



RESEARCH PROGRAM ON Dryland Systems

Annual Report 2013

# Toward a Systems Approach

Working with integrated agro-ecosystems to improve rural livelihoods



Diversified rainfed systems



Crop-livestock-rangeland systems



Empowering women



Productive pastoral systems



New crops for new income



Innovative water and land management



• National Research and Extension Systems • Advanced research Institutions • Farming communities • The Global Forum for Agricultural Research and its sub-regional organizations • Development agencies • Sub-regional organizations • Civil society organizations • Private sector

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## KEY MESSAGES

### A.1 Synthesis of progress and challenges

The Dryland Systems program uses a systems approach to test and deliver strategies and tools to **reduce vulnerability** for people living in low-potential dryland production systems; and to **support sustainable intensification** of food production for those in higher-potential drylands regions.

The 2013 work builds on an intensive inception phase in 2012, where the program's research agenda and priorities were set by a broad and scientific consultation between several hundred project partners in the five agro-ecological target regions. This resulted in the detailed characterization of research Action Sites published in the [Dryland Systems Inception Report](#) (2012)<sup>1</sup>. This process has inspired similar actions by the World Bank's Drylands Program, USAID's Africa Rising Initiative and the France's CIRAD Transmed Program, who refer to the Dryland Systems method. The program was launched at an international launch meeting in May 2013, attended by some 200 participants from all Flagship Target Regions, ranging from NARS to national and international scientists, policy makers, NGOs, and a number of senior government officials from Jordan.

**Dryland Systems is put into action in five Flagship Target Regions**

- West Africa Sahel & Dry Savannas
- North Africa & West Asia
- East & Southern Africa
- Central Asia and South Asia
- South Asia

**Led by The International Center for Agricultural Research in the Dry Areas (ICARDA), with seven other CGIAR Centers – ICRISAT, ICRAF, ILRI, IMWI, CIAT, Bioversity and CIP.**

The key achievements in 2013 are (for details see below and Table in Annex): (1) Establishing of 15 innovation platforms covering most Action Sites, bringing international and national researchers, local policymakers, academia, NGOs and the private sector. (2) Preparing the scientific basis for the program with a wide range of assessments, studies, benchmarking exercises, and detailed research site and agenda scoping and planning with partners. (3) Putting in place key processes and policies to guide the progress of the program – business plan, regional research priority setting, gender strategy, and communication action plan. (4) The ramp-up of a number of “systems” partnership and capacity building activities. (5) The start of testing of practices and interventions for integrated value chains as they affect productivity improvement in a number of sites. (6) A number of new research publications have resulted from this work in progress. The systems concept was framed by partners in the Dryland Systems community and published in [Food Security Journal](#)<sup>1</sup>; it is receiving attention among the global food security and agricultural research communities (*currently ranks second in readership related to 66 other articles on food security in this journal; and is the top read article for all article of this ages in the journal, April 20, 2014*).

#### Highlights – key progress areas 2013:

1. **Innovation Platforms created.** 15 Innovation platforms linked to Action Sites and activity-sites were created in formal processes with all partners. Follow-up in 2014 will ensure that for each Action Site in all Flagships an IP will be established.
2. **Business processes - activities were mapped to IDOs, Outcomes and Outputs,** to support activity-based budgeting in CGIAR OCS business processes. **Action Sites created.** Each Action Site was assigned its coordinator. The program structure has been re-focused reflect the structure of the CGIAR CRP Phase 2 Call planned for 2016.
3. **Integrating a wide range of others' research and expertise into Dryland Systems.** As of 2011 many of the new research funding proposals being submitted by Dryland Systems partners in the international centers and action sites target a systems approach and have explicit links to the Dryland Systems program. This process is still in its early stages, but initial evidence suggests that systems thinking is already starting to take hold among many partners, in other research centers and is appreciated among donors (overall funding for Dryland Systems increased by more than 30% from 2012 to 2013).

<sup>1</sup> van Ginkel, M., J. Sayer, F. Sinclair, A. Aw-Hassan, D. Bossio, P. Craufurd, M. El Mourid, N. Haddad, D. Hoisington, N. Johnson, C. León Velarde, V. Mares, A. Mude, A. Nefzaoui, A. Noble, K.P.C. Rao, R. Serraj, S. Tarawali, R. Vodouhe, and R. Ortiz. 2013. An integrated agro-ecosystem and livelihood systems approach for the poor and vulnerable in dry areas. *Food Security* 5 (6): 751-767. DOI 10.1007/s12571-013-0305-5.

4. **Dryland Systems is a 'systems resource' for commodity CRPs.** Dryland Systems proposes to the commodity and thematic CRPs to benefit from the Dryland Systems platform and growing systems expertise to integrate their research into systems solutions for countries and farmers. Dryland Systems offers a platform for testing and fine-tuning of their technologies in an integrated agro-ecosystems setting that reflects the daily reality of drylands communities. And a useful feedback loop on how their research can be most relevant to user communities in the world's drylands.
5. **Gender strategy.** The Gender Strategy stresses the need for gender integration in agro-ecosystems. This integration is supported by one gender and one socio-economics/gender professional in the lead center, with a third position advertised, and similar positions with partners.
6. **Communication, advocacy and information management action plan.** The plan, agreed in February and started in March, acts on four levels: advocating the big issues (ToC and IDO-based) of dryland systems agriculture; knowledge sharing in the project cycle; synthesis of research in progress; information management, linked to CGIAR Open Access policies. Communication to social media was on a daily basis (300 Facebook; 300 Twitter) with updates posted to websites several times monthly <http://drylandsystems.cgiar.org>.

### Challenges

1. **Making a 'systems approach' work.** The major challenge for Dryland Systems is to implement and outscale a truly integrated agro-ecosystems approach. Achieving this requires a major shift in thinking and practice for all partners. It is a key targeted impact of the program and declared by some the essence of the CGIAR reform. This process of behavior change will happen incrementally in the Action Sites and Flagship regions, with some developing more rapidly than others. The achievements reported here document some fully-integrated systems approaches in action. But many achievements are reported precisely because they have significant *potential* to be integrated, but developing this needs more work between partners. The program management's focus is to further progress and demonstrate integrated approaches and work with the partners to make this a reality across the board. The outputs highlighted in the report were chosen for their active systems work or their high potential to bring systems practices to the program.

### A.2 Two significant achievements

#### An integrated approach to bridging yield gaps:

In partnership with Department of Agriculture, Government of Karnataka, a proof of concept was established to track impacts and IDOs. A consortium of State Agricultural Universities, Krishi Vigyan Kendras (district-level Farm Science Center) and government agencies led by ICRISAT has reached millions of farmers to enhance the crop productivity. During 2013 crop season, total area coverage was 5.1 Million ha with new integrated technologies (improved soil, water, seeds, pest management, etc.) covering 3.6 million farmers in all 30 districts of Karnataka state, India. The participatory trials with soil-test-based nutrient management along with other improved technologies such as improved cultivar seeds, soil water management options and seed treatment were evaluated by farmers and recorded increased cereals and legume crop yield over farmers practice varying from 21% in paddy to 43% in pearl millet; 28% in soybean to 37% in pigeon pea.

Similarly, oilseed crops like sunflower and groundnut recorded increased crop yield from 24% to 56% and 31% to 48% respectively. In 2013 with improved management practices gross value of increased agricultural production was more than US\$ 75 million with 21-56% increase in crop yields. The detailed strategy for increasing the area coverage as well as impact was worked out through capacity building, awareness raising and timely availability of inputs in the districts. During the season, 38 training courses at district level with 4050 participants, 184 trainings at taluk level (second lowest administrative unit) to train 13,448 trainees and 6,966 village level trainings to train 4,95,700 farmers were conducted. Nearly 2300 field days were organized in 30 districts and 141,541 farmers were exposed to science-led improved technologies to enhance crop productivity on drylands including 39,385 women farmers.

## Conservation Agriculture

ICARDA is helping to promote a flexible conservation agriculture package in North Africa (Algeria, Morocco, Tunisia) and West Asia (Iraq, Jordan and Syria) in collaboration with ACIAR and national partners. Results in West Asia sites showed farmers who adopted zero-tillage and early sowing increased cereal yields by 15-19% and net income by 29%. It has been demonstrated that conservation agriculture with reduced herbicide use shows grain yield increase by 23.9 %. Moreover in the Nile Delta, the conservation agriculture package with faba bean cv. 843 and application of reduced rate (120 cm<sup>3</sup>/475 l/ha) of Glyphosate (Lancer) 60 days after sowing and low seeding rate 75 kg/ha produced higher yield in Dakahlia (5.94 t/ha) while the neighboring farmer got 4.46 t/ha (33.2% increase). However, the grain yield in Sharkia with cv. Misr 3 under conservation agriculture was 3.69 t/ha while neighbor farmer got 3.32 t/ha (11.1% increase). The average increase was 23.9 %. Long-term CA trials in Syria and Iraq show farmer profitability improves by \$ 220. In Iraq, where wheat sells for \$700/ton, higher yield brings in an additional \$175/ha, and optimal seeding saves \$140/ha. Factor in the same savings from reduced plowing, and conservation agriculture improves profitability by \$355. A major constraint to the broad adoption of CA in many countries of NA&WA countries is the lack of seeders suitable and low-cost for small and medium-sized farmers. This has been largely resolved with the development of low-cost seeders made by local workshops in Syria, Jordan, Iraq, Tunisia, Algeria and Morocco. As a result, area under CA is expanding in all NA&WA countries (<http://bookshop.cabi.org/?page=2633&pid=2627&site=191>), (<http://www.icarda.org/tools/conservation-agriculture-yield-lower-cost>).

Conservation agriculture practices are expanding over 39000 ha for nearly 5080 farmers in NA&WA (Jordan, Syria, Tunisia, Morocco, Iraq, Algeria). The key driving force for this out scaling is the conception and production of locally-made low cost zero till seeders in partnership with the private sector. Commercially available seeders are made mostly in wealthier countries with extensive areas of conservation tillage, such as the United States and Brazil. They typically cost \$50,000-60,000 or more, which places them out of reach of smallholders in developing countries. As a part of the research partnerships in Syria and Iraq (2007-2009), ICARDA, local equipment producers and farmers compared conservation with conventional tillage, and developed prototypes of low-cost seeders that can be profitably manufactured and sold for \$2,000-6,000. Smaller models measure 2.3 meters across, larger ones 4 meters. Seeders manufactured locally in Syria cost \$1,500 for 2.3-meter models and \$4,500 for the 4-meter models. Seeder modification cost \$1,250 in Iraq. In Iraq, farmers developed modification kits to adapt local 3.6-meter John Shearer-type seeders for conservation tillage. This farmer-led effort to develop, test, demonstrate and promote modified seeders was a surprise success and a major outcome of the project.

The immediate benefits noted by farmers trying the conservation approach are savings in energy cost and reduced time spend in crop labor. They registered savings of up to 40 liters of fuel per hectare and reductions in labor and seeds expenses. Local manufacturing of no-till drills can also enhance private capital investments to play a major role in adoption of no-till system. Recently developed national strategies for Moroccan agriculture encourage the cooperation of small farmers around an aggregator in a production chain. Here a no-till system can play a major role in gathering farmers around a common interest. With reference to the environment, the improvement of soil fertility, water and energy saving is demonstrated. Atmospheric benefits (less carbon dioxide emissions, dust storms and smoke) are yet to be monitored (<http://www.icarda.org/sites/default/files/conv-agree.pdf>)

### A.3 Financial summary

The total spending of Dryland Systems reached more than US\$ 72 million over the two years covering 2012 inception phase, and 2013 year 1 implementation proper. Out of the US\$ 72 million of expenditures, US\$ 21 million or 29% were supported by Windows 1 and 2 funding. The balance of US\$ 51 million or 71% was covered by Window 3 and bilateral projects that were generated by the participating Centers. The US\$ 72 million total spending as of end 2013 account for 59% of the total approved budget of US\$ 122.27 million over four years beginning from 2012 inception phase until 2015. The Windows 1 and 2 spending increased by 31% to US\$ 11.9 million in 2013, from US\$ 9.1 million in 2012, while Window 3 and bilateral expenses rose 39% from US\$ 21.6 million in 2012 to US\$ 30 million in 2013. The table below shows the budget and actual spending in 2013 alone:

2013 Financial Summary	Planned expenditure 2013 per PIA	Actual expenditures	Variance from PIA budget (in amount)	Variance from PIA budget (in %)
Total Expenditures	US\$ 37,428	US\$ 41,911	US\$ 4,483	12% increase
Window 1+2	13,672	11,911	1,761	13% under-spending
W3 & Bilateral	23,756	30,000	(6,244)	26% increase
Gender Research (estimated)	1,000	2,350	(1,350)	135% increase

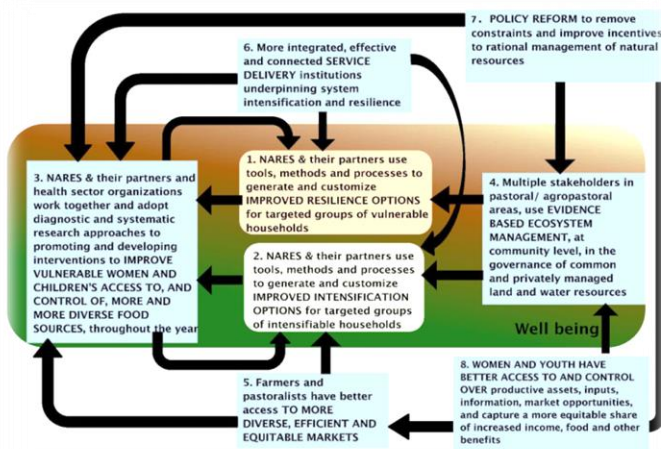
(in '000 USD) This financial information is based on unaudited amounts. The audit is currently on-going.

### B. IMPACT PATHWAY AND INTERMEDIATE DEVELOPMENT OUTCOMES (IDOs)

The program's core documents provide details of [Dryland Systems Impact Pathway and Theory of Change](#), including the gender dimension. The IDOs and their associated targets and indicators are

listed below and described in more detail [here](#).

The baseline data is detailed in the Dryland Systems full proposal. Dryland Systems is based on eight IDOs and embeds its research within development praxis to ensure impact at scale. It is refining generic impact pathways for the eight IDOs to fit all action sites in all five Flagship regions to provide an organizational frame for research. In the [TRIP workshops](#) the many partners completed regional workplans based on IDOs, outputs and outcomes, and has included the cross-cutting themes including gender, youth and biodiversity. Similarly, it will incorporate the use of common programmatic tools, including those for modeling, data-flow,



geo-informatics, and information management and communication. In our Theory of Change, IDOs 1-4 are related to impacts on household wellbeing and the natural resource base. In support, IDOs 5 to 8 are key components of the scaling strategy for each action site that must take into account such variable constraints as low population densities, underdeveloped markets, weak institutions and governance, and poor equity. Although these four IDOs are thus a critical part of the program's success, at this early stage, we are presently focusing on interventions related to wellbeing and resource management rather than those needed to take interventions to scale. Therefore, impact targets are only initially made for IDOs 1-4.

