time, research in East Africa, Myanmar and South Asia has also shown how women's membership in collective management organizations is frequently constrained, even where national policy supports their roles, often due to 'tokenistic' inclusion such as quotas (WLE, 2017; Yami 2013; Dewan et al. 2014). Quotas are a necessary but not sufficient condition for meaningful participation. A study in Ghana illustrates the negotiation role of women when there are conflicting demands on water for livestock and vegetables.

There were also important achievements on gender capacity building and outreach. The Mekong fellowship program saw 38 research projects started, of which 15 address gender issues. More than 150 practitioners and experts from Ethiopia, Tanzania and Ghana came together in a series of workshops[13] organized through WLE's Innovation Lab for Small Scale Irrigation (ILSSI) project to discuss options for improving gender equity in irrigation. WLE also launched a manual on participatory gender training for community groups; and outputs from WLE research in India and Bangladesh have been used to reform the agricultural curriculum in two universities.

E Partnership-Building Achievements

The external evaluation of WLE (IEA 2016) found the Program's comparative advantage to be based on its large number of diverse partnerships, especially those bridging the agriculture, conservation, food security

[12] WLE. Forthcoming, 2017. *Gender equitable pathways to achieving sustainable agricultural intensification*. Sustainable Intensification Implementation Brief No. 7.

[13] For a summary of the results of the workshops, see: https://wle.cgiar.org/thrive/2016/07/11/science-pulse-what-we-know-and-what-we-dont-know-about-womens-participation-water. Also see: https://wle.cgiar.org/thrive/2016/07/11/science-pulse-what-we-know-and-what-we-dont-know-about-womens-participation-water.

and energy sectors, and on its growing collaboration with commodity centers. WLE's 2016 engagement with key partner types, as identified in WLE's partnership strategy, has been as follows:

Innovative research partnerships

WLE researchers have joined three influential nexus-related research networks: the Sustainable Water Future Program, Future Earth Nexus Knowledge Action Network and the Food, Energy, Environment and Water Network. This has facilitated WLE contributions to a co-edited Special Issue of *Water International* and participation in a Special Issue of the *International Journal of Water Resources Development*. These networks have also enabled engagement with several high-level panels related to the nexus, including an invited panel presentation on "The Food-Energy-Water Nexus: Useful Concept at the Science-Policy Interface?" at the United Nations Environmental Assembly (UNEA) Science Policy Interface in Nairobi, and a panel event at the Budapest Water Summit that focused on interlinked risks in achieving the SDGs where, among others, a publication to which WLE researchers contributed was presented.

Throughout Phase 1, WLE has been developing an innovative platform, WaterAccounting.org, led by IWMI, FAO and UNESCO-IHE. Several donors, especially DGIS and ADB, have expressed interest in this partnership. In the Nile, Mekong and Volta river basins, the water accounting platform has been used to identify the effects of, and trade-offs between, agricultural intensification and other water-dependent ecosystem services such as fish. An annual summer course has been initiated by UNESCO-IHE, with 31 participants from 19 different countries, including UNESCO-IHE students and external participants (e.g., from ADB, World Bank, ACIWRM, DGIS and Jain irrigation).

From discovery to impact

WLE launched two new research-into-practice platforms in 2016. MARIS, discussed in Section D (gender), unites national and international experts to develop adaptive solutions to the impacts out-migration has on agricultural communities. The network is led by IWMI, with support from the South China Agricultural Institute, and will form an integral part of Phase 2 work on *Gender, Youth and Inclusiveness*. WLE also launched the Groundwater Solutions Initiative for Policy and Practice (GRIPP) – with more than 25 organizations joining as partners, including the World Bank and Global Environment Facility. GRIPP works on improving groundwater governance by supporting the identification and dissemination of innovative solutions. GRIPP also participated in more than six international and regional events and presented at a high-level panel on Adaptation of African Agriculture in preparation for COP 22 in Marrakesh.

WLE presented research findings on opportunities to link landscape restoration, climate change and livelihood improvement at the 2016 Global Landscapes Forum (GLF), where over 5,000 people participated in identifying practical solutions land management solutions to adapt to climate change. Germany has agreed to fund GLF to work on restoring 400 million ha of degraded land. WLE played a leading role in developing the program and will, through CIAT, continue to be a coordinating partner and use GLF to convene actors working on restoring degraded landscapes.

Investors and donors

Public investors are increasingly recognizing WLE as a trusted partner in building sustainability into large-scale agricultural water investments. WLE has provided technical inputs to the Irrigation Initiative in Sahel (2iS), with WLE researchers participating in high-level consultations between funders, ministries of the Sahel countries and the World Bank on 2iS, in April 2016. This innovative regional project is now waiting for approval by the World Bank. WLE is also a partner in large USAID-supported Feed the Future Initiatives to generate new knowledge, such as Africa Rising and ILSSI.

As explained in Section C.2, WLE's RRR work continues to generate outcomes, which would not be possible without its strong partnerships. WLE has formalized its partnership with the RUAF Foundation, which excels in global networking around urban food security and convening multi-stakeholder dialogues. RUAF will become a co-leader of the *Rural-Urban Linkages* Flagship in Phase 2. Multiple donors have also requested technical support on RRR.

Collaboration with other CRPs

Collaboration with other CRPs also takes a multi-sectoral approach, demonstrating the value of WLE as an integrating CRP. For example, as reported in Section C.3, WLE and CCAFS are working to improve farmers' ability to bounce back from extreme weather events with weather-based crop insurance, Indexed-Based Flood Insurance (IBFI). CCAFS is also a partner in the work on solar irrigation pump policy and the Underground Taming of Floods for Irrigation work, both in India (Section C.2). GRISP and AAS are partners in the work on improving the productivity and sustainability of agriculture in the Ganges delta (C.3); and WLE worked with Dryland Systems to develop business models for solar pumps in Ethiopia. Annex 3 provides additional details. Building on this work, WLE will take collaboration with other CRPs to a new level in Phase 2.

F Capacity Development

In 2016, WLE supported future research and scientific leaders through fellowships to 326 long-term trainees. In addition, WLE enhanced national and sub-national institutional strength and developed organizational capacity through partnerships and co-development of tools for decision-makers and curricula for tertiary institutions. Research results were used to develop curricula for agricultural training institutions to improve capacity within WLE's external research partners. WLE continued to support RRR start-ups in India (see Section C.2, above) and, for the fourth year, summer schools on urban agriculture and food security. Short-term training on various topics was provided to 11,790 people of whom about a third were women, most from collaborating institutions. Finally, the ICRAF Soil-Plant Spectral Diagnosis Laboratory provided training to scientists and subject specialists, using new manuals and video materials.

WLE's use of *innovative learning materials and approaches* was also strengthened, using dialogues and multi-stakeholder platforms to create networks between local people, scientists and decision-makers. In 2016, WLE supported 14 active platforms, such as the innovation platforms in Ghana, organized at the district and community levels to develop advocacy capacity on ecosystem services. The voices of men and women at community level were captured in a participatory video and shared with relevant stakeholders, and outreach enhanced through regional radio programs. Online platforms were also developed to promote learning between researchers and scientists at the global level: the WLE-sponsored Nile Water Lab was used for education and in workshops to share knowledge and perspectives across disciplines and levels of expertise on Nile issues. In addition, more effort is being placed on developing innovative learning materials that can reach more people. In the Mekong and Volta basins, games and gamified educational materials were developed; and the water quality game is being considered for upscaling by implementers in the Greater Mekong region.

WLE continued to support *capacity development for gender sensitive approaches and achieving equity*. The Gender in Irrigation Learning and Improvement Tool (GILIT) was successfully piloted in Malawi and Uzbekistan. It identifies which policies and operational procedures in formal irrigation schemes need adjustment to promote gender equity and to facilitate learning (Rubin et al. 2016; Lefore and Wright 2017[14]). Another relevant gender tool developed by WLE is the Evaluating Land Management Options (ELMO) tool, which offers a participatory, user-friendly and gender-sensitive approach to evaluating land management options from farmers' perspectives. Overall, of short-term trainees, 32% (3,775) were women, and 29% (96) of long-term trainees were women. Increasing the participation of women in capacity development initiatives will be a priority for Phase 2.

WLE used its research findings from South Asia to prepare and test a manual for participatory gender training of farmers, to be implemented through community-based organizations (CBOs) and NGOs (Leder et al. 2016). The manual has generated interest from beyond South Asia, and the training webinar was

[14] Lefore, N. and E. Weight. forthcoming, 2017. *Improving learning and performance for gender equitability at field level*. Unpublished paper.

attended by 45 practitioners and researchers. A separate training was also organized for staff of iDE Nepal to support more gender sensitive irrigation interventions.

G Risk Management

WLE monitors four risk categories: 1) financial and fiduciary; 2) governance and management; 3) delivery; and 4) reputational. Probability and impact are scored against a three-point scale (high/medium/low). Risks marked high are monitored more carefully and have detailed contingency plans. Risks in 2016 with the greatest potential impact remained the same as for 2015: 1) funding uncertainty and instability; 2) sustaining staffing levels; and 3) implementation of program planning and delivery.

Funding instability. This remained the paramount projected 2016 risk. W1-2 funding was cut by 55% to USD 9.8 million at the start of 2016, but then USD 1.8 million (from DFID) was reinstated at the end of the year. This instability affected planning and delivery in this critical final year of Phase 1, as WLE was not able to continue certain activities important to delivering on outcomes and impacts, and important cross-learning and integration activities with other projects. The cuts also had negative effects on our relationships with some partners when WLE could not meet its commitments for completing projects.

Key actions taken in 2015/2016 to mitigate the effects on WLE's commitments included working closely with our partners to attract more bilateral financing; and collaborating with CGIAR colleagues to establish clear rules and procedures in Phase 2 for performance-based allocations and financial transparency.

Sustaining staffing levels. Budget cuts and the impending end of Phase 1 led to greater staff turnover than usual. Turnover was a particular issue in three of the focal regions, where this risk was mitigated by shifting some responsibilities to other senior staff. An aggressive employment strategy has also been adopted, and it is expected that all relevant staff for Phase 2 should be in post by mid-2017.

Program planning and delivery. Three risk areas stood out in 2016. First, working in water and natural resources can be politically sensitive. Communities in Tanzania, for example, requested WLE support to examine the effects of a government pine plantation on water supply; assessing this could potentially put the program in direct confrontation with the government and its interests. Second, achieving outcomes and impacts sometimes take longer than can be accommodated in the project timescale. For example, in Ghana, a co-compost certificate was a key step to get approval to build the Fortifer production plant. However, it took 36 months to get the certificate, by which point the project was over. The risk mitigation is to use W1-2 resources to provide bridging support and to leverage new projects to ensure uptake and delivery. Thirdly, unrest and security concerns were experienced in several program countries, including Ethiopia and Burkina Faso, which delayed implementation.

H Lessons Learned

WLE learned several important lessons during 2016.

1) **The integration of political economy analysis can help enhance the likelihood of uptake, as it helps build understanding of the drivers of change and the critical knowledge needs that can underpin delivery of outcomes and impact.**

WLE has increasingly invested in socio-economic and political analysis since 2015 and in building partnerships with key actors in relevant ministries and agencies who can act as conduits for the uptake of WLE evidence. Examples include WLE's work with Ghana on implementing RRR policies and businesses and the work with the Government of Gujarat in India on pilot testing solar-powered irrigation policies. There is clear evidence that solutions for widely accepted 'needs' are much more likely to be taken up. For example, drought and flood modelling addresses a widely-accepted problem, whereas more generic work on ecosystem services is much more difficult to 'sell', largely because its value is not yet widely understood or appreciated in countries seeking rapid development. In the latter case, providing a context for the research that maps clearly into government structures, sectors and projects can increase likelihood of uptake.

2) **It is important to seek out ways to influence partners to provide medium-term financial support consistent with the time required to move from outputs to impacts**.

Achieving development outcomes at scale from research takes time and typically requires building partnerships and sharing research findings from across a range of projects and actors. Evidence from focal region projects initiated in 2015 suggests that this can take longer than anticipated, often beyond the life of current funding cycles. For example, while WLE researchers sought a commitment from the West Bengal government to merge two projects – one supporting irrigation and another creating women's self-help groups – to maximize opportunities for women's empowerment in agriculture, this did not take place before both WLE projects closed, despite the interest shown by the government. A more concerted effort is required to construct and demonstrate realistic impact trajectories of projects to funders, to enable decisions to calibrate financing accordingly. Short- and medium-term triggers can be embedded against performance indicators to allow funders to withdraw if progress is not commensurate to expectations, as a condition for agreeing on longer-term funding that can allow results to mature.

3) Demonstrating the benefits of landscape-based approaches to sustainable agricultural intensification is important, working especially with Agri-Food Systems (AFS) CRPs.

As WLE increases its emphasis on sustainability in Phase 2, it is important to recognize the potential win-win value of working within a robust landscape and agro-ecological framework. While this makes the research more complex, as multiple variables must be recognized and their interactions modelled, there is growing evidence that it does lead to improvements in people's livelihoods and well-being, while sustaining and even enhancing the quality and productivity of the natural resource system. This is illustrated by WLE's work on SLM investments in the Yewol watershed in the Amhara Regional State, Ethiopia, reported in 2015. Success is being achieved by strengthening local capacity, facilitating collective action, using research to identify niches for integration of technologies at farm and landscape scales and introducing system-compatible technologies.

I Preliminary Financial Report

See Annex 4 for financial reports.

Annex 1: WLE Indicators of Progress for 2016

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	KNOWLEDGE, TOOLS, DATA						
1. Number of flagship "products" produced by CRP	**9 Flagship products** 1. Suitability analysis of underground solutions in terms of mitigation of flood risks (UTF) 2. Draft ecosystem and resilience framework 3. Catalogues of promising RRR business cases and models for nutrient, water and energy (to be published in 2014) 4. Water Accounting (WA+) framework that summarizes water resources conditions and management at the basin level (draft website & two journal papers) 5. Probabilistic Intervention Decision Modeling Platform 6. Global Information and Knowledge Facility for Agrobiodiversity Conservation and Usage 7. Targeting Agwater Management Interventions (TAGMI) - decision support tool	**12 Flagship products** 1. Ecosystem and resilience framework[16] 2. SDG report developed by two task forces on Goals 6.4 and 6.6 submitted for inclusion in the SDGs. 3. Scoping document for the African Regional Assessment of Biodiversity and Ecosystem Services cleared by IPBES 4. Deployment of nationally developed information and communication technologies (ICT) to improve monitoring of large-scale irrigation systems at pilot scale in Pakistan and Sri Lanka 5. Conceptual framework for practitioners working on the economics of land degradation on addressing the costs and benefits of sustainable land management 6. First global assessment of urban and peri urban agriculture 7. Characteristics benefits and risk mitigation of irrigated urban vegetable production in Ghana 8. Flood mapping database 9. Book: Water Scarcity, Livelihoods and Food Security:	**15 Flagship products** 1. MESH Model 2. Irrigated area map of Asia (2000, 2010) and Africa (2010) 3. Soil Organic Carbon Application 4. AfSIS Soil Spectral Prediction App 5. Digital map of soil properties for sub-Saharan Africa at a scale of 250 m 6. Framework on Land Health Surveillance and Response 7. Gender Equality and Equity in Irrigation Scheme Management tool 8. Evaluating Land Management Options tool 9. Benefits of applying decision analysis in development published in Nature 10. Groundwater Drought Risk Map for Sub-Saharan Africa 11. Flood risk maps for South Asia 12. A socio-hydrological approach for incorporating gender into biophysical models and implications for water resources 13. Hydrological Ecosystem Services Assessment formulated and incorporated into Water Accounting framework	**12**	**13 Flagship products** • Soil Best Bets Compendium • Bayesian network models to predict impacts of agricultural management decisions • Sustainable limits to water abstraction for agriculture • Global Environmental Flow Information System • Indexed Based Flood Insurance (IBFI) • South Asia Drought Monitoring System (SADMS) • Mobile Agent-Based Ecosystem Services (MABES) • Maps of transboundary aquifer systems in Africa • Large-scale co-composting facility in Accra, Ghana • UTFI inclusion in the Prime Minister's flagship National Irrigation Program (PMKSY) in India • Solar Pump Irrigators Cooperative Enterprise (SPICE) and Solar Power as a Remunerative Crop (SPaRC) model • Contract with ENVIU to establish waste-to-resource partnerships/companies	**+18%**	**49** (cumulative)

[15] Totals over the period 2013-16 are computed in this final column. In some cases, indicators are peak year, indicating deliverables that span over more than one year (and hence the highest 'peak' year total is taken), In others, the deliverables are in-year, so can be aggregated 'cumulatively' over the time period.