**Note: IDOs 2014.** During the preparation for the Extension Proposal, Dryland Systems partners met to sharpen the focus of the eight IDOs used in 2013, reducing them to six. The purpose of this exercise was to simplify the outcome pathway and explicitly link it to the CGIAR structure for the Phase 2 Call in 2016. The 2014 IDOs are IDO 1: Resilient Livelihoods; IDO 2: Wealth & Well-being; IDO 3: Food Access; IDO 4: Natural Resources Management; IDO 5 Gender Empowerment; IDO 6: Capacity to Innovate.

In Annex 1 "CRP Indicator of progress with targets" the 2013 IDOs are listed in brackets in blue after each entry for "Knowledge, Tools, Data", followed by the new IDOs in red.

## C. PROGRESS ALONG THE IMPACT PATHWAY

### C.1 Narrative of major achievements

#### C 2. Progress towards outputs

*Examples of Flagship outputs, produced in and integrated agro-ecosystems ('systems') approach.*

**C 2.1 Innovation platforms.** An important achievement for Dryland Systems for this reporting period is the creation of 15 innovation platforms (IP), spanning most Flagships and Action Sites. The platforms are put in place through agreements that bring together all partners along the impact pathway needed to link research innovations with benefits at community level. While the overall concept is the same, each platform and Flagship has its own character, shaped by the needs of partners and the specific themes addressed. IP concepts range from official agreements with government agencies that ensure links with community organizations (Central Asia), to an on-going problem-solving dialogue that links researchers, small-scale producers, local authorities and traders – aiming to remove barriers to market access for smallholders (East & Southern Africa). The Dryland Systems platforms bring together international and national researchers, local policy makers and extension and agriculture specialists, farmers' organizations or farmer groups, private sector players such as traders and buyers, NGOs or community based organizations. Here are some examples of the work in progress:

**FP: North Africa & West Asia.** Research teams are set up in 5 sites – Morocco, Tunisia, Nile Delta in Egypt, Jordan-Syria and Karkheh River Basin in Iran involving 50 scientists, 100 from NARS. Three platforms set up in Tunisia, Morocco and Jordan each engaged three communities and in a priority setting process, led by the community. The starting point was an analysis by the group of the constraints, opportunities and challenges faced by each target area, based on characterization data collected during the Inception Phase. Social and cultural aspects are also considered.

Based on their needs priorities are defined by the communities in a two-day dialogue where research teams present a range of technology packages and options for addressing those needs in terms of improving productivity and income. Thus a demand driven approach is followed. The result is a signed agreement between the group that sets out the action plan and shared goals. Communities in the Jordan Karak site, for example, considered a range of options including crop-livestock solutions and improved crop varieties, but requested a package that will help them meet their priority of increased olive production. The package includes irrigation efficiency, the reuse of grey water and increased advice from olive extension experts to boost olive production in this system.

The Nile Delta and Meknes Action Sites decided to focus on Integrated Pest Management for cereals and food legumes. Specific issues being tackled are brome grasses that cause up to 68% decrease in wheat yield; and the management parasitic weeds on faba bean that gives 22-38% yield increase. In one Tunisia site, the action plan and priorities was ratified by a community council composed of three women, three men and three young people. Across the platforms in the Flagship region, some 20 technologies/ practices are being researched in four agro-ecosystems (pastoral, agro-pastoral, rainfed, irrigated) – over 38,088ha, involving 5263 farmers. The Flagship team estimates that some 30% of technologies explicitly target women farmers.

**FP: Central Asia.** In Central Asia, two important benefits produced by the new innovation platforms in their first year were improved coordination between local agencies and communities to explore and agree on integrated solutions by the team of international scientific and NARES partners in Dryland Systems who were previously working bilaterally with communities and line agencies in the target area. The Dryland Systems project team reports that the communities have responded very positively to the packages of options proposed by the Dryland Systems partners to partner communities. In workshops and meetings with farmers groups, the researchers and development partners presented and discussed technologies that were the chosen by farmers and extension specialists in the action sites based on their specific needs and constraints. In addition to presentations of new technologies, interactions between farmer groups and development partners on socio-economic issues faced by

communities and problems such as land degradation gave the groups clues on where to focus new research efforts for the highest benefits to rural communities. Interactions between research teams and communities took the form of dialogues and travelling seminars in target villages, and field surveys done by local NGOs, the helped focus the interactions. Approaches presented include a mix of higher yielding crop varieties that are disease and pest resistant, diversified cropping options, pest management, irrigation efficiency approaches and benefits of introducing trees in the farming mix. Farmers and local associations have responded very positively to these integrated options as their needs are agro-ecosystem based, which had not been presented as a 'systems package' before. Another example that explains the benefits of the integrated approach is the winter wheat trials held in an Uzbek region that had no connection to the target community. Last year's Innovation Platform dialogue has made a new link between this trial and surrounding communities and brought together various government line agencies with the international partners, thus fostering integration of R4D. The project team reports that more work is needed to ensure optimal functioning of the IPs, but this a good start – many organizations are working together for the first time –and focusing their collective expertise on the needs of farming communities.

The Central Asian Innovation Platforms are centered on productivity improvements in the Aral Sea region (four community sites) – two communities each in Uzbekistan, Turkmenistan and Tajikistan, and the Fergana Valley (four community sites) – two villages each in Uzbekistan, Kyrgyzstan and Tajikistan. Each Platform's Action Plan is an agreement endorsed by local and regional authorities with the Dryland Systems and involving national research and extension partners, NGOs, universities, water user associations, farmers' organizations and local farmers.

**FP: East & Southern Africa.** The East & Southern Africa Innovation platforms take the form of on-going dialogue between all stakeholders in the research-to-market value-chain – to better understand the constraints to improved livelihoods for the partner communities and focus technologies, practices and policies on delivering results directly targeting identified needs. Each platform is organized by value chain – crop-livestock integration, beef cattle marketing, dairy cattle, goats, and maize or groundnut production. The priority for 2013 was the development and building of value chain platforms. In 2014 the Flagship team will focus on encouraging integration across the value chains. The overall goal of these innovation platforms is to achieve effective crop-livestock integration for all participating communities and better understand how they can work to benefit communities at a much wider scale. Each value chain platform has a participatory process set up by members to meet its special needs. Some meet monthly, some periodically, depending on the issue to be addressed in moving their action plans forward. The goat value chain, for example, is more than one year old, with groundnut the most recently established (November 2013). Most value chains have a cycle of frequent follow-on meetings aimed at continuous problem identification and solving. Topics being addressed include: the deaths of kid goats in large numbers; difficult access to water in dry areas or chronic dry-season feed shortages; a lack of useful information needed to move products swiftly to market and too much paperwork required for commercial activities. A recurring constraint and concern voiced across the platforms was difficult access to markets, a key issue to be solved if smallholders are to gain increased income from future productivity increases. The ground nut group is addressing the fact that it does not have effective market access, linked to only one buyer not offering good prices. The next step is integrating the value chains where they intersect in common livelihoods. Some of the platform's follow-on meetings have become mini-market places. Where former meetings of 25-30 people had been mostly producers and traders or buyers, the scene is now attended by several buyers who engage in auctioneering with farmers, bringing them better prices and services to move their goods to market. Communication and training materials were prepared on forage conservation, crop establishment, innovation platforms, data collection. For the design of these platforms, the team has distilled lessons from the ImGoats project on Innovation Platforms, from past NGO partnerships to improve livestock value chains in Mozambique and in India. Such cross-Flagship exchange and learning will be particularly encouraged as the CRP moves forward.



**FP: South Asia.** These innovation platforms were created in three clusters: West Rajasthan, Anantapur and Bijapur. The platform approach uses the ‘innovative scaling-up model’, that applies learning platforms in several projects for ‘out-scaling and impact of technologies on smallholder livelihoods’ (based on 2012/2013 legacy projects). The promotion of improved management practices produced a gross value of increased agricultural production of more than US\$ 72 million, with 22-52% increase in crop yields and economic returns benefit cost ratio for the farmers was 2.1 to 14.6:1, (with full inputs costing added by farmers). For the next phase of Dryland Systems’ work, some 15 action villages have been identified. They present diverse dryland production systems and the South Asia team with partners are identifying and documenting specific technologies, on which the program will focus to propose and evaluate options – looking at both high-level outcomes of building resilience and intensification.

A key achievement reported is the review of a range of technologies selected by groups in the West Rajasthan, Anantapur-Kurnool and Bijapur Action Sites. A series of constraints to the platform’s long-term development were highlighted, including: lack of local language communication, which is a barrier to bringing farmers into the platform; and the frequent change of officials at district and lower administrative units, which causes discontinuity. In Rajasthan a range of improved varieties is being tested on 80ha in Dryland Systems action villages. Sorghum, chickpea, cluster bean, moong bean, moth bean, and millet were identified and demonstrated. These new varieties showed a significantly higher yield than current seed used by farmers. The next step is to study overall productivity and profitability studying the entire system, including livestock and NRM interactions.

### **C. 2. 2 Value Chain:**

#### **West Africa, Sahel and Dryland Savannas**

Three wheat value chain platforms were set up in Kano State, Nigeria in 2013 that bring together farmers, NGOs, input dealers, credit institutions, traders, processors, extension, researchers and policy makers (parliamentarians and Government officials).

#### **Improved wheat varieties: a solution to [Nigeria’s import dependence](#)**

In 2013 the activities of the Kano platform and value chain linked to the on-going SARD-SC Wheat project led by CGIAR centers and funded by the African Development Bank, for a combined technology transfer and [beginning of a policy impact](#) that improved food security for the Nigerian government. Nigeria currently imports two million tons of wheat, spending a staggering \$4 billion on the commodity every year – a figure expected to reach \$15 billion by 2020 when Nigerians are predicted to consume over 10 million metric tons of imported wheat to satisfy their growing appetite for non-traditional foods like pasta, noodles, and bread.

Faced with a growing demand for wheat and wheat products, the continuation of this import-based approach will have dire consequences for Nigerian food security if it is exposed to the fluctuations of global commodity markets and increased susceptibility to sudden food price hikes – particularly for the poor who spend a disproportionate amount of income to feed their families. Through the Kano value chain platform, linked to the SARD-SC project, Nigerian officials were put in contact with their Sudanese counterparts, have succeeded in producing wheat using CGIAR varieties capable of production in temperatures up to 50C. The impressive performance of improved varieties of high-yielding, heat-tolerant wheat has convinced Nigerian decision makers that a viable solution to their country’s growing dependence on wheat imports is domestic production – a policy shift that will protect Nigerians from the shifts in global commodity markets, and strengthen national food security. This transfer of Sudanese technology can boost Nigeria’s wheat yields from 1-2 tons/ha to 5-6 tons, improving local supply and reducing import costs. However, rotational crops may be different, requiring deeper study beyond just wheat to identify overall stable production systems including several crops and animals.

The Kano value chain platform played a key role in demonstrating the potential of these new wheat varieties and of building capacity and trust between policy makers, local authorities and farmers – showing how the approach can be rolled-out at a larger scale. Through the platform, some 58 tons of improved seed distributed to 1600 farmers for seed multiplication; discussions and demonstrations

have helped convince Nigerian policy makers to expand national wheat production will from 70,000 to 200,000Ha over the coming five years; land expansion plans will generate an estimated 900,000 t of wheat – enough to cut the cost of Nigeria’s import burden by 40-45%. This case is a good example of the potential of the Dryland Systems Innovation Platforms to facilitate learning and technology transfer between countries and at national level to test new technologies and engage in national dialogue to plan out-scaling. What is missing is integrating wheat production into existing agro-ecologies, where wheat was not even grown in the past, so stable systems can be identified and promoted, and not just better wheat varieties.

### **Small ruminants – improving productivity and flock robustness and performance**

#### ***New processing approach for dairy products brings better market access for rural women.***

The demand for small ruminant dairy products in West Asia is increasing and [small scale milk processing](#) is an important part of the livelihoods of sheep and goat keeping households. This is the case of Jordan where there is a strong demand for Jameed (a hard, dry, skimmed yogurt) that is produced using mainly sheep milk. Jameed is typically made by women under labor-intensive small-scale and home processes. The research team identified a simpler process that has the potential to bring more income to women and rural households. The processing method was tested first on controlled conditions, and then in 2013 with a number of dairy processing cooperatives in El-Karak region. One of these was the Bukaeen family cooperative in Ader, Jordan. A testing phase brought together women producers from the community with the cooperative’s technicians to fine-tune the process and method, opening the door for larger scale production. The new method saves water and energy, reduces labor, without affecting the quality of Jameed. The method developed through this process leads to at least 60% savings on energy, water and labor costs while improving the quality of Jameed produced. The improvement in the quality of Jameed is also expected to increase revenue at least by 5%. The combined effect of the cost savings and additional revenue is an increase in net margins (profit) of at least 20%. This method could be implemented in other regions where they produce similar traditional products like Curud in Central Asia. In addition, specific product branding can be introduced so that the Jameed from a specific region gains fame as uniquely outstanding, allowing it to fetch higher prices and dedicated clientele.

In West Asia, milk production from sheep is an important product yield for home consumption and surplus is often sold in nearby niche markets. For this product to be more competitive, increases in yield are essential, and this can be substantially and irreversibly achieved through genetic [improvement of sheep flocks](#). Most countries have public research or pilot stations where genetic improvement is done in ‘closed nuclei’ flocks. Disseminating improved rams out of these flocks will not meet the farmers’ demand and, technically, has a very limited impact in terms of achieving improved productivity of animal products as quickly as desired. In Jordan, artificial insemination (AI) using fresh cooled semen was introduced in five villages in the Karak governorate. Some 400 Awassi ewes belonging to 20 farmers were inseminated using semen from milk-improved rams. The conception rate using AI exceeded 40%, which is considered highly satisfactory for adoption and further extension of the technique. AI has also proved to be an optimal reproductive tool for the genetic improvement of sheep flocks in Tunisia and Morocco. These experiences therefore build on extensive experience of scientists in support of local national research programs over several years and from other Target Regions. It is a proven technology that offers real potential to improve flock robustness and productivity in community breeding programs in eastern Africa as a part of Dryland Systems.

### **Water-saving practices demonstrate increased yields with less water**

Water saving irrigation techniques developed and demonstrated, at a large scale in past projects by several partners, show a real potential for increased productivity and wider application in the NA&WA Action sites. Some examples: sustainable irrigation techniques demonstrated show how olive production saves 30-80% of water for similar yields; for wheat, highest yields increased by 1000 kg/ha. Raised-bed farming demonstrations’ show 24% water saving, 34% increase in wheat yield, 78% improvement in water use efficiency – Egypt. Learning alliances with 76 male and 34 female stakeholders looked at challenges to production and marketing of their crops - Egypt, Morocco.

**Morocco.** [Olives](#) are a major cash crop and positive livelihood factor in many WANA locations, and can bring potential income to other drylands locations, as this robust crop can survive where others will not. But current methods use unsustainable amounts of water, and have considerable waste or overuse of this valuable resource. Current projects for sustainable production are using new approaches to increase production using less water. Drip irrigation dramatically reduces the amount of water used for irrigation. One project, started in 2010, and now feeding into Dryland Systems, has been working with the national program in Morocco to identify and disseminate best practices for drip irrigation of olive orchards, particularly the use of deficit irrigation. It is demonstrating dramatic benefits of drip irrigation to farmers and policy makers, and as a clear policy option for natural resource planning. These trials test the efficiency of water use under traditional irrigation practices and assess the potential of using drip irrigation to meet 70-100 percent of the water needs of olive trees. At INRA's Saada experiment station, drip-irrigated trees started producing olives only two years after planting, while the flood-irrigated trees didn't produce olives until the third season. This is important to farmers—drip-irrigated orchards start producing an income a full year earlier than traditionally managed orchards. This should encourage farmers to install drip-irrigation systems.