[16] The draft ESR framework was included in the list of flagship products in 2013; however, it is very much a 2014 product, having been published amid a number of activities to put it into action and embed its principles into WLE.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	8. CPWF engagement platforms/innovation platforms 9. WLE Gender Strategy	Research and Innovation for Development 10. Lessons learned on agricultural water management 11. Mapping of Aquifers of Sub-Saharan Africa 12. Peruvian national platform on ecosystem services ▪	14. Participatory gender-sensitive action research toolkit by Agro-biodiversity project 15. Basin Gender Profiles for WLE focal regions		• Decentralized community-based non-conventional sanitation systems for RRR		
2. % of flagship products produced that have explicit target of women farmers/NRM managers	**44% (4 from 9)** • Global Information and Knowledge Facility for Agrobiodiversity Conservation and Usage • Targeting AGwater Management Interventions (TAGMI) - decision support tool • CPWF engagement platforms/innovation platforms • WLE Gender Strategy	**33% (4 from 12)**[17] Characteristics benefits and risk mitigation of irrigated urban vegetable production in Ghana • Book: Water Scarcity, Livelihoods and Food Security: Research and Innovation for Development • Lessons learned on agricultural water management • Peruvian national platform on ecosystem services	**40% (6 from 15)** • MESH Model • Gender Equality and Equity in Irrigation Scheme Management tool • Evaluating Land Management Options tool • A socio-hydrological approach for incorporating gender into biophysical models and implications for water resources • Participatory gender-sensitive action research toolkit by Agro-biodiversity project • Basin Gender Profiles for WLE focal regions ▪	**29%**	**38% (6 from 13)** • Indexed Based Flood Insurance (IBFI) • Large-scale co-composting facility in Accra, Ghana • UTFI inclusion in the Prime Minister's flagship National Irrigation Program (PMKSY) in India • Solar Pump Irrigators Cooperative Enterprise (SPICE) and Solar Power as a Remunerative Crop (SPaRC) model • Contract with ENVIU to establish waste-to-resource partnerships/companies • Decentralized community-based non-conventional sanitation systems for RRR	**+35%**	
3. % of flagship products produced that have been assessed for likely gender-	**33% (3 from 9)** • Socially-explicit integrated solutions to increase eco-efficiency of production systems and enhance ecosystem services and livelihoods	**25% (3 from 12)** • Characteristics benefits and risk mitigation of irrigated urban vegetable production in Ghana • First global assessment of urban and peri-urban agriculture • Lessons learned on agricultural water management	**27% (4 from 15)** • Gender Equality and Equity in Irrigation Scheme Management tool • A socio-hydrological approach for incorporating gender into biophysical models and implications for water resources	**17%**	**46% (5 from 13)** • Indexed Based Flood Insurance (IBFI) • UTFI inclusion in the Prime Minister's flagship National Irrigation Program (PMKSY) in India • Solar Pump Irrigators Cooperative Enterprise (SPICE)	**+169%**	

[17] It has become clear that the definitions of the indicators on targeting women farmers/managers and assessing gender disaggregated impact are subject to varying interpretations and require further definition and guidance by WLE in order for project partners to be able to report accurately. This is being further developed.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
disaggregated impact	• Probabilistic Intervention Decision Modeling Platform • WLE Gender strategy		• Participatory gender-sensitive action research toolkit by Agro-biodiversity project • Basin Gender Profiles for WLE focal regions		and Solar Power as a Remunerative Crop (SPaRC) model • Contract with ENVIU to establish waste-to-resource partnerships/companies • Decentralized community-based non-conventional sanitation systems for RRR		
4. Number of "tools" produced by CRP	**51 tools** Examples include: • Tools for designing crop varietal mixtures for pest and disease management • Manual "Safety guidelines for grey and waste water use in Palestine"; calibrated SWAT model for use in arid environments (Jordan and Ethiopia) • Booklet on community based approach for reuse of Grey-Water at the farm household and video film on community based approach for reuse of Grey-Water at the farm household • Water Impact Calculator (WIC) for irrigation scheduling • Experimental games protocols to measure--and strengthen--collective action for water management (India and Colombia)	**64 tools** Examples include: • LANDREST tool • AUV based remote sensing tools for crop phenotyping and surveillance and monitoring, including crop statistics • Soil-Landscape Estimation and Evaluation Program (SLEEP) • Decision support tool to assess water productivity at the Branch Canal level • Laboratory protocols for soil infrared species • Online spectral prediction app • Soil carbon online measurement guidance • Water and carbon footprint of Colombian agriculture • Tablet-based extension system and farmer-to-farmer videos • Training manuals for extension agents in Ethiopia and Uganda • Improved Environmental Flow Calculator: • Baseline GAMES model (Gangetic Aquifer Management for Ecosystem Services) • RADAR - Rapid Agriculture Disaster Assessment Routine - flood impact tool • Earth Observation Technologies for Flood Risk Mapping, Modeling and Management training manual • Power-law models to predict flow metrics for water resource and risk	**68 tools** Examples include: • Basin gender profiles: Spatially referenced gender information tool for the four WLE focal regions • Participatory gender-sensitive action research toolkit • Water accounting framework for ecosystem services • Psychometric M&E method for the WLE Mekong • Nam Xong Water Balance model • Suite of maps and ensemble models showing the baseline ecosystem service status using WaterWorld in Burkina Faso and Ghana • Updated soil spectral prediction app • 15 Soil-Plant spectroscopy protocols updated • Ghana Soil Information Service • decisionSupport tool: an R Package for Monte Carlo simulation for stochastic impact evaluation • TAGMI tool • Simulation game "Republic of Dhundi"	**54**	**58 tools** Examples include: • PACS (Payments for Agrobiodiversity Conservation Services) evaluation tool in Peru & Ecuador • HYDRUS-1D model to simulate the impact of varaying groundwater levels in Central Asia • PED-WM water balance module model for Lake Tana Basin and Blue Nile • Excel-based decision support system for irrigation scheduling in Karnataka • WLE Basin Tool: a linked online ABM framework for basin modeling and scenario analysis • Diagnostic tool to facilitate gender integration in irrigation • Kabul River Basin Geodatabase and Mapping Tool • Community score sheet to collect community perceptions of basin-scale indicators • Short list of sanitation solutions with cost-functions, and O&M costs • *decisionSupport* package. • 19 new decision models across 3 regions	**+7%**	**68** (peak year)

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
		management along the Mekong tributaries • Android app for ground truthing data • Set of tools for on-farm wastewater treatment • Tools for production of certified seed and ecological management practices, Bolivia • Web based tool for ES (agriculture, land use, and land cover) visualization over time • Model of aquifer storage recharge and recovery • Groundwater model of Karshi Steppe • Hydrological and water systems models for the Koshi basin • Community seed banks • Tools and approaches for soil carbon determination • Tools for policy analysis			• Training manual for landscape soil carbon stock inventory • Guideline on gender, agrarian transformation and water access in Eastern Tarai of Nepal • A memory game for non-monetary valuation of ecosystem services • Bagrepoly Role Playing Game on Bagré management • Economic tools for valuation and trade-off scenarios of ecosystem services in four pilot wetlands • Guideline on regulating pest and disease and pollinator services for high elevation crops in Nepal & Uzbekistan		
5. % of tools that have an explicit target of women farmers	**35%**	**16%**[18]	**83%**[19]	**67%**	**100%**	**+50%**	**100%** (peak year)
6. % of tools assessed for likely gender-disaggregated impact	**20%**	**16%**	**26%**	**21%**	**57%**	**+169%**	60% (peak year)

[18] It has become clear that the definitions of the indicators on targeting women farmers/managers and assessing gender disaggregated impact are subject to varying interpretations, and require further definition and guidance by WLE in order for project partners to be able to report accurately. This is being further developed.

[19] In 2015, this indicator was redefined as the number of tools that target women farmers from the total number of tools that target any farmers. 2016 target reflects this redefinition.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
7. Number of open access databases maintained by CRP[20]	**50 databases** Examples of databases maintained by WLE partners include: • Database on soil and nutrient losses via runoff in potato-pasture rotations (Colombia) • Global Weather Data for SWAT http://globalweather.tamu.edu/ • AfSIS spectral and reference library • Land health surveillance databases • Data from field experiments at micro-watersheds, water use efficiency, varietal performance and conservation agriculture • National databases on diversity and disease field measurements assessment • 4 on farmer access to seed sources for traditional varieties • 2 community seed bank data sets (China and Uganda)	**38 open access databases**[21] Examples include: • Online AQUASTAT Wastewater • Database on morphology and functional traits of fruit tree species and related socio-economic survey data, Central Asia • Catalogues of seed varieties • Database on pest control functions in agricultural landscapes • GeoDatabase (GDB) on land degradation in Africa • AfSIS Kaggle challenge • COMPRO-II website – data on commercial products dissemination • N2Africa website – data on nitrogen fixation • Environmental Flow based on management class data • Database of flow measurement across distributary canals, weather data, groundwater data, tubewell data; geospatial coordinates; Databases on Crop yield, Flood Extent, Flood forecasting. Available on Water Data Portal • Data on CAADP core indicators available at ReSAKSS website	**51 open access databases**[22] Examples of updated databases include: • Hydrological Ecosystem Services Assessment incorporated into the Water Accounting framework • Water accounts for Nile basin and 15 Nile sub-basins including data on resource base, evapotranspiration, agriculture, utilized flow and groundwater for 2005 – 2010 • Water accounts for the Mekong, including evapotranspiration and agriculture data for 2005 – 2010 • Soil Organic Carbon Application • Africa Soil Information Service • Eco-hydrological databases • Soil property maps of Africa at 250 m • Maps of surface and groundwater contributions to environmental flows for world regions and basins • Hydrological, primary and secondary socio-economic data for Ganges basin and Ramganga sub-basin • South East Asia flood risk maps • Soil salinity map of Aral Sea Basin for 2010-2014 period • IFPRI International Model for Policy Analysis of Agricultural	**41**	**63 open access databases**[23] Examples of updated databases include: • Indus Basin Knowledge Platform • Landscape Baseline Assessment (LBA) soil properties data in hillside ecosystems of El Salvador • Field measurements on soil health metrics (soil water infiltration and erosion) in the Tana River Basin • Field measurements of soil health and effects of SLM practices in Southern Africa • Field data and FGD findings on AWM and Ecosystem Services in the Nile Delta, Egypt and South Kazakhstan • Household surveys & FGD data on climate change mitigation and livelihood perceptions in Peru & Colombian Amazon • Household survey data assessing valuation of ecosystem services, agricultural productivity, and acceptance of agronomic practices in Kenya • Field data, modelling outputs, FGDs and spatial data from the Nile Delta, Egypt and South Kazakhstan.	**+54%**	**63** (peak year)

[20] This indicator refers to databases "maintained" and will therefore include some databases reported in previous years. Only new or updated databases are provided as examples.

[21] 2014 reporting for this indicator include both datasets and databases.

[22] 2015 reporting for this indicator includes both data sets and databases. 2016 work plans and reports disaggregate databases and datasets, and reported 2016 target accounts for only databases.

[23] 2016 reporting for this indicator distinguishes between datasets and databases. In 2016, 10 open access databases, 11 non-open access databases, and 4 data sets were recorded, for a total of 34 entries per the 2013-2015 definition of indicator.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• 4 on farmer diversity management practices • Water accounting portal • TAGMI	• Flow data available on Water Information System of Sri Lanka (WISSL) • wateraccounting.org database, including datasets on water accounts, precipitation, land cover, etc) • Online map of irrigated and rainfed areas for Asia • National irrigation schemes databases for Tanzania and Zimbabwe	Commodities and Trade (IMPACT) database		• RIMS (RAMOTSWA Information Management System) • MHRI database within Myanmar Water Information System • Soil nutrient maps of Sub-Saharan Africa at 250 m spatial resolution • Soil health monitoring database to improve agricultural statistics in Ethiopia and Uganda		
8. Total number of users of these open access databases	105 users 12000 downloads confirmed	1,643[24] users accounted for 20,000 visitors to AQUASTAT Wastewater database	**FAO** Aquastat Wastewater Database**:** 4,236 entrances, 9,753 page views **CGSpace**: 284,585 views and downloads **IWMI Water Data Portal**: 4,668 users[25]	**FAO** Aquastat Wastewater Database:[26] 3,705 entrances, 12,021 page views **CGSpace**: 40,051 views and downloads **IWMI Water Data Portal:** 15,022 views		-	
9. Number of publications in ISI journals produced by CRP	76 ISI Publications 235 peer reviewed publications	150 ISI Publications[27] 191 Peer Reviewed Publications, not published in ISI	141 ISI publications, average IF: 3.805 65 externally peer-reviewed publications, not published in ISI	**113**	**142 ISI publications**, average IF: 2.28; 28 externally peer-reviewed publications not published in ISI journals	**+26%**	**509** (cumulative)
10. Number of strategic value chains analyzed by CRP	**Not applicable to WLE**						

[24] In 2014, 42% of databases provided user data.

[25] In 2015, page views were reported as following: FAO Aquastat wastewater database: 11,841 users; IWMI WaterData Portal: 4,668 users: CGSpace: 284,585 users. These numbers have been updated to make them consistent with 2016 definitions.

[26] Metrics for Indicator 8 were more clearly defined in 2016. This includes the following definitions: **Entrances:** Number of times visitors entered the site; **Page Views:** Total number of pages viewed under this site; **User**: unique visitor to each database. 2015 and 2016 numbers have been modified to reflect this change.

[27] 7 of the articles published in ISI journals in 2014 were included in the figure provided for 2013 peer reviewed publications.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
11. Number of targeted agro-ecosystems analyzed/characterised by CRP	**96 targeted agro-ecosystems.** Examples include: • Floodplains/delta rice and fish of Southern Bangladesh and Mekong • Plains of West India (Bengal and Bihar) • Maize & bean systems Ecuador highlands • Traditional rice diversity upland and lowland zones • Traditional maize diversity upland and • tropical maize • Bolivia, mixed cropping dominated by potato in upland and subtropical areas • Burkina Faso, mixed crop, livestock systems • in sub-Sudanian, sub-Sahelian and Sahelian areas • Nepal, mixed cropping dominated by rice in upland (2500 masl) and subtropical areas • Uganda, mixed crop and livestock system in highlands, medium high farmlands and wooded savannah • Mixed crop-livestock system: potato-pasture rotation (Colombia) in Tropics-cold	**101 targeted agro-ecosystems.** Examples include: • Irrigated cotton-wheat rotation agro-ecosystem of Syr Darya and Amu Darya • West Bengal Terai, Old alluvial zone, Red and laterite zone • Rainfed Irrigated Surface/continuous Irrigated System; Orchards; Mixed cropping; Sorghum (Africa) • Ethiopian highlands mixed crop and livestock systems; Mixed crop livestock system, Amhara, Ethiopia • North Central Sri Lanka mixed cropping (rice and field crops) • Tonle Sap, Cambodia rice– fish systems and flooded forests • Urban and peri-urban systems (various locations) • Salinity affected drylands (Central Asia) • Bolivia, mixed cropping dominated by potato in upland (3000-4500 masl) and subtropical areas. • Burkina Faso, mixed crop, livestock systems in sub-sudanian, sub-sahelian and sahelian areas. • Nepal, mixed cropping dominated by rice in upland (2500 masl) and subtropical areas. • Uganda, mixed crop and livestock system in highlands, medium high farmlands and wooded savannah	**93 targeted agro-ecosystems**[28] Examples include: • Mixed cropping of barley, buckwheat, millet in high mountains of Nepal • Mixed cropping of rice in humid sub-tropics of Sri Lanka • Tropical fruits in suburban and smallholder farms (conucos) in Bioshephere reserves of Cuba • Degraded highlands in Tigray and Oromia (Ethiopia) • Fruit tree orchards (almond, apple, apricot and pistachio) in water-scarce and salinized environments of Uzbekistan (drought and salinity-tolerant) • Irrigated rice in precipitation-limited regions of the Volta Basin, rainfed family farming systems • Mixed cropping of fuel and fruit trees in maize-bean based systems of sub-humid El Salvador • Rainfed landscapes of northern Tanzania • Smallholder agroforestry and silvo-pastoral systems in Nicaragua • Oil palm plantations at the agriculture-forest interface in Peru • Rainfed smallholder agricultural systems of sub-Saharan Africa • Agro-pastoral landscapes in the Volta basin • Potato in water-scarce landscapes of Ethiopia • Rainfed arid and semi-arid rangelands of Peru	**74**	**102 targeted agro-ecosystems**[29] Examples include: • Rain-fed maize production in East Africa • Beans, finger millet, buckwheat mixed cropping in high mountains of Nepal • Drought-tolerant multi-cropping systems in Kenya • Grazing/pastoral lands in upper Tana basin • Flood-based farming systems in Sudan and Ethiopia • Rain-fed maize in East Africa • Dry season cropping of leafy vegetables and cowpea in northern Ghana • Fruits and nuts (almond, apple, apricot and pistachio, walnut) in mountainous, water-scarce and salinized environments of Uzbekistan (drought and salinity-tolerant) • Rice-cropping in China • Smallholder cropping of sweet potato in Tanzania • Agro-pastoral landscapes in the Volta basin • Potato in water-scarce landscapes of Ethiopia • Rainfed arid and semi-arid rangelands of Peru • Managed revegetated landscapes in the Gash Die and Raya basins • Mixed livestock and small-scale forestry in Sudan • Rainfed smallholder agricultural systems of sub-Saharan Africa	**+10%**	**102** (peak year)

[28] WLE operated in 40 countries in 2015, down from 49 in 2014, due to the budget cuts. This, along with a revision of the methodology to estimate in which agro-ecological zones WLE was operating and characterized (the revised methodology involved direct assessment using geo-referenced data and based on the FAO classifications), the total (86) was 14% below the target of 100.

[29] This total is based on 2015 geospatial methodology, which utilizes project locations, basins served, and Gridded Population of the World data.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• Forest and mixed cropping in the Amazon (Colombia and Peru) • Rangeland in marginal areas (Jordan) • Highland rainfed systems of Ethiopia • Guinea savannahs mix crop systems of maize/cowpea or maize/soybean • DR Congo, Kenya, Tanzania and Nigeria; grain and legume cropping systems	• Uzbekistan, mixed cropping dominated by fruit and vegetable production in semid-arid and arid areas • DR Congo, Kenya, Tanzania and Nigeria; grain and legume cropping systems	• Peatlands in Central Peruvian Sierra • Irrigated crop-livestock systems in Indus basin of Pakistan • Salinity-affected drylands in Syr Darya River, Fergana Valley • Desert-wetland interfaces in Egypt • Flood-based farming systems in the Nile Delta • Sorghum-based systems in the Ethiopian highlands • Crop (Maize, Sorghum, Pigeon pea) and livestock systems in Zambezi floodplain • Dry-season irrigation and flood recession agriculture in Nigeria • Maize and soybean cropping in smallholder farms of sub-Saharan Africa • Mixed farming of cassava with maize and grain legumes in African Humidtropics • Pastoral systems of African rangelands • Dry season vegetable production and recession agriculture in Nigerian floodplains • Salinity-affected rice production and aquaculture in the Nile delta • Irrigated saline drylands in Karshi steppe, Uzbekistan • Salinity affected soils of the Aral Sea Basin • Dry season agriculture in Himalayan mountain eco-regions of Nepal		• Agro-pastoral landscapes in the Volta and Tana basins • Agroforestry and silvo-pasture in dry tropical forest climate in Nicaragua • Rainfed cropping in Nile, Niger and Limpopo systems • Coffee in central highlands of Vietnam • Gully-prone watersheds in sub-humid Ethiopian highlands • Wheat in degraded dry highlands and agro-pastoral lowlands of western Ethiopia • Irrigated landscapes in Lebanon, Jordan, and Tunisia • Rainfed rice-based systems in Vientiane Plain, Lao PDR • Flood-prone small-scale vegetable systems in Sri Lanka • Central American livestock production, pastures and forage legumes • Urban and peri-urban wetlands in Kolkata, India • Flood-based farming systems in the Nile Delta (Sudan, Ethiopia) • Irrigated and fisheries-based landscapes in Ayeyarwady and Mekong delta • Irrigated drylands in Fergana valley • Sub-humid areas of Nicaragua • Dry season agriculture for marginal and tenant farmers in Eastern Gangetic Plains		

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
12. Estimated population of above-mentioned agro-ecosystems		548,527,860 [30]	583,379,142 [31]	NA [32]	**561,200,417** [33]	**-4%**[34]	
	CAPACITY ENHANCEMENT AND INNOVATION PLATFORMS						
13. Number of trainees in short-term programs facilitated by CRP (male)	**5,875 male trainees** Examples of training topics include • Gender in WLE • Crop model validations, trade-off analysis • model Salinity sampling and measurement, • GIS/GPs for data management; • Remote sensing in irrigated agriculture • How to run experimental games, • Debriefing communities on how they can manage water better collectively • Integrated farming techniques • Mekong Regional Forum on Water, Food and Energy (250)	**9287 male trainees** Examples of training topics include • Establishment, management and utilization of cultivated forage to target seasonal livestock markets in Ethiopia • Principles of Integrated Soil Fertility Management (ISFM) • Salinity management • Soil amendment techniques • Greywater use • Aqua Crop Model • Promising agricultural practices in Central America • Ecosystem services and rural landscapes • Integrated approaches to watershed development planning • Remote sensing data, flood modeling and management and rapid emergency flood mapping. • RRR business development training • SWAT watershed modelling	**7388 male trainees** Examples of training topics include • Pest and disease management, seed multiplication and management of banana, maize, and bean • Data collection and analysis to reduce crop damage and increase yields • Ecosystem-based management and valuation • Improved watershed management using a benefits sharing mechanism (Water Fund) • Using Nature Capital toolbox to assess multiple ecosystem services • Climate change scenario modelling using Soil and Water Assessment Tool • Analysing climate data and climate change scenarios using basic statistical tools • Controlled drainage	**5910**	**9105 male trainees** Examples of training topics include: • IPM and nutrient management strategies for improved pastures and forages under ABES in El Salvador • Data analysis workshop for water quality assessment in Tana River basin • AFS and SPS implementation in sub-humid areas of Nicaragua • Diversity Field Schools in Nepal and Diversity Field Fora in Mali • Operation of drip and sprinkler kits in Bhungroos • Workshop on UAV-based Remote Sensing for Smallholder Cropping Systems in East Africa • Field demonstrations of controlled drainage in Uzbekistan • Farmers participatory science-led interventions in Bundelkhand region of Central India	**+54%**	**30,565** (cumulative)

[30] Interpretation of this indicator has varied significantly and therefore this figure generated from partner reports is not considered reliable. A methodology for harmonized monitoring of indicator 12 on populations is being developed for application both in the coming year and retroactively.

[31] An improvement in the methodology for agro-ecosystems (#11) had a knock-on effect on associated population estimates in these AES – with the total number at an estimated 582 million, slightly up from 548 million in 2014.

[32] No target set for this indicator during 2013-2016

[33] This total is based on 2015 geospatial methodology, which utilizes project locations, basins served and Gridded Population of the World data.

[34] Deviation compared to 2015 actual.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
		• Mechanised raised bed technology	• In-situ water quality analysis using AQUAMETER • Technologies for drying and processing vegetables and fruits • Impact of various AWM interventions on ecosystem services • Using earth observation technologies for flood risk mapping and forecast rating curve • IWUA establishment and strengthening • GPS and GIS data processing for irrigation system operators • Use of Mobile Weather Stations for water management • Soil Information Systems in Ghana, Nigeria, and Tanzania • Spectroscopy and spectral technology, protocols, and principles • Integrating income generating activities with ongoing NRM interventions • AWM adoption barriers and feasible strategies		• Gender integration in irrigation trainings in Ethiopia, Ghana and Tanzania • Flow measurement and rainfall runoff modelling • MerSim model for scenario-based analysis • Soil analysis, pests' control, potato seed selection, potato seed certification, potato seed labelling. • Crop diversity to meet national and international market preferences • Modern and traditional methods for producing and storing planting material; • Rules, tools and methods for marketing and commercializing fruit and vegetable crops and derived products		
14. Number of trainees in short-term programs facilitated by CRP (female)	**2,232 female trainees**	5,000 female trainees[35]	**5,653 female trainees**	**4,522**	**4,238 female trainees**	**-6%**	**16,660** (cumulative)
15. Number of trainees in long-term programs facilitated by CRP (male)	**144 long-term male trainees** These were: • PhD – 10 • Master's – 27	**209 long-term male trainees** These were: • PhD – 33 • Master's – 150 • Other (includes Bachelors) – 26	**191 long-term male trainees** These were: • PhD – 15 • Master's – 58	**153**	**119 long-term male trainees** These were: • PhD – 15 • Master's –72	**-22%**	**774** (cumulative)

[35] Gender disaggregated participant data is now generally standard practice for training courses; however, there is a limited number of cases in which it is not clear how many females took part in courses.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• Other (includes Bachelors) – 107	▪	• Other (includes Bachelors) – 118		• Other (includes Bachelors) – 32		
16. Number of trainees in long-term programs facilitated by CRP (female)	**53 long-term female trainees** These were: • PhD – 3 • Master's – 8 • 3. Other (includes Bachelors) - 42	**97 long-term female trainees** These were: • PhD – 17 • Master's -48 • Other (includes Bachelors) – 32	**150 long-term female trainees** These were: • PhD – 8 • Master's -46 • Other (includes Bachelors) – 96	**90**	**127 long-term female trainees** These were: • PhD – 9 • Master's – 76 • Other (includes Bachelors) – 42	**+41%**	**396** (cumulative)
17. Number of multi-stakeholder R4D innovation platforms established for the targeted agro-ecosystems by the CRPs	**22 Stakeholder Platforms:** These include: • Mekong platform on sustainable hydropower • Local innovation platforms on rainwater management in Nile Basin Development Challenge • Local innovation platforms on goat markets in Zimbabwe • Integrated Water Resource Platform in • Ghana and Burkina Faso • Community seed banks (Uganda, China) • Legume and Inoculant Technology platforms • Field days; DR Congo radio broadcasts to showcase N2Africa legume technologies (estimated two million listeners).	24 **Stakeholder Platforms:** [36] These include: • Task force for developing targets for SDG goal 6.4: Water-use efficiency, sustainable withdrawals and water scarcity; • Task force for developing targets for SDG goal 6.6: Protection and restoration of water ecosystems to allow sustained withdrawal • Multi-stakeholder R4D platform on Groundwater development /Lift irrigation in northern Tajikistan • Multi-stakeholder R4D platform on Lift irrigation in northern Tajikistan aimed to improve performance of lift irrigation schemes. • 4 Area Water Board meetings, Asia • Dialogue process on water governance in Pakistan, with authorities, technical experts, service providers and users across the entire geographic area of Pakistan and in the cities	**41 Stakeholder Platforms:** These include: • Roundtables with stakeholders including seed industry, seed producers' associations, plant variety registration and seed quality certification offices in Bolivia, Burkina Faso, Nepal, Uganda and Uzbekistan • WLE engagement with non-research stakeholders in Global Soil Week • Meeting involving experts and water consumer associations on controlled drainage in Fergana valley • Innovation platforms for knowledge-sharing around irrigation in Tanzania, Zimbabwe, and Mozambique • Platform to discuss impact of irrigation technologies on farmer welfare flood recession and dry season farming in Nigeria • Participatory identification of priority ecosystem service sources, flows, threats, and	**33**	**35 Stakeholder Platforms** These include: • Inter-provincial and basin-wide dialogues among riparian members and stakeholders engaged in Indus Basin Knowledge Platform • Indus Basin Knowledge Platform • Groundwater Solutions Initiative for Policy and Practice (GRIPP) • Consultation with TNC, CIAT, and National Capital Project at Nairobi Water Fund (NWF) Steering Committee • Peruvian pilot scheme on Rewards for Ecosystem Services in watersheds • Methodological/conceptual framework for ecosystem valuation in the context of land degradation, with specific attention to gender • Agrobiodiversity for restoration platform to collate online the outputs of the project and propose visualization of species distribution.	**+6%**	**41** (peak year)

[36] The actual number reported was higher, but only those platforms for which details have been provided are reported here. Not included in this figure is engagement with existing platforms set up by third parties. It is noted that the focus of this indicator does not encourage engagement with existing platforms set up by third parties.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• Intervention decisions with sufficient representation from multiple stakeholders to fulfill the criteria (Sasumua, rainfed, Merti)	of Karachi, Peshawar, Quetta, Lahore, and Islamabad • New collaboration between MUS Group and Rural Water Supply Network Gender conference as new, unique platform • Strategic Analysis and Knowledge Support (SAKSS) nodes operating in Zambia, Mozambique and Malawi are three multi-stakeholder platforms that bring together knowledge generators, consumers and policy makers to advancing evidence-based policy planning and implementation • Innovation Platform established in Fogera under NBDC, used as the platform for work under Afromaison • Multi-stakeholder platform for the Ramotswa Aquifer • Stakeholder platform for Privately managed open wells and; Community managed drilled wells, Lao PDR • IWMI-India Water Policy Program will work with Bharatiya Rural Livelihoods Foundation (BRLF) to activate and energize its policy advocacy for kickstarting India's second White Revolution to empower and strengthen livelihoods of Adivasi women in central India's tribal heartland along the Vasudhara model. • RRR stakeholder platform on resources under multiple pressure in urban and peri-urban areas • Platform of 15 community seed banks	governance in Kenya and Burkina Faso • Consultative workshop on rangeland management and rangeland ecosystems services in Ouagadougou • Consultative social network analysis of fodder value chain actors in Burkina Faso • National Platform on Agricultural Water Management in Ethiopia • Regional Dialogue on Groundwater Governance in the Arab World • Stakeholder workshops to identify key investment climate indicators for RRR sector in Kenya and Ghana • SWAT Community of Practice • Stakeholder forums regarding river health indicator system in the Mekong • Consultative workshop on compensation policies and market property of on Lower Sesan 2 organized by NGOs Forum on Cambodia • Mekong impact assessment (MDS) conducted by Vietnam • Understanding Salween-Than Lwin-Nu Water Governance: Making links between local and non-local research strategies • Stakeholder innovation platforms in four districts in Ghana to elicit opinions, facilitate horizontal and vertical dialogues, and assess the opportunities and constraints that women and youth face in irrigation development • Farmer Meet Buyer Forum to unite farmers and irrigation scheme extension officers in Zimbabwe		• Partnership to improve fertilizer use efficiency at landscape scale in Ethiopian highlands • Agricultural Innovation Platform (AIP) to engage stakeholders involved in the irrigations schemes to resolve systemic challenges in Mozambique, Tanzania and Zimbabwe • Country Soil Health Consortium in Nigeria, Ghana and Niger, Mali and Burkina Faso • Roundtable engagements on Pradhan Mantri Krishi Sinchai Yojana (PMKSY) and the Accelerated Irrigation Benefits Program (AIBP) in Gujarat, India • Aquifer dialogues and stakeholder engagements in Tunisia, Jordan, and Lebanon on the unsustainable use of groundwater in the MENA region • Kabul River Basin Knowledge Platform • Spate Irrigation Network • MUS for climate resilience in Nepal • Working together for a better Kachin landscape • 12 community-based platforms and 4 district multi-stakeholder platforms to identify the costs and benefits of EBM and practices at household level and landscape scale • Ihemi Cluster Green Reference (IGRG) Group • Cambodia Women's Water Network		

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
		• Engagement with Barotse communities on ecosystem services • National Platform to support mechanisms of rewards for ecosystem services in Peru. • 5 country soil health consortia established in 5 countries of West Africa					
	TECHNOLOGIES/PRACTICES IN VARIOUS STAGES OF DEVELOPMENT						
18. Number of technologies/NRM practices under research in the CRP (Phase I)	**140 technologies/NRM practices under research in WLE** Examples of these technologies and practices include: • Knowledge and practices, where intraspecific diversity is being used to manage pest and disease pressures, gives global trend that increased on-farm crop varietal diversity reduces variance in pest and disease damage – a measurement of reduced likelihood (reduced vulnerability) to crop loss from crop varietal diversity • On-farm and on-station experiences identified high and medium resistance in traditional varieties of target crops	**106 technologies/NRM practices under research in WLE** Examples of these technologies and practices include: • Irrigated cultivation of oats/vetch forage and cultivation of indigenous grasses on field margins and bunds of irrigated areas for fattening small ruminants for seasonal markets • Bayesian Belief Network and R package prototypes for probabilistic evaluation of agricultural interventions on livelihoods and environment • Mirt Stove Technology in Ethiopia • Non-tangible technology transfer i.e., conservation of ecosystem services by means of incentives that reward the activities that enhance the provision of the services • Water and Carbon footprint of the Colombian Agriculture; • Potato farmers field techniques • Threatened genetic resources prioritization protocol further adapted	**175 technologies/NRM practices under research in WLE[37]** Examples of these technologies and practices include: • 1 Octocopter and 1 quadcopter being tested in Africa; 2 Octocopters tested in Lima • Diversity kits to detect best varieties of amaranth grain • Diversity Field Schools in Nepal • Community mapping of processing equipment to understand and test adapted technologies for neglected and underutilized crop species in Nepal • Effect of mixture and fertilizer on Northern Leaf Blight in rice and maize varieties in China and Ecuador • Effect of genetic diversity on pests and diseases in durum wheat and faba bean varieties in Morocco • Mixture and on-farm trials for common bean and banana in Uganda	**140**	**153 technologies/NRM practices under research in WLE[38]** Examples of these technologies and practices include: • Slash and Mulch Agroforestry trials testing adaptable agroforestry in El Salvador • Diversity Field Schools, crop diversity blocks, fairs, and kit distributions in Nepal • Field trials to study fertilizer use efficiency in degraded Ethiopian highlands • Trials on nematode-free soils to produce clean seeds • Scenario evaluation of weeding regimes and nitrate dynamics under different water management strategies • Field trials comparing pelletized organic fertilizer from fecal sludge to mineral fertilizer in Sri Lanka • Water treatment options using biochar produced from agricultural wastes (e.g., rice	**+9%**	**175** (peak year)

[37] This total includes the total number of technologies, field trials, and mixture trials tested in 2015. The total number of technologies is 80.