The project demonstrates an integrated production package combining improved soil cultivation to keep the land free of weeds, with pest and disease control, 'fertigation' [applying fertilizer through the irrigation water], and pruning. The project team says that the packages result in early maturity, rapid growth of the young trees, and a reduction of 70 percent in the amount of water used for irrigation compared with the farmers' traditional practices. Data shows that drip irrigation meets 100 percent of trees' needs with 1900 m<sup>3</sup> of irrigation water, compared with 6750 m<sup>3</sup> for flood irrigation. Deficit irrigation (70 percent of trees' needs) required even less water—only 1330 m<sup>3</sup>. And on top of this, deficit irrigation produces higher-quality oil. And for export production, yield is only one factor. Product taste is crucial to meeting export market requirements. For deficit-produced oil, taste-panel tests show that the oil that is tastier and has better storage properties than either fully irrigated or flood-irrigated trees, according to Dr. Abderaouf El Antari of INRA's food testing laboratories.

#### **Supplemental irrigation boosts olive yields and farmer income in Syria**

In Syria, which cultivates olives on some 530,000ha – more than 10 percent of the country's cultivated area – the crop provides livelihoods for more than 100,000 families. Sustaining production in a situation of increased water scarcity and unpredictable rainfall is the major challenge to this national industry. The program for Development and Dissemination of Sustainable Irrigation Management in Olive Growing is a long-term partnership between the Common Fund for Commodities the OPEC Fund for International Development (OFID), and the Syrian General Commission for Scientific Agricultural Research (GCSAR) and CGIAR – which feeds into the work on the Drylands Systems NAWA innovation platform. This project evaluates how to best use supplemental irrigation to raise and stabilize farmers' olive yields and incomes. It demonstrates the benefits of drip irrigation—applying water just around the base of the trees—both for raising yields and minimizing the amount of water used

Since 2011, the project has been working in two pilot sites and tests three water regimes: rainfed, rainfall plus 50 percent extra as drip irrigation, and rainfall plus 100 percent extra. This is combined with a package of improved management practices, including fertigation, cultivation practices to reduce evaporation and improved weed control. In these trials, the impact of supplemental irrigation on olive yields has been dramatic. In 2012, supplemental irrigation at 50 percent ET<sub>c</sub> (deficit irrigation) increased olive yield by 125 percent on the GCSAR plot (9.8 t/ha, compared with 4.4 t/ha for the rainfed treatment), and by 90 percent on the farmer-managed plot (7.4 t/ha, compared with 3.9 t/ha). The 100 percent ET<sub>c</sub> treatment (full irrigation) increased yields further, to 11.1 t/ha (154 percent) on the GCSAR plot and 9.1 t/ha (133 percent) on the farmer-managed plot. Oil content was highest in fruit from trees that received deficit irrigation. Despite unrest in the country, GCSAR has held a number of extension events to promote awareness of the benefits of supplemental irrigation and to disseminate its findings. A farmers' field day at the Dara'a station attracted 30 farmers, keen to learn how to raise their yields and incomes. Two one-week training courses in irrigation water management were each attended by 15 extension agents. These were followed up by a one-day seminar on olive irrigation and fertigation, which was attended by 22 agricultural engineers from extension units and the department of agriculture.

### **High-value medicinal plants.**

Cultivation of medicinal plants by women in their home gardens at Erak-Karak, Jordan, shows the potential for improving income and reducing pressure on harvesting and uprooting some species from their natural habitats. A project to encourage medicinal plant cultivation in the Erak-Karak communities in the Jordan Action Site aims to bring multiple benefits to the community – reduced land degradation and biodiversity protection, women’s empowerment and increased household income. The harvesting of wild thyme for sale in local markets is a long-time practice in this region. As this activity has intensified over the years, the practice of uprooting wilds plants that thrive on public land is reducing the population of these plants and increasing the degradation of the marginal soils on which they grow. In conjunction with an ongoing 15-year biodiversity study of the region by the Jordan’s NCARE research and extension agency and other partners, this team has started working with 2 pilot villages to encourage the creation of home gardens for cultivating saffron and thyme. These are two plants that can have demand in local markets, and if done productively, can bring significant income to individual households, and even have commercial export potential.

Thyme is a perennial crop which, if well-tended, will generate produce and income the year round. The pilot home gardens started this past year in Karak-Erak cultivating these garden plots of up to 200M2 per household are also an advantage for local women as they can manage and harvest the medicinal plans close to home, rather than at the farming plots that are several kilometers away. The project is linked to biodiversity awareness as research teams explain the benefits of maintaining the world plants in healthy condition to reduce and reverse land degradation. This project is currently at its discovery phase, with small-scale testing of the approach in several locations. The research team will compile results in late 2014 and expands to broader piloting with more communities in the area. But will the scaling of medicinal plant production by many communities not reduce prices? The project team says that there is a wealth of herbal, medicinal and aromatic plant types that are in demand and that a diverse planting strategy is the next step. Based on past experience in expanding medicinal plants, with input from long-standing legacy projects, in Afghanistan, Morocco and Tunisia, the team is confident that the Karak-Erak model has good potential for communities in this area, and beyond.

### **C 2.3 Approaches, methods and Analyses**

#### **Treesilience: An assessment of the resilience provided by trees in the drylands of Eastern Africa**

In Africa, practitioners and policy makers now have more up-to-date information on the resilience enhancing potential of trees in drylands, thanks to the Treesilience study and its range of new knowledge products. The Treesilience initiative was created to address a knowledge gap between the considerable investment in African drylands over the past two decades and the comparatively small effort put into development to increase people's resilience and reduce their dependency on aid. While trees and agro-forestry significantly support dryland livelihoods there is scattered knowledge and limited insight in the role that forests and trees can play in achieving more resilient drylands development.

To improve the quality of information about the benefits that trees and forests bring to drylands resilience, the Treesilience team put in place a process to assess existing knowledge and best practice and synthesize it into a package of practical information for parliamentarians, government officials, NGOs, CSOs, farmers' and pastoralists' associations and others. The knowledge package is designed to raise awareness among these decision makers of the benefits that trees and well managed forests and agro-forestry systems and how they can strengthen people's resilience to the shocks they encounter in drylands.

Following a desk study, the project engaged in a consultation involving 82 experts, including researchers, development partners extension specialists and members of civil society - from across East Africa and around the world - and held a write-shop to generate knowledge products for tree-based options that enhance resilience in drylands. Participants in the consultation and write shop were carefully selected to ensure inclusion of expertise from a wide range of stakeholders and policy makers.



The review and synthesis included looked at a range of resources, around which the knowledge products were developed, including: drylands in East Africa; distribution and ecology of trees in east African drylands; benefits from trees in forest and agroforestry systems; livelihoods, vulnerability, risk management and resilience; review of existing tree-based options to increase resilience; review, by country, of the East African region of the options have the best potential to be scaled out; knowledge gap analysis and recommendations for action; discussion of the *Tree Handbook*, tailored for drylands and the *Agroforestry domestication primer*. The evidence produced by Treesilience evidence is synthesized in the project's [research study](#) and in a range of [specific knowledge policy and training products](#)

## **C 2.4 Publications**

*Selection of papers and publications reported by partners.* Journal Nutrient Cycling in Agro-ecosystems - nutrient management in livestock systems in West Africa Sahel (submitted); Report - integrated cereal-livestock-tree system in the Sahel; report - community-based climate-smart agriculture (West African, Sahel & Dry Savannas).

Two papers on modeling of index-insurance assessment, one published one under review; two manuscripts on targeting and impact assessment; one article accepted by Society and Natural Resources - a framework for conceptualizing and measuring resilience in dryland systems; preparation of a paper that rethinks the divide between 'vulnerable areas and those with potential for 'sustainable intensification'; one review document on "*Agricultural Water Management Interventions for Chinyanja Triangle*"; four conference papers on household decisions on use of drylands resources on sustainable intensification of agriculture; several publications, policy briefs and media materials have been produced and are targeted to both policymakers and local communities (East & Southern Africa).

## **C.3 Progress towards the achievement of research outcomes and IDOs**

*Examples of Flagship outcomes, produced in and integrated agro-ecosystems ('systems') approach.*

### **IDO 1 – Resilient Livelihoods**

#### **On-farm conservation of landraces of major field crops: sharing knowledge and expertise in Yemen, Palestine and Tunisia**

In Yemen, the six-year *Rainfed Agriculture and Livestock* project supported by the World Bank, offers lessons and practical examples for how communities and countries can organize on-farm conservation of drylands agro-biodiversity and improve seed security through informal production of landraces. The knowledge and expertise of this work feeds into the Dryland Systems North Africa & West Asia Innovation Platform. The vehicle for changing people's practice and thinking is district level Seed Producer Groups (SGP) and Seed Growers Association (SGA) at the governorate level, which were put in place through this project. The emphasis is on conserving the most popular landraces of major crops – barley, faba bean, fenugreek, lentil, maize, millet, sesame, sorghum and wheat – in five governorates (Al-Hodeidah, Al-Mahweit, Hajja, Lahj, Sanaa). By 2013, some 72 producer groups and five growers' associations were established, with a total of 470 members. The project demonstrated the relevance of low-cost technologies – such as participatory improvement of landraces, seed cleaning and treatment – which make possible yield gains of more than 30% over the original crop populations. A total of 830 tons of seeds was produced for distribution to farmers in the 72 communities participating and beyond.

Project experts provided mentoring to local partners for the development of a seed production and supply strategy; a seed business plan was drafted with each growers' association. Incentives in the form of small machinery for seed cleaning and treatment, threshers, etc. were provided to both groups to encourage the communities to take charge and sustain their activities. The project trained more than 1000 people including 230 staff of the collaborating institutions who can extend training to others in the future. More than 670 people were trained on skills such as NGO management, production of quality seeds, business plan development and on-farm land race conservation.

As a part of this work, national genebank holdings were enriched with some 2000 accessions of landraces collected from across Yemen. Some 600 of these were fingerprinted using AFLP molecular markers. Additionally, most of these genetic resources were also sent to ICARDA for *ex situ* conservation and safety duplication and are available as sources of valuable traits to researchers in the CGIAR Research Programs on wheat, maize, food legumes, dryland cereals, forage and livestock, and to other interested parties. An important outcome of this effort are changes in thinking and practice among a number of key senior people in the Yemeni Ministry of Agriculture and Irrigations, the Social Fund for Development, the Agricultural Research and Extension Authority, the General Seed Multiplication Corporation, and the Universities of Sanaa and Aden. The project documents their increased awareness of the importance of conserving dryland agrobiodiversity and their interest in expanding the approach to other regions of the country. A similar approach, inspired by this experience, was put in place in Palestine, where three Seed Producers Groups were created to promote landraces of durum wheat, barley and watermelon. In Tunisia, related work has stimulated the promotion of conservation practices for landraces of durum wheat with 30 farmers in ten governorates, through introduction of participatory improvement, seed increase and organic farming.

#### **IDO 4 – Natural Resources Management**

##### **Pastoralists-policy maker dialogue improves equitable management of East African rangelands**

African drylands are fast approaching a tipping point of ‘range enclosure’, with loss of mobility, a threat to the traditional livelihoods of millions of pastoralists, and the related loss of ecosystem services. The shift to an enclosed (or conversely back to an open) state is driven by the interplay of changing policies on land tenure and natural resource management. The effects of these policies come together at the household and community system, where trade-off decisions and land-use choices are negotiated. Putting in place new rangeland policies involves a complex of environmental and social sustainability issues, that pastoralists and their policy counterparts haven been ill-equipped to address together.

To address this problem, in East Africa, [the BEST initiative](#) has built new links between policy makers, agricultural line agencies and pastoralists. As a result, decision makers in Ethiopia, Tanzania and [Kenya](#) now better appreciate the value pastoralists place on their livelihood choices and better understand the decisions they make. On their side, pastoralists are now better able to articulate their needs and needed trade-offs, in negotiations with policy makers and entrepreneurs.

BEST asks the question: *How do different policy and economic drivers shape household decisions on land use choices, and with what ecosystem services and poverty implications?* The project team combines science and cross-border comparative analysis with engagement to develop a better understanding of household decisions over land use in Ethiopia, Kenya and Tanzania. These include: analysis of biophysical and socio-ecological ecosystems, advanced modeling, expertise in communication and engagement, policymaker and practitioner networks. The BEST partnership manages major data sets, used to evaluate policy scenarios, gain insight into ecosystem services and the poverty implications of different land tenure and natural resources management policies, and to ensure an on-going dialogue so that findings and tools are embedded into national policy making and practice. The knowledge and expertise gained by the BEST partners provides important experience and learning that is being used to develop rangeland approaches in other countries on the East & Southern Africa Innovation Platform, and during the Extension Phase will be discussed with the other Flagship teams. <http://www.espa.ac.uk/projects/ne-i003673-1>

#### **IDO 8 – Gender Empowerment**

##### **Value chains and business models link village sheep and goat producers to world markets**

Building on long-term expertise in sheep and goat research and socio-economics in Central Asia, two research-for-development partnerships have succeeded in linking rural communities with world markets for high-value wool and yarn. The result is increased income for a number of villages, households – but especially for groups of rural women, and business models that can be applied to many drylands communities. This knowledge and know-how is now integrated into the Central Asia Innovation Platform, with the goal of replicating this income-generating model on a large scale in the region and to other Flagships.

**Kyrgyzstan.** Women living in the harsh environment of the Naryn region in Kyrgyzstan are known for their felting tradition, producing felt rugs and carpets called ‘shyrdaks.’ These products enjoy strong local demand but reap little income as domestic markets are limited. With long and severe winters, poverty and unemployment levels are high and the villagers rely mostly on production of livestock (sheep, goats, horses and cattle) for their livelihoods. Dryland Systems small ruminants’ scientists and socio-economists worked with 70 women artisans from five pilot villages in the Naryn region to develop a value chain for a new range of felt products – pillows, chair mats, scarves, slippers – that would have international market appeal. These products successfully entered regional markets, and were test-marketed in the US and accessed markets in Belgium, Germany, Hungary and the Netherlands. [Learning from a value chain](#) assessment, the project team focused on five priority areas: improved quality of raw materials needed for higher-value products; mechanizing felting for improved efficiency; training women groups on wool processing; working with professional designers to develop a range of new demand-driven products; and creating institutional support for the women’s ventures. These strategies shaped a sustainable business model, making possible replication of the approach beyond pilot villages.

The project generated \$50,000 in income in its first four years. In 2013, women’s income in the first nine months had exceeded that 2012 figure. The new skills have brought considerable recognition, along with a boost in confidence for the participating women. One woman won the UNESCO Award of Excellence for Handicraft Products and an opportunity to present her products at an international craft fair in Kuwait. Others showcased products at the UNESCO boutique during the prestigious Santa Fe International Folk Art Market. More significantly, these women are now eager to invest their own money in attending craft fairs as they realize their importance for growing their handicraft business and preserving their felting tradition.

**Tajikistan.** A related initiative, managed by Dryland Systems, funded by IFAD and put in to action with a local and international NGO, created a value chain for [high value Mohair fiber](#) – integrating goat and sheep rearing with processing and marketing of high-quality angora wool. This partnership started by applying improved breeding and husbandry practices to increase the fiber production of goats and sheep; studied processing techniques, engaged in training; and worked with experts to develop a sustainable export market chain. The socio-economic impacts of the initiative on women were also studied, including linkages between pilot communities in Tajikistan and Kyrgyzstan and the global community in the sector. Male farmers learned how to create a breeding program for improved fiber quality and yield in their flocks, and about improved feeding and healthcare. The communities’ women enhanced their skills in spinning, weaving, knitting and felting to produce luxury yarn, woven blankets, knitted and felt products with designs appealing for export markets.

A range of successes were registered, the Tajik mohair yarn, marketed as “*Mohair magic*” is sold at a wholesale price of \$140 per kilo – the same price as Australian mohair. Selling kid Mohair to processor groups (present annual demand is 800 kg) has increased the income of 20 goat keepers by \$125 each due to the increased price paid by women processors. The local demand for combed cashmere from the women spinners in Badakhshan, has helped goat keepers, also mainly women, earn \$21 per kilo combed *cashgora* fiber, up from the \$2-3 per kilo of sheared fiber, previously sold. The Altai type goats resulting from the breeding program produce white fiber and 15% higher yields.

#### **Dairy goat project leaves a lasting legacy for Afghanistan’s poorest women In Afghanistan**

The highly successful dairy goat project brings benefits in nutrition, incomes and improved social status for an ever-growing number of [women in Afghan villages](#). The impacts in summary: nearly 204 new women beneficiaries of a ‘pass on the gift’ scheme received a total of 389 hardy native Gujry breeds; 1578 goats have now been distributed to 7067 women; the value of investment increased six-fold to an estimated present value of \$1.11 million; over 1000 women have been trained on goat management and hygienic milk production; 15 to 30% improvement in milk production has been achieved; at the current expansion rate, the project team estimates gross monetary benefits to reach \$91,250-182,435 by 2018. The project team is working with village elders and the Afghan government to institutionalize the ‘pass the gift practice’ for sustained benefits.

### C. 4 Progress towards impact

While it is early to speak of impacts and major outcomes, the program has produced some solid achievements in its first 8 months of operation. In other sections, this report has comments on the complexity of putting in place a systems approach – operationally, in terms of the change in thinking needed by all stakeholder involved and, and in the quality of partnerships needed to sustain the effort. The program’s major high-level achievements for 2013 – going toward impact – are the building of a foundation on which long-term systems research is sustained: (1) operationalizing of 5 Flagships and the creation 15 innovation platforms, cemented with partnership agreements and professional structures, (2) more than 100 assessment and analysis activities – including benchmarking, site characterization, modeling, socio-economic, biophysical or natural resources surveys and engaging large groups of stakeholders. A number of successes in farming productivity and natural resources management by Dryland Systems partners are inputs to the program and, together, will be the driver of future impacts. These include strengthening multi-crop/forage seed multiplication systems, increased yields from cold, drought and heat tolerant, and/or disease-resistant crops within sustainable and synergistic rotations that help smallholders improve and stabilize income and fight climate change; the added value of crop and tree diversification or crop-livestock systems for resilience and increased income; water saving and productivity enhancing natural resource management practices. Building a systems-focused global drylands research program is a daunting, though promising, challenge and will be a ‘first’ such program at a global scale. It will also create a step change in impact potential for agricultural research for development. Please see the outcomes section above for more detail.

### D. GENDER RESEARCH ACHIEVEMENTS (1 PAGE)

#### Gender Outcome 1: Systematic Use and Increased Awareness about the Importance of Gender Analysis

Given the DS CRP Gender Strategy’s commitment to reducing gender inequalities, particularly by identifying 1- the key factors that lead to inequalities and 2- subsequently the key interventions with greater impact on achieving all 8 IDOs, a sustained focus is placed on collecting gender-segregated data.

#### Flagship Outputs Related to Gender Analysis

Flagship	Outputs
West African Sahel and Dryland Savannas	Gender Analysis of potato production, marketing, and utilization in benchmark sites for DS in Ghana <sup>ii</sup>
North Africa and West Asia	-Diagnosis of the prospects of a national initiative (Morocco Green Plan) on women’s livelihoods in poor rural communities <sup>iii</sup> -Gender analysis of strategic value chains constraints and opportunities in Morocco <sup>iv</sup> -Gender analysis and documentation of key knowledge and practices leading to climate change adaptation in a community in the Badia region of Jordan <sup>v</sup> -Gender analysis of farmers’ perceptions on water policies in Jordan <sup>vi</sup>
East and Southern Africa	- <a href="#">Gender segregated analysis</a> of water technologies adoption in Kenya <sup>2</sup> -Project staff in Zimbabwe were trained in gender analysis
Central Asia	-Women-related enhanced livelihood options are tested and identified in Tajikistan, Kyrgyzstan, and Iran <sup>3</sup> and are capitalized on for DS activities. N/A
South Asia	Household and agro-biodiversity surveys (1200) were conducted in Rajasthan to capture sex- disaggregated household and decision-making data for identified plants and animals to pave the way for realizing and understanding women’s empowerment. In addition, a parallel detailed study on gendered roles in agricultural production was conducted.

<sup>3</sup> Please refer to <http://www.icarda.org/creating-opportunities-vulnerable-women> for more information.



**Gender Outcome 2: Gender-Responsive Interventions (relevant to all IDOs, outputs reported below are especially significant for IDOs 2, 3, 4 and 8)**

The outputs reported below set the stage for promising interventions (some of which are validated) to achieve gender-responsive<sup>vii</sup> and transformative<sup>viii</sup> interventions.

**Outputs wit high potential for useful interventions**

Flagship	Outputs
West African Sahel and Dryland Savannas	<ul style="list-style-type: none"> <li>-In Ghana, discussions with chiefs and elders were initiated to raise awareness and address tenure insecurities for women</li> <li>-Both men and women participated in decision-making related to planning and farm management at benchmark sites</li> <li>-In Mali women and youth constituted at least 20% of the innovation platforms and received capacity development to attain employment, establish food banks using species, such as <i>Adansonia digitata</i> and <i>Moringa oleifera</i>, and receive training in value addition</li> <li>- In Mali 180 women farmers are interviewed on dietary diversity they use for their children of 0 to 59 months</li> </ul>
North Africa and West Asia	<ul style="list-style-type: none"> <li>-Comprehensive literature review on gender-specific and youth empowerment strategies and initial diagnostic fieldwork in the Delta Region of Egypt<sup>ix</sup></li> <li>-Women empowerment opportunities validated through the analysis of INDH (National Initiative for Human Development) activities in Morocco<sup>x</sup></li> <li>-A women dairy processing training module was developed using local knowledge, analysis of technical and marketing constraints, reduced water and energy requirements, and most importantly less labor. 19 women farmers from five villages in the Karak governorate of Jordan were trained thereby increasing their income</li> <li>-Three women-based CBOs received entrepreneurial skills to initiate and manage small businesses reducing dependence on on-farm income and thereby alleviating pressure on a fragile eco-system</li> </ul>
East and Southern Africa	<ul style="list-style-type: none"> <li>-In Zimbabwe 179 female farmers were trained on dry season feeding strategies, fodder conservation, use of equipment in Conservation Agriculture, and chemical use</li> <li>-ICRAF trained 17 women researchers in peer review approaches</li> </ul>
Central Asia	<ul style="list-style-type: none"> <li>-The Interdisciplinary Research Team (IRT) discussed and agreed on means to incorporate gender in research activities including tools and methods; and on catalyzing change agents to bring about more gender-equitable attitudes and behaviors among all the stakeholders</li> </ul>
South Asia	<ul style="list-style-type: none"> <li>Identified gender-segregated innovative opportunities to use “minor” species in the system to generate additional and complementary benefits in the action sites of Rajasthan</li> </ul>

The DS CRP realizes that capacity building and outreach is a crucial aspect for out scaling the use of gender analysis as well as gender-responsive and gender-transformative interventions that are identified in the DS gender strategy. An ongoing study is analyzing the capacity building needs of CGIAR Scientists involved in the DS CRP, NARS counterparts, as well as relevant organizations (NGOs (both local and transnational), government agencies (local in actions sites and national)) for out scaling purposes.

## E. PARTNERSHIP BUILDING ACHIEVEMENTS

*Selected examples, please see exhaustive partners list in Annex Table 1.*

### **Partnership with international centers**

ICARDA in its role as lead center is engaged with ten CG partners. These are Bioversity International; International Center for Tropical Agriculture (CIAT); International Potato Center (CIP); International Center for Agricultural Research in the Dry Areas (ICARDA, the Lead Center); International Crops Research Institute for the Semi-Arid Tropics (ICRISAT); International Livestock Research Institute (ILRI); International Water Management Institute (IWMI); World Agroforestry Centre (ICRAF) ; WorldFish Center; Sub-Saharan Africa Challenge Program (SSA CP).

### **Partnership with development actors and research institutions**

- **West African Sahel and Dry Savannas** (IER, INERA, INRAN, CRI/CSIR), National Universities (UPR/IRSP, University of Ouagadougou, University of Niamey, University of Kumasi)
- **North Africa & West Asia:** Institut National de Recherche Agronomique, Morocco (INRA Morocco), Institut Agronomique et Vétérinaire Hassan II (IAV Hassan II Morocco), Ecole Nationale d'Agriculture de Meknès (ENA Meknes, Morocco). Institut des Régions Arides, Medenine Tunisia (IRA Tunisia), Institut National de la Recherche Agronomique de Tunisie (INRA Tunisia), Institut National de Recherches en Génie Rural, Eaux et Forêts (INGREF, Tunisia) Agricultural Research Center (ARC Egypt), The National Center for Agricultural Research and Extension (NCARE, Jordan), Agricultural Research, Education and Extension Organization (AREEO, Iran).
- **East & Southern Africa** national centers are: Total Land Care, Institute of Agricultural Research in Mozambique (IIAM) and Zambian Agricultural Research Institute (ZARI), Southern Africa Development Community (SADC) and Agricultural Research Council (ARC).
- **Central Asia:** Khorezm Rural Advisory Support Service (KRASS), Scientific-Information Centre of the Interstate Coordination Water Commission (SIC-ICWC), ) Institute of Farming of Tajik Academy of Agricultural Sciences, Kashkadarya Research Institute of Breeding and Seed Production of Cereal Crops, Andijan Experimental Station of Uzbek Research Institute of Plant Industry and Farming Institute Research Station in Dashoguz.
- **South Asia** – Development Research Foundation and Accion Fraternal Ecology Center, Central Arid Zone Research Institution.

### **Collaboration with other CRPs**

Collaboration with other CRPs, especially the other systems CRPs has started. Joint participation in meetings on strategic issues such as systems research (Penang) and trade-offs (Wageningen) have taken place. The systems CRP Directors are in regular communication on issues of mutual interest, not in the least where learning still needs to be done. Following the change in Directorship these interactions will be expanded in 2014. Interacting with other CRPs in a real systems way has still to be implemented. For example, outputs from commodity and thematic CRPs are being used in many of the DS activities involving e.g. crops, livestock, water, land, markets, etc., but are not yet fully imbedded in joint systems-based activities with feedback loops to all CRPs involved. This is high on our agenda for 2014.

## F. CAPACITY BUILDING

*Selected examples, please see exhaustive partners list in Annex Table 1.*

**West African Sahel & Dryland Savannas:** Stakeholder training - Innovation Platforms; farmer training - wheat production packages, seed production; Support to national scientists for collecting crop and tree data and creating databases; Training of farmers in intensification technology for agroforestry; Training of trainers/lead farmers, extension agents in “scenarios visioning for districts”; Workshops with partners on use of printed, radio, video messages, seed mini-packs.

### **North Africa & West Asia:**

- In Yemen, two courses on informal seed production and seed business plan development, members of the Seed Producers Groups were trained on best practices for producing quality seeds. In Tunisia, farmers trained on low-cost agricultural packages.
- A Tunisian Stakeholders Meeting was involved policy makers, farmers, local NGOs to gather community needs before land and water conservation practices in Tunisia.
- Policy adoption workshops in Beni Khedache, Tunisia and Meknes, Morocco to analyze current policies and constraints to agricultural development.
- Three women-based CBOs trained in business management skills to create and manage small businesses. It is anticipated that increasing off-farm income will reduce dependence on on-farm income, pressure on a fragile eco-system.
- Irrigation water management for olive growing, in Daraa, Syria, funded by CFC and OFID.

### **East & Southern Africa**

- Discussions started with Bunda College in order to support MSc field research in the Chinyanja Triangle as part of the capacity building of E&SA. Collaboration will also start with NARES so that tools and approaches developed will be used for sustainable intensification within the Chinyanja Triangle. During the 2013 season, three extension workers and more than ten farmers (the majority youth) were trained on agronomic survey and landscape health assessment methods. Awareness on the need for improved resources management was created for the local communities.
- The ZimCLIFS project team prepared training materials on forage conservation, crop establishment, Innovation Platform creation, data collection, handling and entry. Capacity impacts were achieved through establishment of Innovation Platforms (use of new approaches by research and extension staff), facilitation skills, and technology demonstrations at 300 farmers’ fields hosting trials and field days. The project team benefited from training on participatory modeling exercise from the Australian based partners from CSIRO and QAAFI-QDAFF.

**Central Asia:** A group of researchers and post-graduate students undertook salinity mapping, soil classification, description of plant communities and taxonomic and genetic analyses in selected areas in the Aral Sea Action Site (Khorezm and Karakalpakstan), contributing to the activity cluster on marginal lands. The group of students came from Moscow Lomonosov State University, a key partner in implementing the Drylands CRP in Central Asia

### **South Asia**

- In India, Bhoochetana and Tata Trusts supported training in soil-test fertilizer, participatory evaluation of cultivars and innovative delivery for knowledge and scaling-up; 4380 Farmers Days were held.
- Technicians were trained on ABD assessment with communities and use of Global Positioning Systems and Geographic Information System tools.
- CRPs on Livestock and Fish and Dryland Systems joined with ‘Bhoochetana Plus’ - a Government of Karnataka-CGIAR initiative, to deliver a four-day training program on feed resources assessment and prioritization tools. The course trained partners and implementers of feed-related activities in Action Sites in Karnataka, West Rajasthan and Andhra Pradesh, with CGIAR partners, line agencies of the Karnataka Government, NGOs and cooperatives participated.

### **Dryland Systems - Capacity Development in 2013**

In 2013, Dryland Systems sponsored many group and individual training in the program’s focus area. Group courses included conservation agriculture, livestock production, integrating gender approaches in research, irrigation water management, video production for extension, rangeland management, socio-economic analysis, scientific science communication, statistical design and data management. Individual degree research, included: combatting land degradation, impact assessment, raising and marketing goats for households,, water and salinity management.