[38] This total includes the total number of technologies, field trials, and mixture trials tested in 2016. The total number of technologies is 58.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• New guidelines developed for mixture experiments to better test whether increasing the level of diversity in a field, in a controlled selected repeatable way, with well chosen components, gives a benefit over monocultures, or treatments with less diversity crop varietal mixtures to manage pest and diseases; on farm plots; experimental station plots. Raised bed, deficit irrigation, nitrogen management, salinity management, water harvesting in Jordan, graded contour bunds and diversification options in Ethiopia. • Holistic assessment of the costs and benefits of technologies is a main component of all intervention decision models, with all models made in 2013 evaluating a particular practice • Optimizing the available natural resources; sustainable crop intensification in development; crop diversification with high value crops; safe wastewater use in agriculture. • GAMES: sustainable groundwater management practices (India) and surface water management (Colombia)	• Payments for agrobiodiversity conservation services scheme initiated for four threatened maize varieties • Simple wastewater treatment system as a barrier for health hazards using synergistic effects of selected low-cost treatment options; Soil management practices using different soil amendments e.g., biochar • ICT application for irrigation system management	• Fertilizer application strategies that improve efficiency, maintain yields, and increase profitability • Landscape strata within watershed to target various crop types and agronomic interventions • Trials of Kabuli chickpea varieties in Yewol Watershed • Improved management of non-responsiveness in maize and soybean cropping. • List of soil factors identified as limiting crop responses to inoculation • Nutrient uptake, nutrient use efficiency, crop yields and soil chemical properties in cassava production systems, database • Recommendations are provided to hydropower company on the management of reservoir fisheries for the benefit of resettled communities living next to the Nam Gnouang hydropower reservoir in Lao PDR • Wetland creation within a reservoir • Solar pumps installed in Nepal Terai and beneficiaries chosen as: male farmer, female farmer, large farmer and farmer's association • Ecosystem service monitoring using remote sensing, citizen science and other ground observations in Viet Nam • Installation and monitoring of three *bhungroos* for dry season cropping in Ghana • Trials to facilitate establishment of compositional nutrient diagnosis (CND) for cassava production systems		straw, shales of jatropha fruits and corn residues) • UTFI trials in Vietnam • Characterization of irrigation-hydropower nexus in India • Linked modeling framework to on ecosystem perceptions in the Niger and Mekong basins • Trials to test relationship between non-responsiveness and soil properties in maize and soybean • Best bet practices for productivity and provisioning of ESS at plot scale • Trials to test partial root-zone drying (PRD) in potato in Ethiopia • Crop fertilizer response trials in degraded watersheds		

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• Underground Taming of Floods for Irrigation		• Agronomic trials to understand the yield related benefits of fecal sludge based pelletized compost in Kurunegala, Sri Lanka				
19. % of technologies under research that have an explicit target of women farmers	**6%**	**19%**[39]	**47%**	**37%**	**50%**	**+34%**	-
20. % of technologies under research that have been assessed for likely gender-disaggregated impact	**9%**	**14%**	**57%**	**30%**	**72%**	**+141%**	-
21 Number of agro-ecosystems for which CRP has identified feasible approaches for improving ecosystem services and for	**49 agro-ecosystems** (See indicator 11 for examples)	**54 agro-ecosystems** (See indicator 11 for examples)	**80 agro-ecosystems** (See indicator 11 for examples)	**64**	**88**[40] (See indicator 11 for examples)	**+37%**	**88** (peak year)

[39] It has become clear that the definitions of the indicators on targeting women farmers/managers and assessing gender disaggregated impact are subject to varying interpretations and require further definition and guidance by WLE in order for project partners to be able to report accurately. This is being further developed.

[40] Work in all agro-ecosystems in 2016 focused on improving ecosystem functions and livelihoods. Therefore, the 2016 total is calculated as a ratio of 2015 agro-ecosystems meeting this criterion to total number of agro-ecosystems.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
establishing positive incentives for farmers to improve ecosystem functions as per the CRP's recommendations							
22. Number of people who will potentially benefit from plans, once finalized, for the scaling up of strategies	**Potential population of 19,192,766 that could benefit from the plans.**	**Potential population of 721,398,000**[41] **that could benefit from the plans.**	**Potential population of 516,331,450**[42] **that could benefit from the plans**	NA [43]	**Potential population of 496,701,724**[44] **that could benefit from the plans**	**-4%**[45]	**721,398,000** (peak year)
23. Number of technologies/NRM practices field tested (phase II)	**70 technologies/NRM practices field tested** Examples include: • Community seed banks, enhanced varietal mixtures; improved agronomic practices use crop varietal diversity	**54 technologies/NRM practices field tested** 54 Examples include: • Composted sludge pelletizing machine in Sri Lanka and Ghana • Cultivation of licorice as a bioremediation treatment of low-productivity salinity affected soils -	**62 technologies/NRM practices field tested**[46] Examples include: • Establishment of community-based organizations and community seed banks (CSBs) in Sri Lanka, Nepal, Uganda • Trade-offs for planting crop varietal mixtures • Farmer-participatory science-led interventions to introduce NRM	**49**	**62 technologies/NRM practices field tested** Examples include: • Cultivation of medicinal plants in Cuban reserves transition zones • 3-D printed open-source quadcopter suited with a mechanism to spray chemicals • "Stove-for-work" gendered SLM approach in Ethiopia	**+27%**	**70** (peak year)

[41] Interpretation of this indicator has varied significantly and therefore this figure generated from partner reports is not considered reliable. A methodology for estimating potential beneficiaries that will allow for improved, harmonized monitoring of indicator 22 is being developed.

[42] This total is based on 45% of 2015 projects which provided sub-national information. Actual impact is much higher, especially for ecosystem-wide and country-wide projects.

[43] No target set for this indicator during 2013-2016

[44] This total is based on 32% of 2016 projects which provided sub-national information. Actual impact is much higher, especially for ecosystem-wide and country-wide projects.

[45] Deviation compared to 2015 actual.

[46] This total does not include field trials or mixture trials tested in 2015. Including trials, the total number of technologies being field tested is 471.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	• Conservation agriculture in potato-pasture rotation/ Improved water and soil management in rice systems in Colombia • Model watersheds at 15 locations in India within different agro-ecological regions and rainfall zones; districts in Karnataka blue and Green water use efficiency	draft policy recommendations produced; and farmer guides to technology for pilot application stage • Precision surface irrigation technology has moved into a field testing phase, east Punjab, Pakistan • Traditional and modern crop varieties of various crops in Bolivia, Burkina Faso and Nepal. Varieties developed through participatory plant breeding in Bara and Jumla regions of Nepal and currently tested for official registration and release • Mechanized raised bed technology field tested in Sharkia, Egypt • NRM practices, maize varieties, herbicide resistant hybrids	technologies for productivity and income enhancement • 9 pilot Decentralized Wastewater Treatment (DWT) sites in India • Participatory varietal selection trials of barley, triticale, lentils and potato to identify entry points favoring women • Dissemination of rhizobium inoculants and complex fertilizers • Soil management technology demonstrations to improve maize yield and reduce parasitic weeds in northern Nigeria and Ghana • 9 pilot AWM technologies in Ethiopia, Tanzania, and Ghana • Fortifier plant constructed in Tema • Fish pass implementation with WorldFish, Hydrolancang company, donors, and the Government of Cambodia		• "Bringing the economics of land degradation back to the farm level" conceptual framework applied to pilot landscapes in Tanzania, Malawi and Ghana • Controlled drainage to combat saline groundwater use • NRM interventions at scale in Yewol Watershed and • Treatment of upward retreat of gully heads out-scaled • 3 Bhungroo sites fitted with irrigation equipment and tested with crops		
24. Number of agro-ecosystems for which innovations (technologies, policies, practices, integrative approaches) and options for improvement at system level have been developed and are being field tested (Phase II)	**52 Agro-ecosystems in which innovations are being tested** Examples include • Conservation agriculture in potato-pasture rotation • Improved water and soil management in rice systems in Colombia • Water harvesting in the rangeland system and graded contour in the rainfed highland system • Watershed technologies have been developed to address various needs of different agro-ecological regions	**30** (See Indicator 11 for examples)	**33 Agro-ecosystems in which innovations are being tested** (See Indicator 11 for examples)	**26**	**36 Agro-ecosystems in which innovations are being tested** (See Indicator 11 for examples)	**+39%**	**52** (peak year)
25. % of above innovations/ approaches/	**55%**	**36%**	**65%**	**52%**	**100%**	**+93%**	-

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
options that are targeted at decreasing inequality between men and women							
26. Number of published research outputs from CRP utilized in targeted agro-ecosystems	**23**	**46**[47]	**29**[48]	**23**	**44**[49]	**+91%**	-
27. Number of technologies/NRM practices released by public and private sector partners globally (phase III)	**12**	**10**[50] **technologies/NRM practices released by public and private sector partners** Examples include: • A US-based global solar major partnered with IWMI-Tata Program on SPaRC in several states including Karnataka, Rajasthan, Gujarat and Madhya Pradesh. A variety of pilots have been implemented by NGOs in Bihar and other eastern states • Partnership with public sector on bio-fertilizers in Ethiopia and Uganda	**12 technologies/NRM practices released by public and private sector partners** Examples include: • Solar power pilots ongoing in several Indian states and extended to the SPICE initiative • Public Private Partnerships in Ghana to commercialize co-composting • Tana Water Fund • Partnership with public sector in Tanzania and Ethiopia to upscale integrated soil/water/land management practices	**10**	**6 technologies/NRM practices released by public and private sector partners** Examples include: • Kai Pacha Foods contract with PACS communities to produce quinoa milk from a threatened variety • Joint venture agreement was for briquette production in Afienya by Volta Ghana Inv. Co. Ltd. and Jekora Ventures Ltd. • PPP was between the Yilo-Krobo Municipal Assembly and Jekora Ventures Ltd. for compost production	**-38%**	**12** (peak year)

[47] This is an estimate based on figures provided by partners and is being verified.

[48] This is an estimate based on 2014 ratio of publications utilized to the total number of publications.

[49] This is an estimate based on 2014 ratio of publications utilized to the total number of publications.

[50] Additional data is being sought from partners on the Phase 3 technologies and practices.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
			• Soil-Plant Spectoral Diagnostics Laboratories established in Ghana, Tanzania, Peru		• Public-private partnership between Partnership with Vietnam government (MARD) and private sector (Nestle, IDH) on UTFI		
	POLICIES IN VARIOUS STAGES OF DEVELOPMENT						
28. Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)	**112 policies analyzed** Examples include: • Synthesis of water policy research on i) human rights and gender dimensions of AWM in South Africa and ii) Politics of IWRM in Africa • Analysis of irrigation Southern Africa Development Community policies and linkages with SADC MAAP and CAADP Pillar 1 processes • Review of Irrigation policies in Cambodia • Review of hydropower and land concession compensation mechanisms and relocation policies of Lao PDR (CPWF Mekong) • Analysis of how national and institutional policies and national laws (seed laws, subsidies, credits, crop insurance schemes, etc.) influence: 1) crop diversity	142[51] Examples include: • More than 100 transboundary water treaties analyzed for work in Central Asia • Imazpyr herbicide evaluated and registered by the National Drug Regulation industry • National seed policies, laws and regulations in Bolivia, Burkina Faso, Uganda, Uzbekistan • Kickstarting India's Second White Revolution in 95 tribal districts of central Indian plateau • Policy on implementation of IWRM in Nepal • Government policy on Irrigation Water User Association (IWUA) is reviewed in Ethiopia • Policy and regulatory framework analysis and literature review: MENA region • Amendment of the Groundwater Act - WRIDD, One Time Assistance for Electrification of Agricultural Pump-sets - OTA-EAP, Department of Agriculture, India	**190 policies analyzed** Examples include: • Situation analysis of AWM in Nigeria • Opportunities for outscaling promising ecosystem-enhancing pastoral resources including biomass in Niger • Analysis of energy costs for lifting water and fee structures for water delivery services • Septage advisory note for the Government of India and septage management guidelines for Sri Lanka • Review of China's Policies and legal framework in land-water-environment governance with focus on hydropower and livelihoods • Ethiopian small holders irrigation strategies • Country investments scoping study tours in Malawi and Madagascar • Consensus Action Papers on irrigation scheduling, efficient water application, on-farm water storage, rainwater harvesting, and flood water capture • Screening of policies, institutional procedures, and regulations to assess support of RRR in urban	**152**	**93 Policies analyzed** Examples include: • Improved seed policies for more resilient crops in Bolivia, Burkina Faso, Uganda and Uzbekistan • Analysis of institutional environment and capacity for EBM and SLM in Ghana • Grey water reuse in Jordan and Egypt: Addressing challenges and uncovering opportunities for broad uptake • State-level policy consultations and roundtables on PMKSY in multiple states in India • Guidance on business models and policy on FSM in Nepal and India • Gender-differentiated adoption barriers of AWM in Burkina Faso and Ghana	**-39%**	**190**[52] (peak year)

[51] Analysis of the data related to policies in Stages 1-5 is ongoing.

[52] For policies we have selected the highest number passing through each of the five stages. This inevitably implies some double counting as the same policy passes through the stages over different years.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	available to farmers for cultivation; 2) farmers' choices on what to acquire and from whom; 3) exchange of knowledge and seed among actors (Bolivia, Burkina Faso, Nepal, Uganda, Uzbekistan) • Understanding of policy formulation, and implementation of policy, better understanding of policy processes and decision making of bureaucracies within Uzbekistan • Policy analysis undertaken in India of Underground Taming of Floods for Irrigation (UTFI) • Policy analysis on Payments for Forest Environmental Services for Vietnam has been published in a peer-reviewed journal. • ICRAF's Ecosystem Health program published 2 papers related China's environmental policy and India Hydropower policy		and peri-urban areas in Ghana, Kenya, Ethiopia and Uganda • Groundwater management policies and institutions in Bangladesh, with a focus on northern Bangladesh • Analysis of gender equality in human rights analysis in Kenya, Malawi, South Africa, and Zimbabwe • Analysis of flows and practices of IWRM, specifically in Mozambique, Tanzania, South Africa, and Zimbabwe • Analysis of national agriculture and irrigation policies in Malawi, South Africa, Zambia, and Zimbabwe • Analysis of IWRM policies in Nepal as part of the Koshi Basin river plan • Analysis of Nepal's Water Resource Strategy (2002) and National Water Plan (2005) • Analysis of five Investment Promotion Policies (1994-2009) characterizing private sector in the Mekong				
29. Number of policies / regulations / administrative procedures drafted and presented for public/stake	**5 policies presented, including:** • Ministry of Agriculture in Sri Lanka interested to amend their current national policy to strengthen urban farming based on work with IWMI	**11 policies presented, including:** • Policies for transboundary water management presented to stakeholders in Malawi and Mozambique • Report developed by the two task forces (Goals 6.4 and 6.6) submitted to the SDG working group for wider public consultation	**6 policies presented, including:** • Agricultural policies, development strategies, biodiversity strategies, water and land policies in Uganda and Rwanda • South Africa Irrigation Strategy presented to Department of Agriculture, Forestry and Fisheries	**5**	**6 policies presented, including:** • Improved seed policy to improve crop productivity, stability and livelihoods in Bolivia and Burkina Faso • IPBES thematic assessments on Land Degradation and	**20%**	**11** (peak year)

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
holder consultation (Stage 2)	• IWMI and Western Province of Sri Lanka consultations held to improve policy dialogue on national irrigation policy and linkages to CAADP • Upper Tana Landscape level work on soils has led to consultations and discussions in how local level policy making is being carried out in relation to decisions	and finalization of the goals and targets to be included in the SDGs	• Science-policy dialogues • IWRM global and in Mozambique, Tanzania, South Africa and Zimbabwe discussed in joint Water Research Commission-IDS-IWMI Water Dialogue • IPBES ecosystem service assessments • Solar Pump Irrigators' Cooperative Enterprise (SPICE) in India		Pollination; first order drafts of Regional Assessments for African, Asia-Pacific, and the Americas; Zero order draft of the Global Assessment • Small reservoir management policy recommending BSM for clearly identified conflicts around small reservoirs in Upper East Ghana and Centre-Est Burkina Faso • Diverse financial options for SPIP uptake		
30. Number of policies, regulations and administrative procedures presented for legislation (Stage 3)		**1 policy reported:** Policy for sustainable Groundwater allocation	**2 policies reported:**[53] Participatory Guarantee Scheme to certify natural products coming from biosphere reserves in Cuba Recommendations on permit systems taken up in South Africa's internal ministerial debates	**2**	**3 policies reported:** • Draft wastewater guidelines awaiting incorporation in governmental policy note in India • National sanitation policy with addendum covering septage management awaiting approval from Sri Lankan cabinet • Concessionary tariff regime for irrigators in Ghana	**+50%**	**3** (peak year)
31. Number of policies / regulations / administrative procedures prepared passed/approved (Stage 4)	**1 National Legislative Process influenced** As a result of previous and on-going initiatives within the framework of WLE, MINAM (since 2011) has been actively leading conversations about how to develop laws that might catalyze the creation and	**2 policies reported:** National Irrigation Management Fund of US $ 1.2 billion incorporated in the 12th Five Year Plan of Government of India (IWMI-India) CIAT provided technical advice to the formulation of the specific ruling for the implementation of the Law on Rewards from Ecosystem Services in	**3 policies reported:** Evidence-based recommendations on rights-based gender-equal water resource management (right to livelihoods, fair treatment of small-scale users in permits) taken forward in FAO High Level Panel of Experts on Food Security and Nutrition (HLPE) report on Water, Food Security and Nutrition	**3**	**2 policies reported:** • UP State Government including UTFI as a work component in District Irrigation Plans • Decree # 6: Establishment of plantations of almond, walnut and pistachio in mountainous and foothill areas in 2016-2018.	**-33%**	**3** (peak year)

[53] The higher number of policies that passed through stages 4 and 5 reflect the better than expected performance overall, and hence the slight dip in the estimated number of policies at stage 3 at year end.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
	management of Payment for Ecosystem Services (PES)-type schemes. As part of these discussions, MINAM has met with some of its key partners in PES-type scheme development to discuss a draft-version of such a proposed Eco-System Services (ESS) Law.	Peru. These rules have to be prescribed by mandate according to this Law. Technical advice is based on findings of the study conducted by CIAT in Peru and that aimed at identifying the bottlenecks in the effective implementation of schemes of Rewards for Ecosystem Services in the country.[54]	Agrobiodiversity program to retain traditional and indigenous genetic resources linked to Man and the Biosphere Reserves included in the National System of Protected Areas Strategic Plan 2015-2020 General Comment 34 to Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) article 14 on rural women explicitly mentions women's rights to access to water for irrigation/agriculture, in addition to water for domestic uses		According to the decree every year 1,000 ha of these crops should be established in Uzbekistan		
32. Number of policies / regulations / administrative procedures passed for which implementation has begun (Stage 5)		**1 policy reported** SPaRC policy implemented in Karnataka under Surya Raitha Program. SPaRC proposal was backed by a budget provision of INR 400 crore in 2014 budget.	**2 policies reported** Multiple-use water systems (MUS) further institutionalized in Nepal through the Department of Agriculture which proposed to include MUS in the 2016 activities during the annual planning meeting. South Africa's national policy on MUS was launched	**2**	**3 policies reported** Regulatory framework for bio-fertilizers in Ghana, Nigeria, Kenya, Tanzania, and Uganda Improved seed policy to improve crop productivity, stability and livelihoods in Uganda and Uzbekistan	**+50%**	**3** (peak year)
33. Number of hectares under	**15,471,050 hectares**	**2,096,240 hectares** [55]	**2,499,035 hectares**[56]	NA [57]	**2,889,300 hectares**[58]	**+16%**[59]	**2,889,300 hectares** (peak year)

[54] Although reported in 2013, there has been further work done on PES in 2014.

[55] Based on estimates provided by partners. Interpretation of this indicator has varied significantly and therefore this figure generated from partner reports is not considered reliable. A methodology for estimating potential beneficiaries that will allow for improved, harmonized monitoring of indicator 33 is being developed.

[56] This is a minimum amount based on 5% of projects, which reported area information. The actual impacted area is expected to be much higher.

[57] No target set for this indicator during 2013-2016

[58] This is a minimum amount based on 2% of projects, which reported area information. The actual impacted area is expected to be much higher.

[59] Deviation compared to 2015 actual.

Indicator	2013	2014	2015	2016		Deviation from target	Aggregate total 2013-2016[15]
	Actual	Actual	Actual	Target	Actual		
improved technologies or management practices as a result of CRP research							
34. Number of farmers and others who have applied new technologies or management practices as a result of CRP research	35,000	205,946[60]	125,045[61]	NA [62]	332,700[63]	+166% [64]	332,700 (peak year)

[60] This is a minimum amount, based on estimates provided by partners. Interpretation of this indicator has varied significantly and therefore this figure generated from partner reports is not considered reliable. A methodology for estimating potential beneficiaries that will allow for improved, harmonized monitoring of indicator 34 is being developed.

[61] This a minimum amount, and includes the total number of expected beneficiaries as reported by projects. The true number of impacted farmers is expected to be much higher.

[62] No target set for this indicator during 2013-2016

[63] This a minimum amount, and includes the total number of expected beneficiaries as reported by projects. The true number of impacted farmers is expected to be much higher.

[64] Deviation compared to 2015 actual.

Annex 2: Performance Indicators for Gender Mainstreaming with Targets Defined

Performance Indicator	CRP performance approaches requirements	CRP performance meets requirements	CRP performance exceeds requirements
1. Gender inequality targets defined	Sex-disaggregated social data is being collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	**Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations;** and **The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs)** Gender analysis is done by WLE at three levels, as WLE not only works at household level where most of the sex-disaggregated data comes from, but more often at institutional and landscape levels. WLE has been 1) Working to ensure that sex-disaggregated was collected in projects that worked at household level; 2) Defining and collecting data to understand the main dimensions of gender inequity in the different technical domains of WLE. For instance, a target population identified by WLE is women interested in water for productive use, and not only domestic uses. Thus, WLE projects have identified some of the constraints facing access to irrigation by women in for instance India and Ghana. This has helped prioritize research in the Phase 2 proposal; and 3) Researching and getting data on how gender inequities are presented and perpetuated at landscape and institutional level around water, land and ecosystems. Under water, data is being collected on the role of women in water users' associations, in land on land tenure and on ecosystems, on differential uses and values of ecosystems.	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations. The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs). Changes in the CRP targets in levels of gender inequality to which the CRP contributes, with related numbers of men and women beneficiaries, in main target populations.
2. Institutional architecture for integration of gender is in place	- CRP scientists and managers with responsibility for gender in the CRP's	• **CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS and funds allocated to support their interaction.** • **Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy.**	CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS and funds

	outputs are appointed, have written TORS. - Procedures defined to routinely report use of available diagnostic or baseline knowledge on gender for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy - CRP M&E system has protocol for tracking progress on integration of gender in research	• **CRP M&E system has protocol for tracking progress on integration of gender in research.** • **CRP plan approved for capacity development in gender analysis.** Across WLE and its partners, more resources were dedicated to gender research. This was especially the case for the focal region projects where at least 20% of budgets were allocated to gender work. At flagship level, continued interactions with flagship scientists and, where possible, with the gender focal points routinely identified entry points and implications of work being done in the flagship. Unfortunately, the gender person at CIAT and the flagship leader left mid-year. Similarly, a reduction in WLE funding meant that as of March 2016 the gender coordinator for WLE was also at 80% (similar to other WLE staff) and there was also a reduction in funds for regional gender coordinators, meaning there was only one fulltime and one part-time. Gender, however, did form an important part of the Phase 2 proposal in 2016, where a review of activities in Phase 1 allowed for a prioritization of gender research questions. This will clearly improve the resources dedicated to gender in Phase 2. Other improvements were 1) the requirement at flagship level to develop a three-year gender research strategy, 2) the development of dedicated gender focal points in each flagship and 3) a dedicated budget per flagship to gender. In terms of monitoring and evaluation, the new Managing Agricultural Research for Learning Outcome (MARLO) system being developed jointly by eight CRPs will require a detailed breakdown to ensure that all deliverables include sex-disaggregated data, the analysis of this data, diagnostics to understand gender issues, the development of innovations/interventions/policies with explicit gender targeting and/or the monitoring/impact assessment of gender outcomes of research/innovations/ interventions/policies. CapDev has become a component within the Phase 2 proposal. In 2016, there were several gender capacity development activities at country level, including trainings for partners in Tanzania and India as well as a webinar looking at participatory gender training options.	allocated to support their interaction. Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy. CRP M&E system has protocol for tracking progress on integration of gender in research. A CRP plan approved for capacity development in gender analysis. The CRP uses feedback provided by its M&E system to improve its integration of gender into research.

Annex 3: Collaboration with Other CRPs

Flagship/Activity	CRP and Role	Role of WLE	Output (expected/completed) for 2016
RDE			
Global Landscapes Forum (GLF)	FTA: organizing	Science, partnerships and knowledge management	Greater awareness around Landscapes, new partnerships
GLF	CCAFS: Organization of joint session on Unexplored Big Wins for Climate Change through Landscape restoration		Session held at GLF 2016
4/1000 Initiative: Soils for Food Security and Climate	CCAFS: Government support and mitigation criteria	Quantification, mapping and scaling soil organic carbon enhancement opportunities	No direct outputs as such
Economics of Land Degradation	Drylands: commissioned CIAT/WLE to contribute toward a sentinel paper on land degradation in relation to the SDGs	WLE: Joint work from RDL and RRR on this on the paper to be published in June 2017	A report on the threat of land degradation to realizing the SDGs and its remedies
LWP			
Solar Pump Irrigator's Cooperative Enterprise (SPICE)	CCAFS: provided grant for the project	Provided inputs from solar pump work and on institutional aspects	Launch of initiative
Development of Solar Power Business models	Drylands/Africa Rising; site location	Methodology and expertise	Business model brief
Rainwater harvesting and water shed management in Ethiopia	Drylands: Facilitating field work and technology improvement for drought proofing strategy through low-cost farm-ponds	Providing watershed management practices and data to support landscape approaches	(i) spreading weirs for water harvesting in Afar region; (ii) decision support for soil fertility management.
RRR			
Economics of Land Degradation	Drylands: Commissioned report on sentinel paper on land degradation in relation to the SDGs	Contribution of sub-chapter 3.6 "SDG 12: Target 12.5 Ensure sustainable consumption and production patterns: Resource recovery and land degradation"	Report on the threat of land degradation to realizing the SDGs and its remedies
MRV			
Underground Taming of Floods for Irrigation	CCAFS: funding for piloting UTFI experiments in the field (India and Bangladesh)	Funding for concepts development, and upscaling possibilities in other countries - Sri Lanka, Vietnam, Thailand, China, Myanmar	The concept has been incorporated into the District Irrigation Plan (DIP) for Rampur with a proposed investment of USD 1.2 million.

Flagship/Activity	CRP and Role	Role of WLE	Output (expected/completed) for 2016
GRIPP Initiative	PIM: Methodological and analytical support	WLE: Financial support to establish network	Network established with 25 partners
Flood risk assessment and mapping, solutions for flood risk reduction	CCAFS: funding for concepts development and piloting of flood insurance solutions in India and Bangladesh	Funding for rapid flood response spatial inundation products	Launch of the tool WetIn Flood App for the Niger-Benue River was launched
Complementary work on global groundwater modeling and groundwater foresight	PIM: enhancement and testing of the groundwater module; evaluating global groundwater depletion scenarios	Application of the module within IMPACT model framework to assess implications of groundwater scenarios on food security	Three papers in process to be produced
IES			
Ganges - Improved water management in southern Bangladesh	GRISP: technologies on rice varieties and cropping systems AAS: technologies and advice on engaging communities	Funding and overall framework for working in Focal Region program, focus on overall productivity of system	Joint workshop on coastal zone management in Bangladesh
DAI			
Probabilistic planning and evaluation of interventions in the Regional Program in the Sahel and Horn of Africa for Enhancing Food and Water Security for Rural Economic Development	Dryland Systems, Livestock and CCAFS: targeting and evaluation of dryland interventions and Climate-Smart Agriculture	Probabilistic modelling of resilience and training of stakeholders in Applied Information Economics. Quantifying resilience and outcomes of interventions	Report on Increasing DryDev's Effectiveness and Efficiency through Probabilistic Decision Modelling
Soil-Plant Spectroscopy advisory and analytical services to CGIAR projects	Support services to FTA, Maize, Dryland Systems, Roots and Tubers	Soil-Plant spectroscopy advisory and analytical services for soil-plant nutrition and soil characterization in agronomic trials and monitoring networks	Protocols on soil and plant sampling and sample preparation; spectral analytical, calibration and interpretation services provided
Cross CRP Collaboration at program level			
Production of two movies on sustainable intensification and drylands	Drylands systems – funding	Provided ideas on film location and helped oversees overall direction	New Partnerships for Sustainability: Public-private partnerships in Watershed Management in India Morocco: Youth of the Drylands

Annex 4: Preliminary Financial Report[65]

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2012 -12/21/2016
Amounts in USD (000's)

Cumulative Financial Summary

Report Description

Name of Report:	Cumulative Financial Summary
Frequency/Period:	Annual
Deadline:	Every April 15th

Summary Report - by CG Partners	(a) Total POWB budget since inception					(b) Actual cumulative Expenses					(c) Variance / Balance				
	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding
1. AFRICA RICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. BIOVERSITY	8,619	178	6,907	3,039	18,743	9,459	387	6,970	3,991	20,707	(840)	(209)	(63)	(952)	(1,964)
3. CIAT	6,038	708	18,825	128	25,699	6,973	721	21,409	192	29,295	(935)	(13)	(2,584)	(64)	(3,596)
4. CIFOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. CIMMYT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. CIP	1,642	656	-	9	2,307	1,642	833	-	9	2,484	-	(177)	-	-	(177)
7. ICARDA	4,024	2,261	4,659	-	10,944	4,043	2,236	4,779	-	11,058	(19)	25	(120)	-	(114)
8. ICRAF	5,882	-	10,863	1,073	17,818	5,990	-	10,934	1,143	18,067	(108)	-	(71)	(70)	(249)
9. ICRISAT	4,407	20	9,339	-	13,766	4,427	65	9,112	4	13,608	(20)	(45)	227	(4)	158
10. IFPRI	5,425	-	4,027	1	9,453	5,643	-	3,649	1	9,293	(218)	-	378	-	160
11. IITA	929	5,548	15,911	-	22,388	929	5,547	15,650	-	22,126	-	1	261	-	262
12. IURI	1,152	943	1,366	-	3,461	1,346	1,223	1,183	-	3,752	(194)	(280)	183	-	(291)
13. IRRI	818	-	567	-	1,385	962	-	567	-	1,529	(144)	-	-	-	(144)
14. IWMI	71,841	13,695	46,793	200	132,529	68,831	14,578	49,871	-	133,280	3,010	(883)	(3,078)	200	(751)
15. WORLDFISH	1,559	-	684	26	2,269	1,743	-	690	3	2,436	(184)	-	(6)	23	(167)
Total for CRP	112,336	24,009	119,941	4,476	260,762	111,988	25,590	124,814	5,243	267,635	348	(1,581)	(4,873)	(767)	(6,873)
	43%	9%	46%	2%	100%	42%	10%	47%	2%	100%	-5%	23%	71%	11%	100%

Note:
IWMI Includes Program Management, Focal Region & Innovation Fund, CPWF and IWMI Center
The Expenditure for all the centers are based on the L series reports submitted and the Audit confirmation for W1 and W2 expenditure
ICARDA includes a budget and expenditure of USD 81,893 for Decentralization funding

65 The following financial information is strictly preliminary. Information is still pending from WLE partners on gender and partnerships. Figures provided in this report are subject to change in the final version

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2016 - 12/21/2016
Amounts in USD (000's)

Annual Financial Summary by Centers

CGIAR
Science for a food secure future

Report Description

Name of Report: Annual Financial Summary by Centers & Other Participants
Frequency/Period: Annual
Deadline: Every April 15th

Summary Report - by CG Partners	(a) CRP 2016 POWB approved budget (Including carry over from 2015)					(b) CRP 2016 Expenditure					(c) Variance this Year				
	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding
1. AFRICA RICE	-	-	-	-	-					-	-	-	-	-	-
2. BIOVERSITY	831	-	1,667	-	2,498	1,671	209	1,730	852	4,462	(840)	(209)	(63)	(852)	(1,964)
3. CIAT	471	159	1,830	-	2,460	1,406	172	4,414	64	6,056	(935)	(13)	(2,584)	(64)	(3,596)
4. CIFOR	-	-	-	-	-					-	-	-	-	-	-
5. CIMMYT	-	-	-	-	-					-	-	-	-	-	-
6. CIP	185	200	-	-	385	185	377	-	-	562	-	(177)	-	-	(177)
7. ICARDA	586	250	190	-	946	525	225	310	-	1,060	(19)	25	(120)	-	(114)
8. ICRAF	639	-	2,448	144	3,231	747	-	2,519	214	3,480	(108)	-	(71)	(70)	(249)
9. ICRISAT	704	-	2,238	-	2,942	724	45	2,011	4	2,784	(20)	(45)	227	(4)	158
10. IFPRI	603	-	1,373	-	1,976	821	-	995	-	1,816	(218)	-	378	-	160
11. IITA	83	-	3,000	-	3,083	83	(1)	2,739	-	2,821	-	1	261	-	262
12. ILRI	71	-	380	-	451	265	280	197	-	742	(194)	(280)	183	-	(291)
13. IRRI	-	-	-	-	-	144	-	-	-	144	(144)	-	-	-	(144)
14. IWMI	14,504	1,863	5,658	200	22,225	11,494	2,746	8,736	-	22,976	3,010	(883)	(3,078)	200	(751)
15. WORLDFISH	73	-	15	-	88	257	-	21	(23)	255	(184)	-	(6)	23	(167)
Total for CRP	18,670	2,472	18,799	344	40,285	18,322	4,053	23,672	1,111	47,158	348	(1,581)	(4,873)	(767)	(6,873)
	46%	6%	47%	1%	100%	39%	9%	50%	2%	100%	-5%	23%	71%	11%	100%

Important Reconciliation

Less:

Expenditure not recongized by ICRAF as W1&2 *(This was included in Bioversity's W1&2 audited colinsution as Collaboration- ICRAF)*	78	This is manually adjusted in report 'Report L12'
Difference in Collaboration - CIAT as per Bioversity's revised confirmation le *(The revised confirmation letter 2015 submitted on 08 April 2016, thus not possible to adjust this in AFS)*	(2)	This is manually adjusted in report 'Report L12'
Amount not reported by CIAT on a service agreement MARLO (4500030185)	3	
Total WLE expenditure: W1&2 as per individual centers WLE supplementary schedules in AFS	**18,243**	

Notes:
IWMI includes Program Management, Focal Region & Innovation Fund, CPWF and IWMI Center
The Expenditure for all the centers are based on the L series reports submitted and the Audit confirmation for W1 and W2 expenditure
ICARDA includes a budget and expenditure of USD 81,893 for Decentralization funding

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2016 - 12/21/2016
Amounts in USD (000's)

Annual Funding Sumr

CGIAR
Science for a food secure future

Report Description

Name of Report: Annual Funding Summary
Frequency/Period: Annual
Deadline: Every April 15th

PART 1 - Annual FINANCE PLAN (Totals for Windows 1 and 2 combined)

Approved Level for Year - Initial Approval (as per PIA) (as per Fin Plan)	16,848
Approved Level for Year - Final Amount	18,669