- 79 group sessions - 619 people trained; 25% women, 75% men.
- 15 MSc/PhD students – women 2MSc, 2 PhD; Men 3 PhD, 6MSc.

## G. RISK MANAGEMENT

- **Change in program leadership.** The Director of Dryland Systems resigned in January 2014. The vacant post was temporarily filled by ICARDA's Deputy Director General- Research as Acting Director of the program, who overlooked the implementation of activities and cooperation with partners in Target Regions, and development and submission of the revised POWB2014, the 2013 Annual Report and the Extension Proposal. He also completed the Director's Office staffing which is currently comprised of a Research Program Administrator, Finance program Administrator, Communication Specialist and a Senior Administrative Assistant. After an extensive recruitment process, a new Director has been chosen and will be in place within a couple of months. In the meantime, activities in Action Sites in collaboration with partners are ongoing in-line with plans.
- **The move from Syria:** The CRP progress we report has been achieved against the backdrop of the situation in Syria, the lead Center's host-country. The Center had established numerous operations in about 40 countries with offices in 15, and as a result was warmly welcomed to post its decentralized staff there. This was implemented according to a Decentralization Strategy & Investment Plan approved by the Consortium Office. It involves integrates Research Platforms throughout the dry areas and will further foster long-established partnerships with national programs and other partners.
- **Political unrest and geopolitics.** The program has been exposed to social and political instability and unrest in certain countries where it operates (namely Egypt, Syria, Lebanon, and Tunisia) and by the situation with Iran. Political instability in the Sahel region, restricting overland travel by key research staff (e.g. unrest Mali and in Northern States in Nigeria) can hamper the implementation of the program in those countries for the West African Sahel and Dryland Savannas component.



## H. LESSONS LEARNED

- **Integrated research approaches are good for network building.** Outcome-oriented participatory research, when executed well, ensures timely and quality outputs builds strong networks, attracts donor interest and enables impact. From the past year we learned that integration is still highest between activities done by programs in individual CG Centers; followed by single Centers working with NARS; followed by joint research involving more than one CG Center and including NARS. Clearly, to achieve systems-based research activities, we aim for all partners along the impact pathway to be involved. There is a tendency to quickly call the involvement of a few often traditional partners an ‘innovation platform’. In the extension phase and beyond we need to sharpen the innovation platforms in several ways, feeding on lessons learned. Effective innovation platforms include, at the least, representatives of all partners along the impact pathway, strong engagement in involving policy-makers early on, and use of the platforms to drive outcomes – or “follow the impact pathway backwards”. In this way each platform is a forum to identify and understand constraints between agricultural practitioners, and work backward from this point to set the research agenda. We note that, in many instances, CG Centers have solutions looking for a problem, rather than vice versa. The program’s Monitoring and Evaluation capacity is now significantly strengthened with the appointment of the Research Program Administrator, who has a strong background in M&E and expertise in linking achievements to targets, indicators and metrics. This thinking will be a major activity and change in mindset that is implemented with all partners during the Extension Phase.
- **The complexity of systems research requires careful management.** An important learning point of the Dryland Systems research team is that the systems complexity of a systems approach should not be underestimated. Managing and coordinating such work on the scale of Dryland Systems requires patience, new insight and a high degree of coordination. Care is needed in putting in place the key roles and relationships of such a program, in areas such as: identifying stakeholders, and motivating them to work to common goals – often outside their core profession, working in teams with others with divergent interests. The learning curve on the organization of the CRPs, how they relate to each other and with other bilateral projects and the reporting requirements is a slower process that anticipated. In some disciplines, scrutiny of how the system [performs is a research area in its own right](#) – for example, the vast areas of health systems research. As it evolves, Dryland Systems will benefit from such a perspective – through its monitoring and evaluation process, but also as a socio-economic area of study within the program.
- Timely reporting by the many partners, led by the Target Region Coordinating Center Focal Points and Target Region Coordinators, continues to prove a challenge. The provision of now \$215,000 per year to the Target Region Coordinators has provided them with additional carrots to motivate, facilitate and implement timely information gathering and reporting. By the end of 2014 we will see if this application of the subsidiarity principle requires greater funding or other forms of facilitation (e.g. Target Region Coordinators Workshop on standardizing methodologies, and agreement on approaches that elicit automatic information feedback, data archiving and analysis).
- A final lesson learned was that with many excellent scientists on board, overall leadership should be stressing outstanding management skills of multi-cultural, multi-country and interdisciplinary teams, over the leader’s own science excellence.

**ANNEX 1: CRP Indicator of progress with targets**

Indicator	Glossary/guidelines for defining and measuring the indicator, and description of what the CRP includes in the indicator measured, based upon the glossary	Deviation (10% away from target)	2013		2014
			Target	Actual	Target
<b>KNOWLEDGE, TOOLS, DATA</b>					
1. Flagship “products”	<p><b>Flagship - West African, Sahel &amp; Dryland Savannas:</b> Smart phone app for basic agronomy, basic water balance, forming market linkages and accessing market information [IDO: 5; IDO: 1,2,6]</p> <p><b>Flagship - North Africa &amp; West Asia:</b> 1) 2 policy briefs on land and water policies in Beni Khedache, Tunisia and Meknes, Morocco. These police briefs call for more involvement of local stakeholders in decision making processes; social, economic and environmental indicators affecting livelihoods assets were identified [IDO: 7; IDO: 1,2,3]</p> <p>2) Recommendations for policy measures for reducing the rate of groundwater, balancing the prevailing right-to-water view and charges for exorbitant use [IDO: 7; IDO: 1,2,3,4] <a href="http://www.iwanponline.com/wp/up/wp2014141.htm">http://www.iwanponline.com/wp/up/wp2014141.htm</a></p> <p>3) Completed participatory assessment reports highlighting System vulnerability and production system dynamics in the Meknes site (Morocco) [IDO: 1; IDO: 1]</p> <p>4) Data compiled from different sources and from satellite images on the state and threats to dryland agro-biodiversity in Jordan, Lebanon, Morocco and Tunisia [IDO: 2; IDO: 2,4]</p> <p>5) Three irrigation and agronomic options for effective management for different production systems. Irrigation management support system (IM2S) is being formulated and tested at station field trials for the three main agro-ecologies of the Egypt’s Delta and two at the Iran’ Karkheh basin [IDO: 2; IDO: 2,4]</p> <p>6) Treated wastewater and greywater data collected analyzed and reported. Data on greywater generation and potential use in Jordan and Tunisia collected. Workplan and field demonstration initiated [IDO: 2; IDO: 2,4]</p> <p>7) Conservation agriculture (CA) practices are expanding over 39000 ha for nearly 5080 farmers in NAWA (Jordan, Syria, Tunisia, Morocco, Iraq). The key driving force for this out scaling is the conception and fabrication of locally-made low cost zero till seeders in partnership with the private sector. The economic benefit from adopting CA in Syria for example is more than \$300 US/ha. Environmentally, improvements in soil fertility, water and energy saving are demonstrated. Atmospheric benefits (less carbon dioxide emissions, dust storms and smoke) are yet to be monitored. Manufacturing and testing low-cost zero-till (ZT) seeders in Morocco, Algeria, Tunisia and Jordan within ACIAR-funded bilateral project. 19 small ZT seeders manufactured in Jordan and supplied to Iraq [IDO: 1; IDO: 1,2,6]</p> <p>8) Improved technology using more efficient fat separators to process sheep milk for the production of highly praised products in Jordan (Jameed) was developed and extended to private sheep milk processors in El-Karak governorate. While saving 60% in both energy and water, this technology can be scaled out to other countries/sites in West Asia where sheep milk is an important product [IDO: 5,8; IDO: 3,5]</p> <p>9) Assessment and monitoring of rangeland health and testing improvement packages including resting, direct seeding of Salsola, scarification of the top soil surface and introduction of cactus/shrubs and grasses in NAWA region (national programs assessed (GEF</p>				
			20	30	48

	<p>bilateral) the status and importance of local agro-biodiversity by surveying 570 farm households in the project target areas including the characterization of their livelihood strategies, agro-biodiversity use and household income sources. (Renewable Agriculture and Food Systems: Page 1 of 12/ <a href="https://doi.org/10.1017/S1742170513000240">doi:10.1017/S1742170513000240</a> [IDO: 4; IDO: 4])</p> <p><b>Flagship - East and Southern Africa:</b> 10) two manuscripts that will greatly assist the DS CRP with targeting and impact assessment. A journal article has been accepted by Society and Natural Resources which describes a framework for conceptualizing and measuring resilience in dryland systems. This framework shifts the attention away from measuring the resilience of a system to a focus on resilient development processes. Such an approach is more useful for development partners and offers a practical and applied solution to what have often been overly theoretical debates. We will test this framework using national government data in Kenya in 2014 to identify districts and communities that were “resilient” in the face of climate shocks. Significant progress has been made on a second paper that rethinks the “divide” between areas that are “vulnerable” and areas that have the potential to “sustainably intensify”. The manuscript digs into the theoretical literature surrounding these two concepts and proposes an alternative approach that recognizes how intensification can trigger increase vulnerability. The MS also proposes the need to consider how extensive systems have long played the role of vulnerability mitigation in drylands yet intensification might be achieved in a sustainable manner [IDO: 1,2; IDO: 1,2]</p> <p>11) Collaborative process to compile and synthesize existing dispersed knowledge that trees play in providing resilience in the drylands of Africa. This consultative process brought together fifty experts from East Africa and beyond in a five-day write-shop, which resulted in a book: <i>Treeslience. An Assessment of the Resilience Provided by Trees in the Drylands of East Africa</i>, which was published in January 2014 [IDO: 1; IDO: 1]</p> <p>12) The project also produced one policy brief and two technical briefs [IDO: 7; IDO: 1]</p> <p>13) Continued work on the ACAR funded project “Farming Systems and food security in Sub-Saharan Africa: Priorities for Science and Policy under Global Change”. Significant progress has been made in the completion of the major output of this project, a book on the farming systems of Africa, edited by Garrity, Lynam and Dixon, which will be published in 2014. The farming systems analysis was highlighted during a public awareness raising event at the FARA Africa Agriculture Science Week’s Side: “Accelerating Sustainable Intensification in Africa: A farming systems framework for targeting investment”; Farming systems and other thematic spatial data sets and statistics produced with partners will be posted on FAO farming systems website in 2014 [IDO: 7; IDO: 1,4]</p> <p>14) BEST: A number of publications, policy briefs and media materials have been produced and are targeted to both policymakers and local communities [IDO: 7; IDO: 1,2] <a href="http://www.ucl.ac.uk/best/">http://www.ucl.ac.uk/best/</a></p> <p>15) IMGOATS: This project has distilled many useful lessons about innovation platforms and NGO partnerships to improve livestock value chains. These lessons will be applied in future work under the CRP in value chains. The value chain approach to improving the market orientation of livestock production will also be scaled up under the CRP [IDO: 4; IDO: 1,3,5,6]</p> <p>16) The IBLI revised and improved the empirical model upon which the index-insurance contract is based. In addition to increased precision the model was extended beyond our pilot district of Marsabit to cover the 11 ASAL Counties of Northern Kenya [IDO: 4; IDO: 4]</p> <p>17) ZimCLIFS continued work on the ACIAR funded project on crops x livestock integration in mixed systems in four districts of Zimbabwe. Part of this work led to four conference papers on various topics on sustainable intensification of agriculture using the ZimCLIFS project experience. This work also contributed to the FARA- Africa Agriculture Science Week’s Side event on: “Accelerating Sustainable Intensification in Africa: A farming systems framework for targeting investment”. Conducted a soil and landscape health assessment in the Chinyanja Triangle action site from 1280 points in eight sites. This will guide interventions (e.g. what varieties of crops to grow where and what fertilizer levels to input where?) [IDO: 1,4,8; IDO: 2,4]</p> <p><b>Flagship - Central Asia:</b> 18) the 6 following products were developed through multi-stakeholder approach using congruent decisions (i) Bio-physical and socio-economic characteristics of three benchmark research areas (Action Sites) for Central Asia -- these were defined as integrated interdisciplinary research process in the inception phase; (ii) contextualizing the regional plan; (iii) Logical framework for implementation of the CRP DS in CA region; detailed work-plan for implementation of DS CRP in 2013-2014 in Central Asia [IDO: 1,2,4; IDO: 1,2,4] <a href="http://www.cac-program.org/files/crp/crp_1_1_scd_en.pdf">http://www.cac-program.org/files/crp/crp_1_1_scd_en.pdf</a></p>				
2. % of flagship products - explicit target of women farmers/NRM managers	Please see section above (1,2,4,5,6,7,8,9,10,11,13,15,16,17,18) [IDO: 3,8; IDO: 3,5]		20%	30%	50%

3. % of flagship products assessed - gender-disaggregated impact	Please see section above (1,3,5,8,9,10,13,15,16,18) [IDO: 3,8; IDO: 3,5]		20%	30%	50%
4. "tools"	<p><b>Flagship - West African, Sahel &amp; Dryland Savannas</b> 9) Conceptual and empirical models on quantify and identify trees in inland valleys and intervening ridges in agriculturally developed and virgin land, and their links with hydrology [IDO: 1; IDO: 1]</p> <p><b>Flagship - North Africa &amp; West Asia:</b> 1) A series of 10 booklets funded by an IFAD bilateral project stating best practices in sheep management for West Asia region referring to the 10 following topics: mating, pregnancy, lambing, lactation, milk and milk processing, sheep selection, health care, feed reference guide, urea treated straw and body condition scoring [IDO: 4,8; IDO: 4,5]  <a href="http://www.icarda.org/publications-and-resources/manuals-guidelines">http://www.icarda.org/publications-and-resources/manuals-guidelines</a></p> <p>2) Monitoring and assessment of rangelands [IDO: 4; IDO 1] <a href="http://www.icarda.org/monitoring-and-evaluation">http://www.icarda.org/monitoring-and-evaluation</a></p> <p>3) Five tools related to water and land management in NAWA: Irrigation management support system, Drainage management support system, Crop water requirement model, Biophysical and economic data collection guideline, and On station and farm managed trials model [IDO: 2; IDO: 2,4]</p> <p>4) Wiki-based on-line tool collecting salinity knowledge and promoting inter- and intra-region collaboration is operational. Tool to standardize interpretation of collected field data in saline environments [IDO: 2; IDO: 2,4]  <a href="http://wiki.aqwaterconsult.com/index.php?title=Salinity:Community_portal">http://wiki.aqwaterconsult.com/index.php?title=Salinity:Community_portal</a></p> <p>5) Adapting the SWAT model to enable users to adopt the model in the dry areas. The modifications are expected to enhance the use of this model to assess the impact of water harvesting interventions on the environment and productivity within the dry environment [IDO: 1; IDO: 1,4]</p> <p>6) Participatory social and gender diagnosis tool was adapted in gender research in 4 sites in Algeria, Morocco and Lebanon under different natural resources and socioeconomic contexts [IDO: 3,8; IDO: 3,5,6]</p> <p>7) An efficient sampling protocol for sagebrush/grassland monitoring. A randomized sampling protocol was presented for geo-referenced; nadir photographs acquired using digital charting techniques in extensive rangeland areas. This protocol holds great potential for reducing the field time and labor costs which currently preclude resource managers from conducting full and rigorous assessments of rangeland health and condition [IDO: 4; IDO: 1,4]  <a href="http://iapreview.ars.usda.gov/research/publications/Publications.htm?seq_no_115=299387">http://iapreview.ars.usda.gov/research/publications/Publications.htm?seq_no_115=299387</a></p> <p>8) A methodological approach to model the grass-tree relationship in Quercus suber Mediterranean forest ecosystems. The proposed approach will provide forestry managers with the ability to determinate different levels of anthropogenic pressure and to respond with contingency measures for each of these levels [IDO: 1; IDO: 1]  <a href="http://www.internationalgrasslands.org/files/igc/publications/2013/proceedings-22nd-igc.pdf">http://www.internationalgrasslands.org/files/igc/publications/2013/proceedings-22nd-igc.pdf</a></p> <p><b>Central Asia:</b> 3D virtual environments tool <a href="https://www.dropbox.com/sh/r0w3nn79a32vka9/aGoVdmYwMK">https://www.dropbox.com/sh/r0w3nn79a32vka9/aGoVdmYwMK</a></p>		20	24	27
5. % of tools - explicit target of women farmers	Please see section above (2,3,4,5,6,9) [IDO: 3,8; IDO: 3,5]		40%	45%	45%
6. % of tools assessed - gender-disaggregated impact	Please see section above (1,2,3,4,6,7,8) [IDO: 3,8; IDO: 3,5]		40%	45%	45%



7. Open access databases	<p><b>Flagship - West African, Sahel &amp; Dryland Savannas:</b> Data set and empirical relationships to understand the spatio-temporal effect of trees on crops by species combination (tree and crop) field to catchment landscape scales [IDO: 1; IDO: 1]</p> <p><b>Flagship - North Africa &amp; West Asia:</b> Dryland feed database compiled for use by researchers, extension services and students dealing with animal nutrition and management in drylands [IDO: 4; IDO: 4] <a href="http://temp.icarda.org/afawa2">http://temp.icarda.org/afawa2</a>; Salinity wiki attempts to collect the knowledge the activities in Dryland Systems and CRP WLE in a comprehensive manner to allow inter- and intra-region collaboration [IDO: 1; IDO: 1] (<a href="http://wiki.agwaterconsult.com/index.php?title=Salinity:Community_portal">http://wiki.agwaterconsult.com/index.php?title=Salinity:Community_portal</a>) A Global Weather Data for SWAT model was published at in collaboration with Texas A&amp;M University and Cornell University. The site is open access and enables users to download hourly and daily weather data for 32 years. So far, there are 12,000 downloads from around the world. This is a collaborative efforts including contribution from CRP 5 (WLE) and CRP 7 (CCAFS) [IDO: 2; IDO: 2] <a href="http://globalweather.tamu.edu/">http://globalweather.tamu.edu/</a> in collaboration with Texas A&amp;M University and Cornell University</p> <p><b>Flagship - East and Southern Africa:</b> A unique and comprehensive data set designed to assess the socioeconomic welfare impacts for the Index-Based Livestock Insurance program it data also allows for a broad range of analyses across livelihood trends and determinants, risk resilience and adaptation, nutritional and educational levels and much more [IDO: 4; IDO: 4]. In Marsabit 924 households are being tracked annually since 2009. A comprehensive survey is conducted; ostensibly this is for assessing the social and economic welfare impacts of IBLI but given the nature of the data we can investigate a much wider range of dynamics. Most of these data sets are currently under analysis and accessible only to partners under sharing agreement developed by the initial key players [IDO: 4; IDO: 4]</p> <p><b>Flagship - South Asia:</b> Socio-economic survey; crop yields in field experiments; land use land cover data; agro biodiversity survey data. Most of these data sets are currently under analysis [IDO: 1,2,4; IDO: 1,2,4]</p>	5	9	6
8. Open access databases users	<ol style="list-style-type: none"> <li>Wani, S P (2013) <i>Jatropha (Jatropha curcas L.)</i>. In: Biofuel Crops: Production, Physiology and Genetics. CAB International, Wallingford, UK, pp. 312-338. ISBN 978-1845938857</li> <li>SP Wani and G Chander. 2012. Jatropha curcas biodiesel – is it a panacea for energy crisis, ecosystem service and rural livelihoods? Challenges and opportunities. In: Jatropha - challenges for a new energy crop, volume 1: Farming, economics and biofuel (Eds Bir Bahadur, M Sujatha, Nicholas Carels), pp. 311-332. Springer Science, New York. (published in 2013)</li> <li>Rao, A V R K and Nageswara Rao, D V K and Wani, S P and Minhas, P S and Ahmed, M I and Madhukar, G (2013) <i>Moisture Stress Assessment through NDVI and Climate Tools for Crop Management at Anantpur District, AP</i>. In: Geospatial Technologies for Natural Resources Management. New India Publishing Agency, New Delhi, India, pp. 363-374. ISBN 9381450803</li> <li>Sahrawat, K L and Wani, S P (2013) <i>Nutrient Deficiencies and their Management in Soils of the Semi-Arid Tropical Regions</i>. In: Climate Change and Agriculture. Stadium Press (India) Pvt. Ltd., New Delhi, pp. 73-89. ISBN 9789380012407</li> <li>Wani, S P and Sawargaonkar, S L and Pavani, E and Rao, S S and Sharma, H C (2013) <i>Production technologies for enhancing sweet sorghum yields</i>. In: Developing a Sweet Sorghum Ethanol Value Chain. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh, India, pp. 45-62. ISBN 978-92-9066-555-7</li> <li>Bhattacharyya, T and Pal, D K and Wani, S P and Sahrawat, K L (2013) <i>Rain-fed Agriculture, Area and Extent</i>. In: Climate Change and Agriculture. Stadium Press (India) Pvt. Ltd., New Delhi, pp. 1-18. ISBN 9789380012407</li> <li>Sawargaonkar, G L and Wani, S P and Pavani, M and Ravinder Reddy, Ch (2013) <i>Sweet sorghum bagasse – A source of organic manure</i>. In: Developing a Sweet Sorghum Ethanol Value Chain. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh, India, pp. 155-162. ISBN 978-92-9066-555-7</li> <li>Raju, K V and Wani, S P and Anantha, K H (2013) <i>BHOOCHE TANA: Innovative Institutional Partnerships to Boost Productivity of Rainfed Agriculture in Karnataka, India (Research Report No. 59)</i>. Research Report. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh.</li> <li>Wani, S P (2013) <i>Bhoochetana: Bridging Yield Gaps with Science-led Interventions in Andhra Pradesh</i>. Documentation. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh, India.</li> <li>Wani, S P and Sarvesh, K V and Sahrawat, K L and Krishnappa, K and Dharmarajan, B K and Raju, K V and Mukherjee, K and Dar, W D (2013) <i>Bhoochetana: Building Resilience and Livelihoods through Integrated Watershed Management. Resilient Dryland Systems Report No. 62</i>. Research Report. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India.</li> <li>Wani, S P (2013) <i>Bhoochetana: Mission to Enhance Productivity of Rainfed Crops in Karnataka(Revised)</i>. Documentation.</li> </ol>	10,000	20,000	20,000

	<p>International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh, India.</p> <p>12. Wani, S P and Khanwalkar, S and Krishnappa, K and Raju, K V and Sarvesh, K V (2013) <a href="#">Bhoochetana: Process Documentation-A program that helped farmers come out of low productivity and poor economic status</a>. Documentation. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh, India.</p> <p>13. Wani, S P and Chander, G and Sahrawat, K L and Dixit, S and Venkateswarlu, B (2013) <a href="#">Improved crop productivity and rural livelihoods through balanced nutrition in the rainfed semi-arid tropics</a>. Research Report. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh, India.</p> <p>[IDO: ALL; IDO: 1-6]</p>				
<p>9. Publications in ISI journals</p>	<p>[IDO: ALL; IDO: 1-6]</p> <ol style="list-style-type: none"> <li>1. Sahrawat, K L and Wani, S P and Pardhasaradhi, G (2013) <a href="#">Balanced nutrient management: Effects on plant zinc</a>. Journal of SAT Agricultural Research, 11 (12). pp. 1-3. ISSN 0973-3094</li> <li>2. Uchino, H and Watanabe, T and Ramu, Karri and Sahrawat, K L and Marimuthu, S and Wani, S P and Ito, O (2013) <a href="#">Calibrating Chlorophyll Meter (Spad-502) Reading by Specific Leaf Area for Estimating Leaf Nitrogen Concentration in Sweet Sorghum</a>. Journal of Plant Nutrition, 36 (10). pp. 1640-1646. ISSN 0190-4167</li> <li>3. Garg, K K and Wani, S P and Rao, A V R K (2013) <a href="#">Crop coefficients of Jatropha (Jatropha curcas) and Pongamia (Pongamia pinnata) using water balance approach</a>. Wiley Interdisciplinary Reviews: Energy and Environment. pp. 1-16. ISSN 2041-840X</li> <li>4. Uchino, H and Watanabe, T and Ramu, Karri and Sahrawat, K L and Marimuthu, S and Wani, S P and Ito, O (2013) <a href="#">Effects of Nitrogen Application on Sweet Sorghum (Sorghum bicolor (L.) Moench) in the Semi-Arid Tropical Zone of India</a>. JARQ - Japan Agricultural Research Quarterly, 47 (1). pp. 65-73. ISSN 0021-3551</li> <li>5. Hailelassie, A and Blummel, M and Wani, S P and Sahrawat, K L and Pardhasaradhi, G and Samireddypalle, A (2013) <a href="#">Extractable soil nutrient effects on feed quality traits of crop residues in the semiarid rainfed mixed crop-livestock farming systems of Southern India</a>. Environment, Development and Sustainability, 15 (3). pp. 723-741. ISSN 1573-2975</li> <li>6. Srinivasarao, CH and Gayatri, S R and Venkateswarlu, B and Jakkula, V S and Wani, S P and Kundu, S and Sahrawat, K L and Rajasekha Rao, B K and Marimuthu, S and Gopala Krishna, G (2013) <a href="#">Heavy metals concentration in soils under rainfed agro-ecosystems and their relationship with soil properties and management practices</a>. International Journal of Environmental Science and Technology. pp. 1-14. ISSN 1735-2630</li> <li>7. Rao, A V R K and Wani, S P and Singh, K K and Ahmed, M I and Srinivas, K and Bairagi, S D and Ramadevi, O (2013) <a href="#">Increased arid and semi-arid areas in India with associated shifts during 1971-2004</a>. Journal of Agrometeorology, 15 (1). pp. 11-18.</li> <li>8. Chander, G and Wani, S P and Maheshwer, D L and Hemalatha, P and Sahrawat, K L and Krishnappa, K and Sawargaonkar, G L and Anantha, K H and Sudi, R and Jangawad, L S and Srinivasa Rao, Ch and Pardhasaradhi, G and Jat, R A (2013) <a href="#">Managing soil fertility constraints in market-led shift to high value agriculture for benefiting smallholders in the semi-arid tropics</a>. Journal of SAT Agricultural Research, 11. pp. 1-11. ISSN 0973-3094</li> <li>9. Velmurugan, R and Mahendran, P P and Wani, S P and Uttam, K and Prabhavathi, M (2013) <a href="#">Molybdenum status and critical limit in the soil for green gram (Vigna radiata) growing in Madurai and Sivaqangai districts of Tamil Nadu, India</a>. Soil Science and Plant Nutrition, 59 (2). pp. 229-236. ISSN 1747-0765</li> <li>10. Sawargaonkar, G L and Patil, M D and Wani, S P and Pavani, E and Reddy, B V S and Marimuthu, S (2013) <a href="#">Nitrogen response and water use efficiency of sweet sorghum cultivars</a>. Field Crops Research, 149. pp. 245-251. ISSN 0378-4290</li> <li>11. Sahrawat, K L and Wani, S P (2013) <a href="#">Soil Testing as a Tool for On-Farm Fertility Management: Experience from the Semi-arid Zone of India</a>. Communications in Soil Science and Plant Analysis, 44 (6). pp. 1011-1032. ISSN 0010-3624</li> <li>12. Pal, D K and Wani, S P and Sahrawat, K L (2013) <a href="#">Zeolitic soils of the Deccan basalt areas in India: their pedology and edaphology</a>. Current Science, 105 (3). pp. 309-318. ISSN 0011-3891</li> </ol>		<p>25</p>	<p>29</p>	<p>37</p>