PART 2 - Funding Summary for Year

		2016 Actual Funding			
		Windows 1&2	**Window 3**	**Bilateral Funding**	**Total Funding**
1	CGIAR Fund	18,322			18,322
2	ACIAR		546	151	697
3	ADA		67	-	67
4	ADB		-	179	179
5	AfDB		-	4,014	4,014
6	Alliance for a Green Revolution in Africa		-	344	344
7	AusAID		-	1,118	1,118
8	AUSTRALIAN NATIONAL UNIV.		-	8	8
9	Belgium		-	8	8
10	BMGF		376	175	551
11	BMU		-	1,058	1,058
12	Chemonics International		-	275	275
13	China		74	-	74
14	CIMMYT		-	405	405
15	Columbia Global Center in Eastern & Southern Africa - CGC Africa		-	848	848
16	COLUMBIA UNIVERSITY		-	19	19
17	Concern Worldwide		-	130	130
18	CORNELL UNIV		-	52	52
19	COWI A/S		-	9	9
20	CPWF		-	1,199	1,199
21	CRS		-	87	87
22	Department of Agriculture & Cooperation, India		-	115	115
23	Department of Biotechnology, India		-	357	357
24	Development Alternative Incorporated		-	17	17
25	EC		72	92	164
26	EC-IFAD		173	-	173
27	ECOPETROL		-	22	22
28	ESRC		-	63	63
29	Executive Agency for Small and Medium		-	3	3
30	Farm Africa, United Kingdom		-	237	237
31	Finland		-	351	351
32	German Academic Exchange Service		-	17	17
33	Ghana		-	57	57
34	GIZ/BMZ		-	3,087	3,087
35	HELVETAS		-	14	14
36	HYDROC GmbH		-	1	1
37	IASS		-	281	281
38	ICARDA		-	-	-
39	ICBA		-	123	123
40	ICRISAT		-	275	275
41	ICROFS		-	25	25
42	iDE		-	39	39
43	IFAD		1,944	25	1,969
44	IFDC		-	294	294
45	IFPRI		-	221	221
46	IHE		-	52	52
47	IITA/USAID		-	210	210
48	ILRI		-	350	350
49	India		323	868	1,191
50	Institut D'Economie Rurale		-	35	35

51	International Centre for Environmental Management		-	3	3
52	IPGRI		-	(18)	(18)
53	Irish Aid		-	216	216
54	IRRI		-	5	5
55	IUCN		-	249	249
56	IWMI (Nigeria)		-	11	11
57	IWMI (EC-IFAD)		280	261	541
58	Jindal South West Foundation		-	292	292
59	Kasetsart University, Thailand		-	65	65
60	LIFT		-	9	9
61	London School of Hygiene and Tropical Medicine		-	243	243
62	LSE		-	5	5
63	Margaret A. Cargill Philanthropies		-	17	17
64	Multidonor		-	1	1
65	Nanyang Technological University, Singapore		-	5	5
66	NAS		-	273	273
67	Nathan Associates Inc.		-	101	101
68	Nepal		-	77	77
69	NERC		-	538	538
70	Netherlands		-	90	90
71	Netherlands Enterprise Agency		-	54	54
72	Nigeria		-	148	148
73	NRF, South Africa		-	1	1
74	NSF		-	68	68
75	Oregon State University		-	127	127
76	Pegasys Institute		-	2	2
77	SABM		-	12	12
78	SDC		-	508	508
79	SEI		-	24	24
80	Sir Ratan Tata Trust		-	98	98
81	SIWI		-	33	33
82	South Africa		152	-	152
83	Swedish University of Agricultural Sciences (SLU)		-	8	8
84	TAMU		-	331	331
85	Texas A&M Agrilife Research, USA		-	876	876
86	The Christensen Fund		-	96	96
87	The Coca-Cola Foundation, USA		-	71	71
88	TNC		-	28	28
89	U. of Oxford		-	27	27
90	UC Davis		-	20	20
91	UNEP		-	68	68
92	UNEP-GEF		-	883	883
93	United Kingdom		-	635	635
94	University of Illinois Solar		-	11	11
95	University of Newcastle upon Tyne		-	7	7
96	University of Wageningen, The Netherlands		-	1	1
97	UNOPS		-	50	50
98	USAID		745	699	1,444
99	USA-Texas A&M University		-	197	197
100	USDA		-	116	116
101	USQ		-	277	277
102	VFI		-	26	26
103	Wageningen University		-	5	5
104	WB		-	43	43
105	WELLCOME		-	39	39
106	WIN		-	18	18
107	World Bank		-	277	277
108	WRC		-	121	121
109	WRI		-	210	210
110	Others < $?				-
Total for CRP "5"		**18,322**	**4,752**	**25,968**	**49,042**
Less: Collaborations- CGIAR			(697)	(2,297)	(2,994)
Net Funding		**18,322**	**4,055**	**23,671**	**46,048**
Add: Expenditure- Center funds					1,111
Total Expenditure WLE 2016					47,159

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2016 - 12/21/2016
Amounts in USD 000's

Annual Financial Summary
Project

CGIAR
Science for a food secure future

Report Description

Name of Report:	Financial Summary by Flagship Project
Frequency/Period:	Annual
Deadline:	Every April 15th

	POWB Approved	Current Year Actual	Unspent Budget
Summary Report - by Flagship Project			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments	-	9,567	(9,567)
Flagship 2. Sustainably increasing land and water productivity (LWP)	-	12,230	(12,230)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)	-	8,789	(8,789)
Flagship 4. Recovering and reusing resources in urbanized ecosystems	-	2,677	(2,677)
Flagship 5. Managing resource variability and competing use (MRV)	-	7,329	(7,329)
Theme 1. ESR: Ecosystem services and resilience	-	161	(161.00)
Theme 2. GPI: Gender, Poverty & Institutions	-	402	(402.00)
Theme 3. DAI: Strengthening decision analysis and information	-	4,404	(4,404.00)
PMEC 1: Management	-	906	(906.00)
PMEC 2: Communication	-	507	(507.00)
PMEC 3: Research Support	-	104	(104.00)
Decentralization Funds- ICARDA	-	82	(82.00)
Total - All Costs	-	47,158	(47,158)
AFRICA RICE			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	-	-
BIOVERSITY			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		729	(729.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		3,421	(3,421.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		111	(111.00)
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		201	(201.00)
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	4,462.00	(4,462.00)
CIAT			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		863	(863.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		3,552	(3,552.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		1,525	(1,525.00)
Theme 1. ESR: Ecosystem services and resilience		50	(50.00)
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		65	(65.00)
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	6,055.00	(6,055.00)

CIFOR			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR Ecosystem services and resilience		-	-
Theme 2. GPE Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	-	-

CIMMYT			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR Ecosystem services and resilience		-	-
Theme 2. GPE Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	-	-

CIP			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		139	(139.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR Ecosystem services and resilience		-	-
Theme 2. GPE Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		423	(423.00)
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	562.00	(562.00)

ICARDA			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		645	(645.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		248	(248.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		85	(85.00)
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR Ecosystem services and resilience		-	-
Theme 2. GPE Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		82	(82.00)
			-
Total - All Costs	-	1,060.00	(1,060.00)

ICRISAT			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		1,301	(1,301.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		1,150	(1,150.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		334	(334.00)
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	2,785.00	(2,785.00)

IFPRI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		240	(240.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		693	(693.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		65	(65.00)
Flagship 5. Managing resource variability and competing use (MRV)		818	(818.00)
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	1,816.00	(1,816.00)

IITA			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		2,823	(2,823.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	2,823.00	(2,823.00)

ILRI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		198	(198.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		303	(303.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		243	(243.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	744.00	(744.00)

IRRI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		144	(144.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	144.00	(144.00)

IWMI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		7,163	(7,163.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		6,465	(6,465.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		36	(36.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		2,182	(2,182.00)
Flagship 5. Managing resource variability and competing use (MRV)		4,885	(4,885.00)
Theme 1. ESK: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		402	(402.00)
Theme 3. DAI: Strengthening decision analysis and information		389	(389.00)
PMEC 1: Management		841	(841.00)
PMEC 2: Communication		507	(507.00)
PMEC 3: Research Support		104	(104.00)
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	22,974.00	(22,974.00)

WORLD AGROFORESTRY CENTRE (ICRAF)			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		78	(78.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		11	(11.00)
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESK: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		3,391	(3,391.00)
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	3,480.00	(3,480.00)

WORLDFISH			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		152	(152.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		101	(101.00)
Theme 1. ESK: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	253.00	(253.00)

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2015 - 12/21/2015
Amounts in USD 000's

Annual Financial Summary of G by Flagship Project

CGIAR
Science for a food secure future

Report Description

Name of Report:	Financial Summary of Gender Expenditure by Flagship Project
Frequency/Period:	Annual
Deadline:	Every April 15th

	POWB Approved	Current Year Actual	Unspent Budget
Summary Gender Report - by			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments	-	2,356	(2,356)
Flagship 2. Sustainably increasing land and water productivity (LWP)	-	2,520	(2,520)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)	-	867	(867)
Flagship 4. Recovering and reusing resources in urbanized ecosystems	-	375	(375)
Flagship 5. Managing resource variability and competing use (MRV)	-	738	(738)
Theme 1. EAE: Ecosystem services and resilience	-	56	(56)
Theme 2. GPE: Gender, Poverty & Institutions	-	571	(571)
Theme 3. DAE: Strengthening decision analysis and information	-	349	(349)
PMEC 1: Management	-	110	(110)
PMEC 2: Communication	-	186	(186)
PMEC 3: Research Support	-	-	-
Decentralization Funds- ICARDA	-	-	-
	-	-	-
Total - All Costs	-	8,128	(8,128)
AFRICA RICE			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. EAE: Ecosystem services and resilience		-	-
Theme 2. GPE: Gender, Poverty & Institutions		-	-
Theme 3. DAE: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	-	-
BIOVERSITY			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		106.00	(106.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		513.00	(513.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. EAE: Ecosystem services and resilience		14.00	(14.00)
Theme 2. GPE: Gender, Poverty & Institutions		-	-
Theme 3. DAE: Strengthening decision analysis and information		31.00	(31.00)
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	664.00	(664.00)
CIAT			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		207.00	(207.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		119.00	(119.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		34.00	(34.00)
Theme 1. EAE: Ecosystem services and resilience		42.00	(42.00)
Theme 2. GPE: Gender, Poverty & Institutions		-	-
Theme 3. DAE: Strengthening decision analysis and information		-	-
PMEC 1: Management		5.00	(5.00)
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	407.00	(407.00)

CIFOR			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	-	-

CIMMYT			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	-	-

CIP			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		36.00	(36.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	36.00	(36.00)

ICARDA			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		52.00	(52.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		13.00	(13.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		22.00	(22.00)
Flagship 5. Managing resource variability and competing use (MRV)		42.00	(42.00)
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
Total - All Costs	-	129.00	(129.00)

ICRISAT			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		171.00	(171.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		128.00	(128.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		4.00	(4.00)
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	303.00	(303.00)

IFPRI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		313.00	(313.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		58.00	(58.00)
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	371.00	(371.00)

IITA			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		507.00	(507.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		25.00	(25.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	532.00	(532.00)

ILRI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		49.00	(49.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESR: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	49.00	(49.00)

IRRI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		53.00	(53.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESIC: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	53.00	(53.00)

IWMI			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		1,938.00	(1,938.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		1,477.00	(1,477.00)
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		33.00	(33.00)
Flagship 4. Recovering and reusing resources in urbanized ecosystems		349.00	(349.00)
Flagship 5. Managing resource variability and competing use (MRV)		586.00	(586.00)
Theme 1. ESIC: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		571.00	(571.00)
Theme 3. DAI: Strengthening decision analysis and information		45.00	(45.00)
PMEC 1: Management		105.00	(105.00)
PMEC 2: Communication		186.00	(186.00)
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	5,290.00	(5,290.00)

WORLD AGROFORESTRY CENTRE (ICRAF)			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		-	-
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		-	-
Theme 1. ESIC: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		273.00	(273.00)
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	273.00	(273.00)

WORLDFISH			
Flagship 1. Integrating Ecosystem Solutions into Policy and Investments		3.00	(3.00)
Flagship 2. Sustainably increasing land and water productivity (LWP)		-	-
Flagship 3. Regenerating degraded agricultural ecosystems (RDE)		-	-
Flagship 4. Recovering and reusing resources in urbanized ecosystems		-	-
Flagship 5. Managing resource variability and competing use (MRV)		18.00	(18.00)
Theme 1. ESIC: Ecosystem services and resilience		-	-
Theme 2. GPI: Gender, Poverty & Institutions		-	-
Theme 3. DAI: Strengthening decision analysis and information		-	-
PMEC 1: Management		-	-
PMEC 2: Communication		-	-
PMEC 3: Research Support		-	-
Decentralization Funds- ICARDA		-	-
			-
Total - All Costs	-	21.00	(21.00)

Annual Financial Summary by Natural Classification

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2016 -12/21/2016
Amounts in USD 000's

Report Description

Name of Report:	Financial Summary by Natural Classification lines
Frequency/Period:	Annual
Deadline:	Every April 15th

Total CRP "X.X"	POWB Approved Budget					Actual					Unspent/Variance				
	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center Funds	Total Funding
Personnel	-	-	-	-	-	8,196	1,515	8,434	309	18,454	(8,196)	(1,515)	(8,434)	(309)	(18,454)
Collaborators Costs - CGIAR Centers	-	-	-	-	-	2,958	697	2,297	-	5,952	(2,958)	(697)	(2,297)	-	(5,952)
Collaborator Costs - Partners	-	-	-	-	-	3,772	1,020	5,132	37	9,961	(3,772)	(1,020)	(5,132)	(37)	(9,961)
Supplies and services	-	-	-	-	-	3,577	985	6,431	411	11,404	(3,577)	(985)	(6,431)	(411)	(11,404)
Operational Travel	-	-	-	-	-	503	167	1,230	15	1,915	(503)	(167)	(1,230)	(15)	(1,915)
Depreciation	-	-	-	-	-	92	4	397	3	496	(92)	(4)	(397)	(3)	(496)
Sub-total of Direct Costs	-	-	-	-	-	19,098	4,388	23,921	775	48,182	(19,098)	(4,388)	(23,921)	(775)	(48,182)
Indirect Costs	-	-	-	-	-	2,103	362	2,240	336	5,041	(2,103)	(362)	(2,240)	(336)	(5,041)
Total - All Costs	-	-	-	-	-	21,201	4,750	26,161	1,111	53,223	(21,201)	(4,750)	(26,161)	(1,111)	(53,223)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	(2,958)	(697)	(2,297)	-	(5,952)	2,958	697	2,297	-	5,952
Adjustments						76	-	(192)	-	(116)					
Total Net Costs	-	-	-	-	-	18,319	4,053	23,672	1,111	47,155	(18,243)	(4,053)	(23,864)	(1,111)	(47,271)

Amounts for each participating center below:

AFRICA RICE	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	0	0	0	0	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	0	0	0	0	-	-	-	-	-	-
Supplies and services					-	0	0	0	0	-	-	-	-	-	-
Operational Travel					-	0	0	0	0	-	-	-	-	-	-
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs					-	0	0	0	0	-	-	-	-	-	-
Total - All Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

BIOVERSITY	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	817	65	463	111	1,456	(817)	(65)	(463)	(111)	(1,456)
Collaborators Costs - CGIAR Centers					-	138	0	0	0	138	(138)	-	-	-	(138)
Collaborator Costs - Partners					-	451	84	732	37	1,304	(451)	(84)	(732)	(37)	(1,304)
Supplies and services					-	173	39	382	366	960	(173)	(39)	(382)	(366)	(960)
Operational Travel					-	31	4	75	0	110	(31)	(4)	(75)	-	(110)
Depreciation					-	2	0	0	0	2	(2)	-	-	-	(2)
Sub-total of Direct Costs	-	-	-	-	-	1,612	192	1,652	514	3,970	(1,612)	(192)	(1,652)	(514)	(3,970)
Indirect Costs					-	199	17	78	338	632	(199)	(17)	(78)	(338)	(632)
Total - All Costs	-	-	-	-	-	1,811	209	1,730	852	4,602	(1,811)	(209)	(1,730)	(852)	(4,602)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	(138)	-	-	-	(138)	138	-	-	-	138
Adjustment: Difference in CIAT's collaboration as per Bioversity's revised audited CL 2015						(2)				(2)					
Total Net Costs	-	-	-	-	-	1,671	209	1,730	852	4,462	(1,673)	(209)	(1,730)	(852)	(4,464)

CIAT	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	398	61	1,916	54	2,429	(398)	(61)	(1,916)	(54)	(2,429)
Collaborators Costs - CGIAR Centers					-	22	0	124	0	146	(22)	-	(124)	-	(146)
Collaborator Costs - Partners					-	245	0	759	0	1,004	(245)	-	(759)	-	(1,004)
Supplies and services					-	564	72	982	6	1,624	(564)	(72)	(982)	(6)	(1,624)
Operational Travel					-	84	18	245	4	351	(84)	(18)	(245)	(4)	(351)
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	1,313	151	4,026	64	5,554	(1,313)	(151)	(4,026)	(64)	(5,554)
Indirect Costs					-	112	21	512	0	645	(112)	(21)	(512)	-	(645)
Total - All Costs	-	-	-	-	-	1,425	172	4,538	64	6,199	(1,425)	(172)	(4,538)	(64)	(6,199)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	(22)	-	(124)	-	(146)	22	-	124	-	146
Adjustment: Amount not reported by CIAT on a service agreement MARLO (4500030185)						3				3					
Total Net Costs	-	-	-	-	-	1,406	172	4,414	64	6,056	(1,403)	(172)	(4,414)	(64)	(6,053)

CIFOR	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	0	0	0	0	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	0	0	0	0	-	-	-	-	-	-
Supplies and services					-	0	0	0	0	-	-	-	-	-	-
Operational Travel					-	0	0	0	0	-	-	-	-	-	-
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs					-	0	0	0	0	-	-	-	-	-	-
Total - All Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CIMMYT	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	0	0	0	0	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	0	0	0	0	-	-	-	-	-	-
Supplies and services					-	0	0	0	0	-	-	-	-	-	-
Operational Travel					-	0	0	0	0	-	-	-	-	-	-
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs					-	0	0	0	0	-	-	-	-	-	-
Total - All Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CIP	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	109	132	0	0	241	(109)	(132)	-	-	(241)
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	0	77	0	0	77	-	(77)	-	-	(77)
Supplies and services					-	50	76	0	0	126	(50)	(76)	-	-	(126)
Operational Travel					-	2	46	0	0	48	(2)	(46)	-	-	(48)
Depreciation					-	0	4	0	0	4	-	(4)	-	-	(4)
Sub-total of Direct Costs	-	-	-	-	-	**161**	**335**	-	-	**496**	**(161)**	**(335)**	-	-	**(496)**
Indirect Costs					-	24	42	0	0	66	(24)	(42)	-	-	(66)
Total - All Costs	-	-	-	-	-	**185**	**377**	-	-	**562**	**(185)**	**(377)**	-	-	**(562)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	185	377	-	-	562	(185)	(377)	-	-	(562)