10. Strategic value chains	<p><b>Flagship - North Africa &amp; West Asia:</b> Value chain for dried sheep milk products namely Jameed in Jordan [IDO: 3,4,8; IDO: 3,4,5] Value chains of dairy and onions in Nile Delta, Egypt and Argan and cactus in Morocco [IDO: 5; IDO: 3,4,5] <a href="http://www.icarda.org/publications-and-resources/manuals-guidelines">http://www.icarda.org/publications-and-resources/manuals-guidelines</a></p> <p><b>Flagship - East and Southern Africa:</b> Imgoats (ILRI) project analyzed the meat goat value chain in the Inhassoro district of Mozambique (semi-arid region of the country) [IDO: 4,5; IDO: 3,4,5]</p> <p><b>Flagship - South Asia:</b> Women focused agriculture and livestock value chain study is completed recently for two dryland action sites in west Rajasthan [IDO: 1,2,3,4,8; IDO: 1-5]</p>		5	7	7
11. Agro-ecosystems analysed/characterised	<p><b>Flagship - North Africa &amp; West Asia:</b> agro-pastoral/pastoral systems in Tafilah-Salamyah transect (Jordan-Syria) and Beni Khedache - Sidi Bouzid transect (Tunisia) [IDO: 4; IDO: 1,4]; rainfed wheat-based system in Meknes (Morocco) and Karkheh river basin (Iran) [IDO: 1; IDO: 1]; irrigated system in Nile Delta (Egypt) and Karkheh river basin (Iran) [IDO: 2 IDO: 2]; Mountain system (Beni Khedache, Jordan) [IDO: 2; IDO: 2]</p> <p><b>Flagship - Central Asia:</b> Central Asia: Seed system compatible with existing agro-ecological environments to supply farmers with high quality seed and planting materials in Rasht valley [IDO: 1; IDO: 1]; Cereals, potato, vegetable, horticultural, fodder crops in pure and mixed plantations in Aral sea region [IDO: 2; IDO: 2] <a href="http://www.cac-program.org/files/crp/crp_1_1_scd_ru.pdf">http://www.cac-program.org/files/crp/crp_1_1_scd_ru.pdf</a></p> <p><b>Flagship - South Asia:</b> Agricultural production systems in semi-arid eco-regions (groundnut based crop-livestock production systems of Anantapur [IDO: 1; IDO: 1]; Pulses based crop-livestock production systems in Kurnool [IDO: 1,4; IDO: 1,4]; Cereals based crop-livestock production systems in Bijapur) and agricultural production systems in arid eco-regions ( Millet based crop-livestock production systems in Jodhpur [IDO: 1,2,4; IDO: 1,2,4]; Small ruminant based crop-livestock production system in Barmer and Small ruminant based crop-livestock production system in Jaisalmer) [IDO: 1,2,4; IDO: 1,2,4]</p>		10	14	21
12. Population of agro-ecosystems	[IDO: ALL; IDO: 1-6]		400,000,000	600,000,000	600,000,000
<b>CAPACITY ENHANCEMENT AND INNOVATION PLATFORMS</b>					
13. Trainees in short-term programs (male)	<p><b>Flagship - West African, Sahel &amp; Dryland Savannas:</b> Local, catchment and landscape processes, ecosystem services and farming options and strategies [IDO: 1,2,7; IDO: 4,6]</p> <p><b>Flagship - North Africa &amp; West Asia:</b> Training topics areas are: Geoinformatics [IDO: 1,2,4; IDO: 1,2,4] – Biometrics [IDO: 1,2,4; IDO: 1,2,4] – building capacities in agricultural extension [IDO: 6; IDO: 6] – Value chain analysis [IDO: 5; IDO: 1,2,3,4] – Integrated gene management and management of agro-biodiversity [IDO: 1,2; IDO: 1,2,4] – Water and land management [IDO: 1,2; IDO: 1,2,4] – Integrated crop livestock [IDO: 4; IDO: 1,2] – Rangeland assessment and management [IDO: 4; IDO: 1,4] – Conservation agriculture [IDO: 1,2; IDO: 1,2,4] – Socio-economic and policy analysis [IDO: 5,6,7 IDO: 1,2,3,4] – Gender approach [IDO: 3,8 IDO: 3,5] – impact assessment and livelihood analysis [IDO: 1,2,4; IDO: 1,2,3,4] - Mathematical programming and the GAMS software [IDO: 5,6,7; IDO: 1,2,4] – Conservation agriculture machinery [IDO: 1,2 IDO: 1,2], Agro-biodiversity [IDO: 1,2,3,8; IDO: 1,2,4], Improved management techniques and milk processing [IDO: 3,4,8; IDO: 1,2,4], SWAT introductory workshop [IDO: 2; IDO: 1,2,4], Irrigation water management for olive growing [IDO: 2; IDO: 2], evaluation and demonstration of 5 different ZT seeders [IDO: 1,2; IDO: 1,2]</p> <p><b>Flagship - East and Southern Africa:</b> dry season feeding strategies , fodder conservation [IDO: 4; IDO: 1,2,4], use of equipment in Conservation agriculture [IDO: 1,2; IDO: 1,2,4], chemical use [IDO: 1,2; IDO: 1,2], Innovation Platform processes [IDO: 6; IDO: 6], research peer review workshop [IDO: ALL; IDO: 1-6], agronomic survey (maize yield assessment and estimation) [IDO: 1; IDO: 2], landscape health assessment (and assisted data collection) [IDO: 1,2,4; IDO: 1,2,4], management of communal grazing areas [IDO: 4; IDO: 1,4], gender [IDO: 3,8; IDO: 3,5].</p> <p><b>Flagship - South Asia:</b> Sustainable management of NRs, methods to carry out the ABD assessment with communities, use of GPS (Global Positioning System) and GIS (Geographic Information System) tools, Training on household survey and sex-disaggregated data collection and introduction to village mapping techniques using latest GPS tool, sampling techniques, approaches in interviewing farmers, major sources of errors in data collection and measures to mitigate it, feed resources assessment and prioritization tools, plant biomass measurement, soil sampling and GIS [IDO: 1,2,4; IDO: 1,2,4]</p>		150,000	188,130	800,000

14. Trainees in short-term programs (female)	<p><b>Flagship - West African, Sahel &amp; Dryland Savannas:</b> Local, catchment and landscape processes, ecosystem services and farming options and strategies [IDO: 1,2,7; IDO: 4,6]</p> <p><b>Flagship - North Africa &amp; West Asia:</b> Training topics areas are: Geoinformatics [IDO: 1,2,4; IDO: 1,2,4] – Biometrics [IDO: 1,2,4; IDO: 1,2,4] – building capacities in agricultural extension [IDO: 6; IDO: 6] – Value chain analysis [IDO: 5; IDO: 1,2,3,4] – Integrated gene management and management of agro-biodiversity [IDO: 1,2; IDO: 1,2,4] – Water and land management [IDO: 1,2; IDO: 1,2,4] – Integrated crop livestock [IDO: 4; IDO: 1,2] – Rangeland assessment and management [IDO: 4; IDO: 1,4] – Conservation agriculture [IDO: 1,2; IDO: 1,2,4] – Socio-economic and policy analysis [IDO: 5,6,7; IDO: 1,2,3,4] – Gender approach [IDO: 3,8; IDO: 3,5] – impact assessment and livelihood analysis [IDO: 1,2,4; IDO: 1,2,3,4] - mathematical programming and the GAMS software [IDO: 5,6,7; IDO: 1,2,4] – Conservation agriculture machinery [IDO: 1,2; IDO: 1,2], agro-biodiversity [IDO: 1,2,3,8; IDO: 1,2,4], improved management techniques and milk processing [IDO: 3,4,8; IDO: 1,2,4], SWAT introductory workshop [IDO: 2; IDO: 1,2,4], irrigation water management for olive growing [IDO: 1,2; IDO: 2], evaluation and demonstration of 5 different ZT seeders [IDO: 1,2; IDO: 1,2]</p> <p><b>Flagship - East and Southern Africa:</b> dry season feeding strategies , fodder conservation [IDO: 4; IDO: 1,2,4], use of equipment in Conservation Agriculture [IDO: 1,2; IDO: 1,2,4], chemical use [IDO: 1,2; IDO: 1,2], Innovation Platform processes [IDO: 6; IDO: 6], research peer review workshop [IDO: ALL; IDO: 1-6], agronomic survey (maize yield assessment and estimation) [IDO: 1; IDO: 2], landscape health assessment (and assisted data collection) [IDO: 1,2,4; IDO: 1,2,4], management of communal grazing areas [IDO: 4; IDO: 1,4], gender [IDO: 3,8; IDO: 3,5].</p> <p><b>Flagship - South Asia:</b> Sustainable management of NRs, methods to carry out the ABD assessment with communities, use of GPS (Global Positioning System) and GIS (Geographic Information System) tools, Training on household survey and sex-disaggregated data collection and introduction to village mapping techniques using latest GPS tool, sampling techniques, approaches in interviewing farmers, major sources of errors in data collection and measures to mitigate it, feed resources assessment and prioritization tools, plant biomass measurement, soil sampling and GIS [IDO: 1,2,4; IDO: 1,2,4]</p>		30,000	44,370	200,000
15. Trainees in long-term programs (male)	[IDO: ALL; IDO: 1-6]		20	32	34
16. Trainees in long-term programs (female)	[IDO: ALL; IDO: 1-6]		10	15	15
17. R4D innovation platforms established	<p><b>Flagship - North Africa &amp; West Asia:</b> strategic Innovation platforms established in Meknes, Morocco (3), Sidi Bouzid-Beni Khedache, Tunisia (2), El Karak, Jordan (1), Nile Delta (1) [IDO: 1,2,6; IDO: 1,2,6]</p> <p><b>Flagship - East and Southern Africa:</b> ZmCLIFS: The project used the Innovation Platform (IP) and value chain approaches. Four (IPs) were established focusing on testing and applying appropriate innovations (technological, policy, institutional) to improve productivity and access to markets of beef and dairy cattle, goats, maize, sorghum and groundnuts value chains in mixed crop-livestock systems in four districts of Zimbabwe. [IDO: 1,2,6; IDO: 1,2,6]</p> <p><b>Flagship - Central Asia:</b> Seed systems platform, On-farm adaptive trials, Land conservation and watershed management, Marginal lands, Water use efficiency [IDO: 1,2,4,6; IDO: 1,2,4,6]</p> <p><b>Flagship - South Asia:</b> Innovation platforms are established for west Rajasthan, Anantapur, Kurnool and Bijapur action sites. The major roles as defined in the TOR which was endorsed by the members include (advice on prioritization of activities and technologies identified for the different action sites; advise on strategic implementation process for future research; help to mobilize communities and enhance convergence of public and private institutions, and also financial resources to efficiently implement the programme and for effective service delivery; advocate and broker policy recommendations, communication and lessons that emerge from the programme; implement activities, as required, in collaboration with regional coordinators and other platform members; evaluate the outputs of demonstrations and trials from time to time, and undertake out and up scaling as relevant [IDO: 1,2,6; IDO: 1,2,3,6])</p>		15	20	24
<b>TECHNOLOGIES/PRACTICES IN VARIOUS STAGES OF DEVELOPMENT</b>					

18. Technologies /NRM practices under research (Phase I)	<p><b>Flagship - West African, Sahel &amp; Dryland Savannas:</b> Mechanization options for animal and tractor propelled operations [IDO: 1,2; IDO: 1,2]. New designs of 3 simple and robust implements [IDO: 1,2; IDO: 1,2]. Basic agronomy, water balance, catchment hydrology, farm planning and farm business skills packages [IDO: 1,2,5; IDO: 1,2,4]</p> <p><b>Flagship - North Africa &amp; West Asia:</b> conservation agriculture technologies [IDO: 1,2; IDO: 1,2], small ruminant management [IDO: 3,4,8; IDO: 3,5], milk processing [IDO: 3,4,8; IDO: 3,5], dairy cattle management [IDO: 3,4,8 IDO: 3,5], rangeland assessment and management [IDO: 4; IDO: 4], water harvesting [IDO: 1; IDO: 1,4], supplemental and deficit irrigation [IDO: 2; IDO: 2,4], fertilization [IDO: 1,2; IDO: 1,2], integrated pest management [IDO: 1,2; IDO: 1,2], varieties testing [IDO: 1,2; IDO: 1,2], salinity management [IDO: 2; IDO: 2], agro-biodiversity conservation and uses [IDO: 1,2,8; IDO: 1,2,6], medicinal plants [IDO: 1,2,3,8; IDO: 1,2,3,5], fruit trees cropping [IDO: 1,2; IDO: 1,2], vegetable cropping [IDO: 1,2,3,8; IDO: 1,2,3,5], wheat cropping [IDO: 2; IDO: 2], barley cropping [IDO: 1; IDO: 1], weed management [IDO: 1,2; IDO: 1,2], soil and residue management [IDO: 1,2; IDO: 1,2]; Vallerani water harvesting system in drier areas (rangelands) to improve productivity and water use (reduce run off and erosion) [IDO: 1; IDO: 1].</p> <p>Soil and water interventions in the mountainous wetter areas to reduce soil erosion, reduce runoff and improve productivity [IDO: 1; IDO: 1];</p> <p><b>Flagship - Central Asia:</b> 2 Biological (new potato varieties resilient to climate impact and photoperiod, with improved WUE), Management and cultural practices (Partial Root-zone drying and other deficit irrigation techniques on potato) [IDO: 1; IDO: 1]</p> <p><b>Flagship - South Asia:</b> improved varieties (sorghum, chickpea, cluster bean, mung bean, moth and millet) have been tested and demonstrated (comparing farm seeds and improved seed) in action villages in Bijapur districts; in action villages in Jodhpur, Barmer and Jaisalmer districts [IDO: 1,2; IDO: 1,2]. Sites are identified to demonstrate improved management, community engagement and institutionalization in action sites in west Rajasthan, Ananapur, Kurnool [IDO: 1,2,6; IDO: 1,2,6]. Focus activities are soil and water conservation [IDO: 1,2,4; IDO: 1,2,4]; reseeding of degraded communal grazing areas [IDO: 4; IDO: 1,4]; introduction of multipurpose trees [IDO: 1,2; IDO: 1,2]; institutionalizing CPR management. ICRISAT is also implementing several NRM related technologies focusing on : soil analysis and mapping; soil test-based S, B and Zn interventions [IDO: 1,2; IDO: ]; evaluations of new varieties of groundnut, finger millet, soybean, sorghum, pearl millet, sunflower, castor [IDO: 1,2; IDO: 1,2]; BBF landform interventions [IDO: 1,2; IDO: 1,2]; zero tillage [IDO: 1,2; IDO: 1,2]; aerobic compost preparation techniques [IDO: 1,2,8; IDO: 1,2]; Vermi-compost production techniques [IDO: 1,2,8; IDO: 1,2], biomass generation through gliricidia, animal health camps and breed improvement in about 20 districts [IDO: 4; IDO: 4].</p>		40	47	52
19. % of technologies under research - explicit target of women farmers	[IDO: ALL; IDO: 1-6]		40%	45%	45%
20. % of technologies under research assessed - gender-disaggregated	[IDO: ALL; IDO: 1-6]		5%	8%	10%