ICARDA	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	205	61	92	0	358	(205)	(61)	(92)	-	(358)
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	39	78	69	0	186	(39)	(78)	(69)	-	(186)
Supplies and services					-	148	51	104	0	303	(148)	(51)	(104)	-	(303)
Operational Travel					-	36	8	12	0	56	(36)	(8)	(12)	-	(56)
Depreciation					-	42	0	0	0	42	(42)	-	-	-	(42)
Sub-total of Direct Costs	-	-	-	-	-	**470**	**198**	**277**	-	**945**	**(470)**	**(198)**	**(277)**	-	**(945)**
Indirect Costs					-	55	27	33	0	115	(55)	(27)	(33)	-	(115)
Total - All Costs	-	-	-	-	-	**525**	**225**	**310**	-	**1,060**	**(525)**	**(225)**	**(310)**	-	**(1,060)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	525	225	310	-	1,060	(525)	(225)	(310)	-	(1,060)

ICRISAT	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	559	0	664	3	1,226	(559)	-	(664)	(3)	(1,226)
Collaborators Costs - CGIAR Centers					-	0	0	187	0	187	-	-	(187)	-	(187)
Collaborator Costs - Partners					-	11	0	151	0	162	(11)	-	(151)	-	(162)
Supplies and services					-	24	27	756	0	807	(24)	(27)	(756)	-	(807)
Operational Travel					-	19	11	92	0	122	(19)	(11)	(92)	-	(122)
Depreciation					-	0	0	77	0	77	-	-	(77)	-	(77)
Sub-total of Direct Costs	-	-	-	-	-	613	38	1,927	3	2,581	(613)	(38)	(1,927)	(3)	(2,581)
Indirect Costs					-	111	7	271	1	390	(111)	(7)	(271)	(1)	(390)
Total - All Costs	-	-	-	-	-	724	45	2,198	4	2,971	(724)	(45)	(2,198)	(4)	(2,971)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	(187)	-	(187)	-	-	187	-	187
Total Net Costs	-	-	-	-	-	724	45	2,011	4	2,784	(724)	(45)	(2,011)	(4)	(2,784)

IFPRI	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	364	0	474	0	838	(364)	-	(474)	-	(838)
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	195	0	143	0	338	(195)	-	(143)	-	(338)
Supplies and services					-	134	0	196	0	330	(134)	-	(196)	-	(330)
Operational Travel					-	16	0	40	0	56	(16)	-	(40)	-	(56)
Depreciation					-	10	0	15	0	25	(10)	-	(15)	-	(25)
Sub-total of Direct Costs	-	-	-	-	-	719	-	868	-	1,587	(719)	-	(868)	-	(1,587)
Indirect Costs					-	102	0	127	0	229	(102)	-	(127)	-	(229)
Total - All Costs	-	-	-	-	-	821	-	995	-	1,816	(821)	-	(995)	-	(1,816)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	821	-	995	-	1,816	(821)	-	(995)	-	(1,816)

IITA	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	175	0	843	0	1,018	(175)	-	(843)	-	(1,018)
Collaborators Costs - CGIAR Centers					-	0	0	1,875	0	1,875	-	-	(1,875)	-	(1,875)
Collaborator Costs - Partners					-	0	0	548	0	548	-	-	(548)	-	(548)
Supplies and services					-	(110)	(1)	836	0	725	110	1	(836)	-	(725)
Operational Travel					-	8	0	254	0	262	(8)	-	(254)	-	(262)
Depreciation					-	0	0	229	0	229	-	-	(229)	-	(229)
Sub-total of Direct Costs	-	-	-	-	-	73	(1)	4,585	-	4,657	(73)	1	(4,585)	-	(4,657)
Indirect Costs					-	10	0	29	0	39	(10)	-	(29)	-	(39)
Total - All Costs	-	-	-	-	-	83	(1)	4,614	-	4,696	(83)	1	(4,614)	-	(4,696)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	(1,875)	-	(1,875)	-	-	1,875	-	1,875
Total Net Costs	-	-	-	-	-	83	(1)	2,739	-	2,821	(83)	1	(2,739)	-	(2,821)

ILRI	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	54	180	88	0	322	(54)	(180)	(88)	-	(322)
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	119	45	54	0	218	(119)	(45)	(54)	-	(218)
Supplies and services					-	20	45	26	0	91	(20)	(45)	(26)	-	(91)
Operational Travel					-	1	10	6	0	17	(1)	(10)	(6)	-	(17)
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	194	280	174	-	648	(194)	(280)	(174)	-	(648)
Indirect Costs					-	71	0	23	0	94	(71)	-	(23)	-	(94)
Total - All Costs	-	-	-	-	-	265	280	197	-	742	(265)	(280)	(197)	-	(742)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	265	280	197	-	742	(265)	(280)	(197)	-	(742)

IRRI	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	76	0	0	0	76	(76)	-	-	-	(76)
Collaborators Costs - CGIAR Centers					-	93	0	0	0	93	(93)	-	-	-	(93)
Collaborator Costs - Partners					-	33	0	0	0	33	(33)	-	-	-	(33)
Supplies and services					-	9	0	0	0	9	(9)	-	-	-	(9)
Operational Travel					-	9	0	0	0	9	(9)	-	-	-	(9)
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	220	-	-	-	220	(220)	-	-	-	(220)
Indirect Costs					-	17	0	0	0	17	(17)	-	-	-	(17)
Total - All Costs	-	-	-	-	-	237	-	-	-	237	(237)	-	-	-	(237)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	(93)	-	-	-	(93)	93	-	-	-	93
Total Net Costs	-	-	-	-	-	144	-	-	-	144	(144)	-	-	-	(144)

IWMI	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	3,950	1,016	2,538	0	7,504	(3,950)	(1,016)	(2,538)	-	(7,504)
Collaborators Costs - CGIAR Centers					-	2,468	697	111	0	3,276	(2,468)	(697)	(111)	-	(3,276)
Collaborator Costs - Partners					-	2,679	736	2,481	0	5,896	(2,679)	(736)	(2,481)	-	(5,896)
Supplies and services					-	1,832	676	2,408	0	4,916	(1,832)	(676)	(2,408)	-	(4,916)
Operational Travel					-	140	70	357	0	567	(140)	(70)	(357)	-	(567)
Depreciation					-	13	0	74	0	87	(13)	-	(74)	-	(87)
Sub-total of Direct Costs	-	-	-	-	-	**11,882**	**3,195**	**7,969**	-	**22,246**	**(11,882)**	**(3,195)**	**(7,969)**	-	**(22,246)**
Indirect Costs					-	1,028	248	878	0	2,154	(1,028)	(248)	(878)	-	(2,154)
Total - All Costs	-	-	-	-	-	**12,118**	**3,443**	**8,847**	-	**24,488**	**(12,118)**	**(3,443)**	**(8,847)**	-	**(24,488)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	**(2,468)**	**(697)**	**(111)**	-	**(3,276)**	**2,468**	**697**	**111**	-	**3,276**
Total Net Costs	-	-	-	-	-	9,642	2,746	8,736	-	21,124	(9,642)	(2,746)	(8,736)	-	(21,124)

WORLD AGROFORESTRY	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	499	0	1,345	153	1,997	(499)	-	(1,345)	(153)	(1,997)
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	0	0	195	0	195	-	-	(195)	-	(195)
Supplies and services					-	35	0	737	40	812	(35)	-	(737)	(40)	(812)
Operational Travel					-	24	0	146	18	188	(24)	-	(146)	(18)	(188)
Depreciation					-	24	0	2	3	29	(24)	-	(2)	(3)	(29)
Sub-total of Direct Costs	-	-	-	-	-	**582**	-	**2,425**	**214**	**3,221**	**(582)**	-	**(2,425)**	**(214)**	**(3,221)**
Indirect Costs					-	87	0	286	0	373	(87)	-	(286)	-	(373)
Total - All Costs	-	-	-	-	-	**669**	-	**2,711**	**214**	**3,594**	**(669)**	-	**(2,711)**	**(214)**	**(3,594)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adjustment: ICRAF did not report Collaboration-ICRAF reported by Bioversity as W1&2						78		(192)		(114)					
Total Net Costs	-	-	-	-	-	747	-	2,519	214	3,480	(669)	-	(2,711)	(214)	(3,594)

WORLDFISH	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	144	0	11	(12)	143	(144)	-	(11)	12	(143)
Collaborators Costs - CGIAR Centers					-	0	0	0	0	-	-	-	-	-	-
Collaborator Costs - Partners					-	0	0	0	0	-	-	-	-	-	-
Supplies and services					-	61	0	4	(1)	64	(61)	-	(4)	1	(64)
Operational Travel					-	20	0	3	(7)	16	(20)	-	(3)	7	(16)
Depreciation					-	0	0	0	0	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	**225**	-	**18**	**(20)**	**223**	**(225)**	-	**(18)**	**20**	**(223)**
Indirect Costs					-	32	0	3	(3)	32	(32)	-	(3)	3	(32)
Total - All Costs	-	-	-	-	-	**257**	-	**21**	**(23)**	**255**	**(257)**	-	**(21)**	**23**	**(255)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	-	-	-	-	-	257	-	21	(23)	255	(257)	-	(21)	23	(255)

PMU	POWB Approved Budget					Actual					Unspent/Variance				
Personnel					-	846	0	0	0	846	(846)	-	-	-	(846)
Collaborators Costs - CGIAR Centers					-	237	0	0	0	237	(237)	-	-	-	(237)
Collaborator Costs - Partners					-	0	0	0	0	-	-	-	-	-	-
Supplies and services					-	637	0	0	0	637	(637)	-	-	-	(637)
Operational Travel					-	113	0	0	0	113	(113)	-	-	-	(113)
Depreciation					-	1	0	0	0	1	(1)	-	-	-	(1)
Sub-total of Direct Costs	-	-	-	-	-	**1,834**	-	-	-	**1,834**	**(1,834)**	-	-	-	**(1,834)**
Indirect Costs					-	255	0	0	0	255	(255)	-	-	-	(255)
Total - All Costs	-	-	-	-	-	**2,089**	-	-	-	**2,089**	**(2,089)**	-	-	-	**(2,089)**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	**(237)**	-	-	-	**(237)**	**237**	-	-	-	**237**
Total Net Costs	-	-	-	-	-	1,852	-	-	-	1,852	(1,852)	-	-	-	(1,852)

CRP No. 5 - Water, Land and Ecosystems
Period: 01/01/2015 - 12/21/2015
Amounts in USD 000's

CRP Partnership Report

Report Description

Name of Report: CRP Partnerships Report
Frequency/Period: Annual
Deadline: Every April 15th

TOTAL FOR CRP 5 - Water, Land and Ecosystems | **Actual Expenses - This Year**

Item	Institute Acronym	Institute Name	Country	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1		ACOYF-ASBL DRC	Congo, The Democratic Re	-	-	4	-	4
2	A2N	Africa 2000 Network	Uganda	-	32	-	-	32
3	Africa Rice Center	Africa Rice Center	Benin	-	-	860	-	860
4	AFAP	African Fertilizer Agribusine	South Africa	-	10	-	-	10
5	ARC	Agricultural Research Cente	Egypt	-	88	-	-	88
6	ARC	Agricultural Research Cente	Pakistan	-	-	278	-	278
7	CIRAD	Agricultural Research for De	Kenya	-	27	-	-	27
8		Agro Trials in Zanzibar	Tanzania, United Republic	-	-	2	-	2
9		AIS Group		-	-	13	-	13
10	ARARI	Amhara Region Agricultural	Ethiopia	140	41	8	-	189
11	ARI	Animal Research Institute	Ghana	-	-	8	-	8
12	ATEEC	Arab Technologists for Econ	Jordan	-	-	15	-	15
13	AMU	Arba Minch University	Ethiopia	-	-	13	-	13
14	ASU	Arizona State University	United States	67	-	-	-	67
15	AIT	Asian Institute of Technolog	Thailand	40	-	96	-	136
16	ACDEP	Association of Church Devel	Ghana	36	-	-	-	36
17	AEMFI	ASSOCIATION OF ETHIOPIAI	Ethiopia	-	-	25	-	25
18	BDU	Bahir Dar University	Ethiopia	-	-	47	-	47
19		Baker Tilly	Nigeria	-	-	4	-	4
20	BRRI	Bangladesh Rice Research Ir	Bangladesh	9	-	-	-	9
21		Basava Jyothi	India	-	-	31	-	31
22	BSADP	BAUCHI STATE AGRICULTUR	Nigeria	-	-	3	-	3
23	Bioversity	Bioversity International	Italy	1,003	-	-	-	1,003
24		BOARD OF TRUSTEES OF TH	United States	60	-	-	-	60
25	BRAC	BRAC	Bangladesh	29	-	-	-	29
26		Bureau De Reboisement Ser	Congo, The Democratic Re	-	-	2	-	2
27	BACAS	BUREAU OF AGRICULTURAL	Tanzania, United Republic	-	-	64	-	64
28	CDRI	Cambodia Development Re	Cambodia	75	-	29	-	104
29	CMDR	Center for Multi-Disciplinary	India	-	-	13	-	13
30	CSDS	Center for Social Developm	Thailand	55	-	73	-	128
31	WARECOD	Center for Water Resources	Vietnam	131	-	-	-	131
32	CIRAD	Centre de coopération inter	France	36	-	-	-	36
33	CABI	Centre for Agriculture & bio	Kenya	-	12	-	-	12
34	CDHI	Centre for Development of	India	-	-	43	-	43
35	BUK	Centre for Dryland Agric, BU	Nigeria	-	-	35	-	35
36	IRMA	Centre for Rural-Urban Dyn	India	48	-	-	-	48
37	CNSF	Centre National de Semenc	Burkina Faso	-	-	(1)	-	(1)
38	CIMMYT	Centro Internacional de Ma	Mexico	-	-	36	-	36
39	CIPAV	Centro para la investigación	Colombia	-	-	51	-	51

40	CIRAD	CIRAD - Agricultural Researc	France	263	84	-	24	**371**
41	UG-LEGON	College of Basic & Sciences,	Ghana	-	-	6	-	**6**
42		Combusto Tanzania Ltd	Tanzania, United Republic	-	-	10	-	**10**
43		Conservation Alliance	Ghana	214	-	-	-	**214**
44	CSIR	Council for Scientific and In	Ghana	-	-	59	-	**59**
45	CRI	Crops Research Institute, Gl	Ghana	-	-	5	-	**5**
46		Danbort Company Limited	Ghana	-	-	296	-	**296**
47		Data Monitor -Jhansi	India	8	-	-	-	**8**
48		Department of Agriculture (	Sri Lanka	-	-	37	-	**37**
49		Department of Irrigation	Laos	-	-	-	-	-
50	DWR	Department of Water Resou	Lao PDR	-	12	-	-	**12**
51		EBATEQ		-	-	3	-	**3**
52		Ecofish Research Limited	Canada	24	-	78	-	**102**
53	ECCDI	Ecosystem Conservation an	Myanmar	-	-	21	-	**21**
54	EGU	Egerton University	Kenya	-	17	-	-	**17**
55		Electronic Corp	Senegal	-	-	29	-	**29**
56	EIAR	Ethiopian Institute of Agricu	Ethiopia	-	47	-	-	**47**
57	EIB	Ethiopian Institute of Biodiv	Ethiopia	49	-	-	-	**49**
58	FAO	Food and Agriculture Organ	Thailand	-	224	-	-	**224**
59	PROINPA	Fundación para la Promoció	Bolivia	-	-	65	-	**65**
60	N/A	GAIA PACHA	Bolivia	-	-	-	-	-
61	GAEC	Ghana Atomic Energy Comn	Ghana	-	-	1	-	**1**
62	GIDA	Ghana Irrigation Developme	Ghana	188	-	-	-	**188**
63		Giant Rabbit, LLC	United States	55	-	-	-	**55**
64		Grupo Gea	Peru	-	-	43	-	**43**
65	HUA	Hanoi University of Agricult	Vietnam	-	-	24	-	**24**
66		Hoa Binh International Tour	Vietnam	135	-	-	-	**135**
67	ICEM	ICEM ASIA Limited	Vietnam	32	-	154	-	**186**
68	iDE	iDE International	Nepal	-	-	61	-	**61**
69		IDE-Ghana	Ghana	26	-	-	-	**26**
70	ICAR	Indian Council for Agricultur	India	-	-	11	-	**11**
71	IISc	Indian Institute of Science	India	-	-	10	-	**10**
72	IIT	Indian Institute of Technolo	India	47	-	4	-	**51**
73	IAV	Insitut Agronomic et Veterir	Morocco	4	-	-	-	**4**
74	IRD	INST DE RECHERCHE POUR I	France	10	-	-	-	**10**
75	INERA	Institut de l'Environnement	Burkina Faso	-	-	67	-	**67**
76	IRD	Institut de recherche pour le	France	-	26	-	-	**26**
77	INRGREF	Institut National de Recherc	Tunisia	-	-	13	-	**13**
78	INRAN	Institut Nationale de la Rech	Niger	-	-	76	-	**76**
79	IER	Institute D` Economie Rural	Mali	-	-	105	-	**105**
80	IASS	INSTITUTE FOR ADVANCED S	Germany	-	-	107	-	**107**
81	IAE	INSTITUTE FOR AGRICULTUI	Viet Nam	11	-	-	-	**11**
82	IAR	Institute for Agricultural Res	Nigeria	-	21	10	-	**31**
83	IGES	Institute for Global Environr	Japan	-	48	-	-	**48**
84	IDS	Institute Of Development St	India	10	-	-	-	**10**
85	IDS	Institute of Development St	Tanzania, United Republic	-	-	1	-	**1**
86	IDS	INSTITUTE OF DEVELOPMEN	United Kingdom	40	-	-	-	**40**
87	IRA	INSTITUTE OF RESOURCE AS	Tanzania, United Republic	-	-	21	-	**21**
88	SINCHI	Instituto amazonico de inve	Colombia	-	-	34	-	**34**
89	IIAP	INSTITUTO DE INVESTIGACI	Peru	-	-	76	-	**76**
90	INIFAT	Instituto de Investigaciones	Cuba	-	-	52	-	**52**
91	ICARDA	International Center for Agr	Lebanon	-	-	40	-	**40**

92	ICARDA	International Center for Agr	Lebanon	-	-	681	-	**681**
93	ICBA	International Center for Bio	Utd.Arab Emir.	-	-	32	-	**32**
94	ICEM	International Center for Env	Viet Nam	-	-	53	-	**53**
95	CIAT	International Center for Tro	Colombia	1,175	343	-	-	**1,518**
96	ICIPE	International Center of Inse	Kenya	-	-	4	-	**4**
97	ICIMOD	International Centre for Int	Nepal	201	-	-	-	**201**
98	CEWAS	International Centre for Wa	Switzerland	-	-	58	-	**58**
99	ICRISAT	International Crops Researc	India	17	39	-	-	**56**
100	IDE	International Development	Burkina Faso	25	-	-	-	**25**
101	IFPRI	International Food Policy Re	United States	737	-	440	-	**1,177**
102	IIRR	International Institute of Ru	Philippines	11	-	-	-	**11**
103	ILRI	International Livestock Rese	Kenya	197	432	60	-	**689**
104	CIMMYT	International Maize and Wh	Mexico	-	-	80	-	**80**
105	IRRI	International Rice Research	Philippines	232	-	60	-	**292**
106	IUCN	International Union for Con	Burkina Faso	48	-	-	-	**48**
107	IUCN	International Union for Con	Switzerland	-	29	-	-	**29**
108	IWMI	International Water Manag	Sri Lanka	94	55	18	-	**167**
109	IWM	International Water Modeli	Bangladesh	62	-	-	-	**62**
110		IPABEL		-	-	3	-	**3**
111		ISANDA, DRC	Congo, The Democratic Re	-	-	2	-	**2**
112	JIRKUR	Jirkur Seed Cooperative Biu	Nigeria	-	-	1	-	**1**
113		Julian Gonsalves	Philippines	-	-	-	-	-
114	KADP	Kaduna State Agric. Develo	Nigeria	-	-	2	-	**2**
115	KNARD	Kano State Agricultural and	Nigeria	-	-	2	-	**2**
116	KTARDA	Kastina state Agricultural ar	Nigeria	-	-	2	-	**2**
117	KEPHIS	Kenyan Plant Health Inspect	Kenya	-	13	-	-	**13**
118	KKU	Khon Kaen University	Thailand	-	10	-	-	**10**
119	KRASS	KHOREZM RURAL ADVISOR\	Uzbekistan	8	-	-	-	**8**
120		KIBET, STEPHEN	Netherlands	38	-	-	-	**38**
121		Kilimo Trust	Uganda	169	-	-	-	**169**
122	KCL	KING'S COLLEGE LONDON	United Kingdom	43	-	-	-	**43**
123		KULIMA INTEGRATED DEVEL	South Africa	-	-	15	-	**15**
124	KNUST	Kwame Nkrumah University	Ghana	50	58	-	-	**108**
125	KSAD	Kwara State Agic Developm	Nigeria	-	-	2	-	**2**
126		Lake Zone Ukigiguru Resear	Tanzania, United Republic	-	-	16	-	**16**
127	LUANAR	Lilongwe University of Agric	Malawi	-	-	13	-	**13**
128	Lisode	Lisode	France	-	-	66	-	**66**
129	LI-BIRD	LOCAL INITIATIVES - FOR BI	Nepal	-	-	193	-	**193**
130	MSC	Maina Seeds Company Ltd (	Nigeria	-	-	1	-	**1**
131	MAKERERE	Makerere University	Uganda	-	44	-	-	**44**
132	La Montañona	Manc. La Montañona	El Salvador	-	-	29	-	**29**
133		MAQE Bangkok Co.Ltd	Thailand	16	-	-	-	**16**
134	MU	Mekelle University	Ethiopia	34	-	-	-	**34**
135	MERFI	Mekong Region Futures Insti	Thailand	178	-	-	-	**178**
136	MSSRC	Mekong Sub-Regional Socia	Thailand	55	-	75	-	**130**
137		Mikocheni Agric. Research I	Tanzania, United Republic	-	-	2	-	**2**
138	MP-Tanzania	Millenium Promise Alliance	Tanzania, United Republic	-	-	8	-	**8**
139	MIN	Ministry of Animal Resource	Niger	6	-	-	-	**6**
140		MONECO		-	-	14	-	**14**

141		Mount Makulu Central Res	Zambia	-	-	-	-	-
142	ZARI MT.	MT Agriculture	Zambia	-	-	5	-	5
143	MIID	Myanmar Institute for Integ	Myanmar	-	-	63	-	63
144	MYRADA	Mysore Resettlement and D	India	-	-	4	-	4
145	NADP	Nasarawa State Agricultural	Nigeria	-	-	2	-	2
146	NARO	National Agricultural Resear	Uganda	-	-	19	-	19
147	N/A	NATIONAL CAPITAL PROJEC	United States	29	-	-	-	29
148	NGRI	National Geophysical Resea	India	-	-	1	-	1
149	NIH	National Institute of Hydrol	India	8	-	-	-	8
150	NUOL	National University of Lao P	Lao PDR	-	13	14	-	27
151	NUS	National University of Singa	Singapore	-	-	10	-	10
152	NWRC	National Water Research Ce	Egypt	-	57	-	-	57
153		Natural Resources and Envi	Laos	-	23	-	-	23
154	NARC	Nepal Agricultural Research	Nepal	-	-	102	-	102
155	NBCBN	Nile Basin Capacity Building	Egypt	217	-	-	-	217
156	Notore	Notore Chemical Industries	Nigeria	-	37	-	-	37
157	OSAW	OSAW Agro Industries	India	-	-	28	-	28
158	OYSADEP	Oyo State Agricultural Deve	Nigeria	-	-	2	-	2
159	SARL	Pepino SARL		-	-	8	-	8
160	PPRSDMOFA	Plant Protection Regulatory	Ghana	-	8	-	-	8
161	PRDS	Pranati Rural Development	India	-	-	8	-	8
162		Programme Nationale Legu	Congo, The Democratic Re	-	-	75	-	75
163	Rapha	Rapha Consult	Ghana	-	-	20	-	20
164	CAREC	REGIONAL ENVIRONMENTA	Uzbekistan	50	-	-	-	50
165	N/A	RESEARCH INSTITUTE OF HC	Uzbekistan	-	-	21	-	21
166	READ	Rural Education and Agricul	India	-	-	15	-	15
167		Sakhi	India	-	-	26	-	26
168	SARI	Savanna Agric. Research Ins	Ghana	-	-	3	-	3
169	NUST	School of Civil and Environn	Pakistan	13	-	-	-	13
170	SIC-ICWC	SCIENTIFIC-INFORMATION C	Uzbekistan	25	-	-	-	25
171	SARI	SELIAN AGRICULTURAL RESI	Tanzania, United Republic	-	-	47	-	47
172	SAR	Selian Agricultural Research	Tanzania, United Republic	-	-	9	-	9
173		Send a Cow	Ethiopia	-	-	9	-	9
174	Shushilan	Shushilan	Bangladesh	33	-	-	-	33
175	SNV	SNV WORLD Netherlands D	Netherlands	64	-	-	-	64
176	SOFDEC	SOCIETY FOR COMMUNITY I	Cambodia	19	-	-	-	19
177	BACAS	Sokoine University of Agricu	Tanzania	-	-	34	-	34
178	SARRNET	Southern Africa Root Crops	Tanzania, United Republic	-	-	3	-	3
179	SAFIRE	Southern Alliance for Indige	Zimbabwe	-	-	4	-	4
180	MetaMeta	Spate Irrigation Network Fo	Netherlands	285	191	-	-	476
181	MYRADA	Sri Markandeshnwara Sama	India	-	-	35	-	35
182	NatCap	Stanford University - Board	United States	168	-	-	-	168
183	SEI	Stockholm Environment Ins	Sweden	14	80	-	-	94
184	SwedBio	STOCKHOLM RESILIENCE CE	Sweden	62	-	-	-	62
185		STOPNITZKY, YANIV	United States	22	-	-	-	22
186	EAWAG	Swiss Federal Institute of Ac	Switzerland	-	-	43	-	43
187		Tahlil va Mashvarat, LLC	Tajikistan	-	15	-	-	15
188	TFRA	Tanzania Fertilizer Regulato	Tanzania, United Republic	-	49	-	-	49
189	TLR	Tanzania Livestock Researcl	Tanzania, United Republic	-	-	7	-	7
190	TU Delft	Technische Universiteit Delf	Netherlands	160	-	-	-	160

191	AATF	The African Agricultural Tec	Kenya	-	30	-	-	30
192	CENESTA	The Centre for Sustainable D	Iran, Islamic Republic Of	-	-	-	-	-
193	IWMI	The International Water Ma	Srilanka	-	-	60	-	60
194	TNC	The Nature Conservancy	United States	215	-	-	-	215
195	UAF	The University of Agricultur	Pakistan	10	-	-	-	10
196		The University of Arizona	United States	99	-	-	-	99
197		The Water Solutions	India	18	-	-	-	18
198	AVRDC	The World Vegetable Cente	Taiwan	-	-	91	-	91
199		THOMPSON, JACOB BART	United States	12	-	17	-	29
200	TLC	TOTAL LAND CARE	Malawi	-	-	59	-	59
201	UBU	Ubon Ratchathani Universit	Thailand	-	-	9	-	9
202	UNESCO-IHE	UNESCO IHE Institute for W	Netherlands	198	-	25	-	223
203	UNEP-GEF	United Nations Environmen	France	-	-	5	-	5
204	UF	Univerity of Florida Board o	United States	20	-	-	-	20
205	UNAMAZ	Universidad de la Amazonia	Colombia	-	-	60	-	60
206	UNALM	Universidad Nacional Agrari	Peru	-	-	21	-	21
207	UNDC	UNIVERSIDAD NACIONAL DI	Colombia	-	-	4	-	4
208	UTEQ	Universidad Técnica Estatal	Ecuador	7	-	-	-	7
209	UCB	Universite Catholique de Bu	Congo, The Democratic Re	-	-	9	-	9
210	UDS	UNIVERSITY FOR DEVELOPM	Ghana	-	-	70	-	70
211		UNIVERSITY OF BONN	Germany	-	-	22	-	22
212		UNIVERSITY OF CENTRAL FL	United States	32	-	-	-	32
213	UDS	UNIVERSITY OF DEVELOPMI	Ghana	71	-	33	-	104
214	UDOM	University of Dodoma	Tanzania, United Republic	-	-	17	-	17
215	EUA	University of East Anglia	United Kingdom	129	-	-	-	129
216	UH	University of Helsinki	Finland	-	-	95	-	95
217	UH	University of Hohenheim - I	Germany	-	-	85	-	85
218	UM	UNIVERSITY OF MINNESOTA	United States	27	-	-	-	27
219	UoN	University Of Nairobi	Kenya	-	-	2	-	2
220	BOKU	University of Natural Resou	Austria	-	22	-	-	22
221		UNIVERSTY OF MASSACHUS	United States	110	-	-	-	110
222	UBKV	Uttar Banga Krishi Viswavid	India	-	-	13	-	13
223	VAWR	Vietnam Academy for Wate	Vietnam	55	-	77	-	132
224		Village Focus International	Laos	231	-	-	-	231
225	WU	Wageningen University-Inte	Netherlands	217	-	-	-	217
226		Wagtech Projects	United Kingdom	-	-	60	-	60
227	WSU	WASHINGTON STATE UNIVE	United States	42	-	-	-	42
228	WLRC	Water and Land Resource C	Ethiopia	-	-	67	-	67
229	WASCAL	West Africa Centre for Clim	Burkina Faso	40	-	-	-	40
230		WETLANDS INTERNATIONAL	Netherlands	10	-	-	-	10
231	WIAD- MoFA	Women in Agricultural Dev	Ghana	25	-	-	-	25
232	ICRAF	WORLD AGROFORESTRY CE	Kenya	149	4	-	-	153
233	WWF	World Wide Fund for Natur	India	46	-	-	-	46
234	WorldFish	WorldFish Center	Malaysia	250	-	-	-	250
235		York University	Canada	-	-	49	-	49
236	ZADP	Zamfara State Agricultural D	Nigeria	-	-	2	-	2
237	ZARI-MANSA	Zonal Agric Research Institu	Zambia	-	-	9	-	9
238		ZURN GMBH	Germany	-	-	21	-	21
239		Other Collaborations		75	1	48	-	124
								-
	Total for CRP			**9,498**	**2,242**	**6,850**	**24**	**18,614**

Annex 5: Update of WLE's Theory of Change and Impact Pathways

Underpinning WLE's theory of change during Phase 1 were a set of three research questions[66] central to WLE's focus on critical natural resource challenges. This placed WLE firmly focused on tackling the SRF SLO3 on improved natural resource systems and ecosystems services. All three IDOs and seven of the nine [67] sub-IDOs are directly addressed by the Program, unchanged since its initiation in 2012. In addition, WLE has contributed to SLO2 through, inter alia, work on water quality; and to SLO1 via the work on resilience through agriculture and land water management.

The first research question focuses on *balancing ecosystems services while increasing agricultural productivity* has sought to directly address the *IDO on enhancing benefits from ecosystems goods and services*, and in particular focusing on the *sub-IDOs of more productive and equitable management of natural resources* and *the diversification of agricultural systems to protect soil and water*. This has been contributed to in particular by Flagship (FP) 1's integrated ecosystems services work, through – inter alia – the focal region projects and FP4's work on the reuse of renewable resources. Major outputs have focused on understanding the trade-offs in ecosystems services from agricultural and infrastructural interventions and approaches to create resilient livelihoods and food production systems. Key strategies have focused on the co-development of solutions with communities and implementing partners to demonstrate that ecosystem based approaches are economically viable, at scale over the long-term through scientifically based knowledge, tools and methodologies. The major assumptions have been around the willingness of key agents of change – policy-makers and investors to utilize and ideas and research produced. Adapting and learning throughout the first phase has resulted in a greater focus on political economy analysis, understanding and targeting change agents, and working more upstream. Key outcomes have been achieved in 2016, through the likes of the Greater Mekong Forum where policy makers and investors have begun to demonstrate their interest and engagement in the processes initiated in the program and the products and services provided. RRR's work on co-composting through public private partnerships is growing rapidly, expanding beyond the work in Ghana to Sri Lanka, India and Nepal.

The second question focuses on *innovative methods and mechanisms to improve ecosystem provisioning and gender equity*, which has addressed both the IDOs on *enhancing natural capital* and on *more sustainably managing agro-ecosystems*. It has been tackled by a range of flagships (FP2 on agricultural land and water solutions, and FP5 on managing resource variability in particular). Key strategies in these flagship pathways have been to use scientific and practical (field-tested) solutions to increase (FP2) land and water productivity and foster more resilient, food-secure farming communities that benefit from well-functioning ecosystems or (FP5) alleviate the impacts of variability and enhance ecosystem services provided by surface and underground sources and storages of water, establish mechanisms for governance and benefit sharing of natural resources. A similar set of assumptions to the first area exist here, around the extent to which identified research gaps and needs translate into uptake by key intermediaries, who will understand and apply at scale these products and services. WLE has achieved some of its major outcome in this area, around the scaling out of the work of the underground taming of floods for irrigation (UTFI) and the positive and independently verified impact of water governance and management interventions on agricultural production the polders in Bangladesh.

The third question focuses on ensuring that *investments in water, food, land and energy are sustainable* and has cut across several IDOs in the SRF, including *increasing resilience under SLO1* as well as the *three IDOs under SLO3*. Nexus work under FP5 and innovative pilots under FP1 have all contributed to results in this pathway. In particular, establishing the first solar pump irrigators cooperative in the world in May 2016 in Gujarat, India. It is a small experiment that is contributing to India's ambitious target of establishing 100GW of solar energy

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[66] 1. How can we **balance healthy ecosystem services while increasing agricultural productivity**? 2) What **innovative institutional, governance and management practices** can improve ecosystem provisioning and support the achievement of gender equity? 3) How can we ensure that **investments in water, food, land and energy are sustainable** and meet national and sub-national goals?

[67] Enhancing the conservation of habitats and the enrichment of plant and animal biodiversity are the only two sub-IDOs under SLO3 to which WLE is not directly contributing.

by 2022, and it is leading to widespread outscaling of the model, selling excess electricity back to the grid to reduce the over-pumping of aquifers.