<p>21 Agro-ecosystems for feasible approaches for improving ecosystem services, incentives for farmers to improve ecosystem functions</p>	<p><b>Flagship - Central Asia:</b> Potato based food system of CA highlands (Rasht valley) [IDO: 1,7; IDO: 1]; mixed irrigated arid/semi-arid cropping systems of Fergana valley [IDO: 1,2,7; IDO: 1,2]; Seed system compatible with existing agro-ecological environments to supply farmers with high quality seed and planting materials in Rasht valley [IDO: 1,7; IDO: 1]; Cereals, potato, vegetable, horticultural, fodder crops in pure and mixed plantations in Aral sea region [IDO: 2,7; IDO: 2]</p> <p><b>Flagship - South Asia:</b> Groundnut based crop-livestock production systems of ANANTAPUR [IDO: 1,2,4,7; IDO: 1,2,4]; Pulses based crop-livestock production systems in Kurnool [IDO: 1,2,4,7; IDO: 1,2,4]; Cereals based crop-livestock production systems in Bijapur [IDO: 1,2,4,7; IDO: 1,2,4]; Millet based crop-livestock production systems in Jodhpur [IDO: 1,4,7; IDO: 1,4]; Small ruminant based crop-livestock production system in Barmer and Small ruminant based crop-livestock production system in Jaisalmer [IDO: 1,2,4,7; IDO: 1,2,4]</p> <p>North Africa and West Asia: Organic and biodiversity friendly food (Irrigated systems) [IDO: 2,7; IDO: 1,3], Medicinal and herbal plants (pastoral and agropastoral system) [IDO: 4,7; IDO: 1,2,3], Biodiversity protection [IDO: 1,2,4,7; IDO: 1,2,4], watershed services and ecotourism (pastoral and agropastoral systems, rainfed systems, mountains system) [IDO: 2,4,7; IDO: 2,4]</p>		10	14	15
<p>22. People who will potentially benefit</p>	<p>[IDO: ALL; IDO: 1-6]</p>		500,000,000	650,000,000	800,000,000
<p>23. Field-tested technologies /NRM practices (phase II)</p>	<p><b>Flagship - North Africa &amp; West Asia:</b> Pastoral/agropastoral systems [IDO: 4; IDO: 1]; Conservation agriculture technologies [IDO: 1,2; IDO: 1,2], small ruminant management [IDO: 3,4,8; IDO: 1,2,3,5], milk processing [IDO: 3,4,8; IDO: 3,5], rangeland assessment and management [IDO: 4; IDO: 1,4], water harvesting [IDO: 1; IDO: 1], supplemental and deficit irrigation [IDO: 1,2; IDO: 1,2], agro-biodiversity conservation and uses [IDO: 1,2; IDO: 1,2,4], medicinal plants [IDO: 1,2,3,8; IDO: 1,2,3,4,5], fruit trees cropping [IDO: 1,2; IDO: 1,2], vegetable cropping [IDO: 1,2,3,8; IDO: 1,2,3,5], barley cropping [IDO: 1; IDO: 1], weed management [IDO: 1,2,3,8; IDO: 1,2,5], soil and residue management [IDO: 1,2; IDO: 1,2], policies natural resources [IDO: 7; IDO: 1,2], Innovation platforms [IDO: 6; IDO: 6], value chain [IDO: 5,6; IDO: 1,2]</p> <p>Rainfed wheat based system: dairy cattle management [IDO: 3,4,8; IDO: 1,2], supplemental and deficit irrigation [IDO: 1; IDO: 1,2,4], fertilization [IDO: 1; IDO: 1,2], integrated pest management [IDO: 1; IDO: 1,2], varieties testing [IDO: 1; IDO: 1,2], fruit trees cropping [IDO: 1,5; IDO: 1,2], vegetable cropping [IDO: 1,3,8; IDO: 1,2,3,5], wheat cropping [IDO: 1; IDO: 2], weed management [IDO: 1,3,8; IDO: 1,2,5], soil and residue management [IDO: 1; IDO: 1,2], policies natural resources [IDO: 1; IDO: 1,2], innovation platforms [IDO: 5; IDO: 6], value-chain (n.22) [IDO: 5; IDO: 1,2]</p> <p><b>Flagship - East and Southern Africa:</b> ZimCLIFS 9 major technologies (mechanized and non-mechanized conservation agriculture [IDO: 1,2; IDO: 1,2], intercropping maize with legumes [IDO: 1; IDO: 2], use of legumes in biological nitrogen fixation [IDO: 1; IDO: 1,2], improved fallow [IDO: 1; IDO: 1,2], cultivation of six improved forage varieties [IDO: 1,2; IDO: 1,2], forage conservation [IDO: 4; IDO:1,2], feeding of improved fodder to livestock [IDO: 4; IDO: 1,2], seed multiplication [IDO: 1,2; IDO: 1,2]. Key technologies were scored by typologies and relevance with regards to food security [IDO: 1,2,3; IDO: 1,2,3], income generation [IDO: 1,2,3; IDO: 1,2,3], and risk management</p> <p><b>Flagship - Central Asia:</b> TPS tested in the field with 53 smallholders in Rasht valley [IDO: 1; IDO: 1]; Partial root-zone drying as a water-saving technique tested with more than 60 potato growers in Fergana valley [IDO: 1,2; IDO: 1,2].</p> <p><b>Flagship - South Asia:</b> please compare under “ Number of technologies/NRM practices under research in the CRP (Phase I)” above (n.15) [IDO: 1,2,4; IDO: 1,2,4]</p>		40	48	34
<p>24. Agro-ecosystems for which innovations and options for system level improvements developed and field tested (Phase II)</p>	<p>Please compare under “ Number of technologies/NRM practices under research in the CRP (Phase I)” above [IDO: ALL; IDO: 1-6] +B4</p>		15	18	3

25. % of above innovations targeted at reduced inequality between men and women	[IDO: 3,8; IDO: 3,5]		20%	20%	20%
26. Published research outputs used in targeted agro-ecosystems	[IDO: ALL; IDO: 1-6]		40	54	53
27. NRM Technologies /practices released by public + private sector partners (phase III)	<b>Flagship - North Africa &amp; West Asia:</b> separators for improved milk processing [IDO: 3,4,8; IDO: 1,2,3,5]; feed block manufacturing unit [IDO: 3,4,8; IDO: 1,2]; machines for cactus cutting [IDO: 1; IDO: 1]; zero tillage seeders [IDO: 1,2; IDO: 1,2]; Vallerani water harvesting system [IDO: 1; IDO: 1] <b>Flagship - Central Asia:</b> new potato varieties released in Tajikistan and under multiplication in Rasht valley [IDO: 1; IDO: 1]. In-vitro plants are multiplied in the laboratory of the Institute of Botany, Plant Physiology and Genetics, Dushanbe, and further multiplied in the highlands of Jirgatal district (Rasht valley) by the Horticultural Institute [IDO: 1; IDO: 1]. This scheme has been approved and implemented. We are now preparing the by-laws for the constitution of a Transboundary Seed Grower Association in Rasht and Kyzyl-Suu valleys for further multiplication of Elite seed category [IDO: 7; IDO: 1]		5	7	7
<b>POLICIES/REGULATIONS/ADMINISTRATIVE PROCEDURES IN VARIOUS STAGES OF DEVELOPMENT</b>					
28. Analyzed (Stage 1)	<b>Flagship - North Africa &amp; West Asia:</b> Tunisia: Review of water policies In Beni Khedache Area [IDO: 1,7; IDO: 1] Morocco: Review of evaluation of the impacts of water policies on water use and on livelihoods of small holder farmers [IDO: 1,2,7; IDO: 1,2] <a href="http://www.iwaponline.com/">http://www.iwaponline.com/</a> Syria: Analysis of policy option for valuing irrigation water in the dry areas [IDO: 2,7; IDO: 2]		1	3	3
29. Drafted and presented for public consultation (Stage 2)			0	0	2
30. Presented for legislation (Stage 3)			0	0	0
31. Passed/approved (Stage 4)	<b>Flagship - East and Southern Africa:</b> BEST: Wildlife and conservation Management Bill 2013 was passed [IDO: 7; IDO: 1,2]. The Bill supports and encourages the wildlife conservation and management as a form of land use on public, community and private land. We observed a threefold increase in the number of conservancies in the Kenya rangelands. <a href="http://www.kws.org/export/sites/kws/info/publications/acts_policies/The_wildlife_conservation_and_management_bill_2013.pdf">http://www.kws.org/export/sites/kws/info/publications/acts_policies/The_wildlife_conservation_and_management_bill_2013.pdf</a>		0	1	0
32. Under Implementation (Stage 5)			0	0	0
<b>OUTCOME ON THE GROUND</b>					

33. Hectares under improved technologies or management practices	<p><b>Flagship - North Africa &amp; West Asia:</b> El-Karak (Jordan), Tunisia, Syria, Morocco, Iraq, Karak (Tunisia), Beni Khédache (Tunisia), Zoghmar (Tunisia), Yemen, Palestine, Egypt, Iran. [IDO: 1,2,4; IDO: 1,2,4]</p> <p><b>Flagship - Central Asia:</b> Uzbekistan, Tajikistan, in Garm district (Rasht valley), in Andijan and Fergana provinces, in Jirgatal (Rasht valley) [IDO: 1; IDO: 1]</p> <p><b>Flagship - South Asia:</b> districts in west Rajasthan and Bijapur (India), in Karnataka and Andhra Pradesh (ANANTAPUR and Kurnool) [IDO: 1,2,4; IDO: 1,2,4]</p>		3,000,000	4,000,000	4,000,000
34. Farmers applying technologies or management practices	<p><b>Flagship - North Africa &amp; West Asia:</b> Zoghmar and Beni Khedache (Tunisia), in Khresha villages at El-Karak site (Jordan), in Meknes, Jordan, Morocco, Tunisia, Syria, Yemen, Palestine, Tunisia, Egypt [IDO: 1,2,3; IDO: 1,2,4]</p> <p><b>Flagship - South Asia:</b> districts in west Rajasthan and Bijapur and in Karnataka and Andhra Pradesh (ANANTAPUR and Kurnool) [IDO: 1,2,3; IDO: 1,2,4]</p>		3,000,000	4,000,000	4,000,000

## Annex 2: Gender

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	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	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)	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)
			And
			CRP targets changes in levels of gender inequality to which the CRP is or plans to contribute, with related numbers of men and women beneficiaries in main target populations
	Sex disaggregated social data has been collected in the North Africa & West Asia Flagship region. These data will be used in 2014 for a gender-differentiated analysis. The outcome will lead to increased awareness by partners to take steps reducing gender gaps in knowledge and information.		
2. Institutional architecture for integration of gender is in place	- CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS.	- 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.	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	- 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	- 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	-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
		And	And
		A CRP plan approved for capacity development in gender analysis	A CRP plan approved for capacity development in gender analysis
			And

			The CRP uses feedback provided by its M&E system to improve its integration of gender into research
	<p>A gender team has been set at the lead Center office. The team lead, facilitate and support capacity building and efforts to mainstream gender in all program activities and facilitate the development of mechanisms to monitor the performance of different research themes with regard to gender.</p> <p>The partners of the Program gathered in Lilongwe, Malawi to develop an effective gender strategy. The gender strategy workshop was held following a regional planning workshop for the Eastern &amp; Southern Africa Flagship. The strategy was presented to the CO.</p>	<p>-Participating CGIAR centers have CRP scientists with responsibility for gender in the CRP's outputs with written TORS and funds allocated to support their interaction.</p>	





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**i Dryland Systems Inception Report**

[https://apps.icarda.org/wsInternet/wsInternet.aspx/DownloadFileToLocal?filePath=Dryland\\_Systems/Dryland\\_Systems\\_Proposal.pdf&fileName=Dryland\\_Systems\\_Proposal.pdf](https://apps.icarda.org/wsInternet/wsInternet.aspx/DownloadFileToLocal?filePath=Dryland_Systems/Dryland_Systems_Proposal.pdf&fileName=Dryland_Systems_Proposal.pdf)

ii “Characterization of six sweet potato production communities, using Focus Group Discussions in Ghana” by John Kanburi and BIDZAKIN Kwabena ACHEREMU (58ps).

iii “On the role of Moroccan Institutions in Mainstreaming Gender Empowerment in the Food Legume Value Chain” by Maria Marzouk (35ps).

iv “The contribution of women and men to socio-economic processes of barley in the cultivation and production value chain – with a special focus on Morocco” by Andrea Pape-Christiansen (35ps).

“Women’s empowerment and gender equity through value chains: The example of legumes in Morocco” by Maria E. Fernandez, Aden Aw-Hassan and Latifa Mehdi (19ps).

“Understanding gender and poverty dimensions of high value agricultural commodity chains in Sou-Massaa-Draa region of southwestern Morocco” by Patricia Janzano, Shinan Kassam, and Aden Aw-Hassan (72ps).

v “Local Knowledge & Gender Impact Assessment on Agro- Pastoral Community in the BANI HASHEM HIMA SITE Jordan”. IUCN International Union for Conservation of Nature – Regional Office for West Asia (37ps).

vi “FARMERS’ PERCEPTIONS ON WATER POLICIES: A CASE STUDY FROM THE JORDANIAN BADIA Water and Livelihood Initiative (WLI)” by Samia Akroush and Roberto Telleria (15ps).

vii Gender-responsive approaches are interventions designed to meet both men’s and women’s needs to ensure increased and equitable benefit and relevance. These approaches also ensure that no harm will be done for any of the genders, by increasing workloads for example.

viii Gender-transformative approaches are interventions which are gender-responsive but also challenge the status quo that contributes to gender inequalities.

ix “Collection of secondary data and preparation of a literature review of previous and on-going studies on gender research in the Nile Delta of Egypt” by Aman Ali Elgarhi and Mervet Sedky (38 ps).

x “Identifying empowerment opportunities of rural women: The case of projects in the framework of INDH in the province of Meknes” by Abdel Rehim Bentaibi (21 ps).

## INDEX

### CRP Financial Reporting Templates

Ref	Description	Comments
<b>Budget and Financial Reports</b>		
L101	CRP Cumulative Financial Summary	
L106	CRP Annual Funding Summary	
L111	CRP Annual Financial Summary	
L121	CRP - Expenditure by Natural Classification Report	Included mainly for reconciliation purposes and to eliminate double counting of CGIAR collaboration costs; note that it is the <i>net</i> amount (i.e. expenses excluding CGIAR collaboration costs) which should be used as the total for L111 and L131
L131	CRP - Themes Report	Simplified - Source of funding no longer required; note that this report is still titled "Themes"; transition is underway and some CRPs are already recording costs by Flagship Project. If that is the case for your CRP, please change the title of the report.
<b>Analytical Financial Reports</b>		
L211	CRP Partnerships Report	

#### Notes

Most reports are for current year only. Exceptions are L101 which is multi-year (cumulative).  
All reports shown here are for individual CRP's. The Consortium Office will prepare consolidated CRP reports.

Budget figures in all of the attached forms should be the annual confirmed budget (POWB) for the year.  
W1/2 total will be as the Financing Plan notified by the Consortium Office, and W3/Bilateral the forecast prepared internally.  
Actual events since the signing of the PIAs result in the budget per PIA no longer being a meaningful measure of performance.

For reporting purposes, please delete from L121 and L131 Centers not relevant to your CRP

CRP No. 1.1 - Dryland Systems  
 Period: 01/01/2013 - 12/31/2013  
 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	1,136		324	333	1,793	1,088		281	360	1,729	48		43	(27)	64
3. CIAT	754		319		1,073	777		364		1,141	(23)		(45)	-	(68)
4. CIFOR					-					-					-
5. CIMMYT					-					-					-
6. CIP	878		108		986	867		110		977	11		(2)	-	9
7. ICARDA	11,566	12,898	33,064		57,528	8,937	7,423	17,758		34,118	2,629	5,475	15,306	-	23,410
8. ICRAF	1,054		11,103		12,157	1,054		3,201		4,255	-		7,902	-	7,902
9. ICRISAT	5,775	733	9,408		15,916	5,256	722	7,404		13,382	519	11	2,004	-	2,534
10. IFPRI					-					-					-
11. IITA					-					-					-
12. ILRI	2,357	1,137	6,966		10,460	1,893	1,487	5,321		8,701	464	(350)	1,645	-	1,759
13. IRRI					-					-					-
14. IWMI	1,150		764		1,914	1,016		721		1,737	134		43	-	177
15. WORLDFISH					-					-					-
<b>Total for CRP</b>	<b>24,670</b>	<b>14,768</b>	<b>62,056</b>	<b>333</b>	<b>101,827</b>	<b>20,888</b>	<b>9,632</b>	<b>35,160</b>	<b>360</b>	<b>66,040</b>	<b>3,782</b>	<b>5,136</b>	<b>26,896</b>	<b>(27)</b>	<b>35,787</b>
	<b>24%</b>	<b>15%</b>	<b>61%</b>	<b>0%</b>	<b>100%</b>	<b>32%</b>	<b>15%</b>	<b>53%</b>	<b>1%</b>	<b>100%</b>	<b>11%</b>	<b>14%</b>	<b>75%</b>	<b>0%</b>	<b>100%</b>

<b>CRP :</b>	<b>1.1 - Dryland Systems</b>	<b>Annual Funding</b>			
<b>Period:</b>	<b>01/01/2013 - 12/31/2013</b>				
Amounts in USD (000's)					
<b>Report Description</b>					
<b>Name of Report:</b> Annual Funding Summary					
<b>Frequency/Period:</b> Annual					
<b>Deadline:</b> Every April 15th					
<b>PART 1 - Annual FINANCE PLAN (Totals for Windows 1 and 2 combined)</b>					
Approved Level for Year - Initial Approval (as per PIA)					
Approved Level for Year - Final Amount					
<b>PART 2 - Funding Summary for Year</b>					
<b>2013 Actual Funding</b>					
		<b>Windows 1&amp;2</b>	<b>Window 3</b>	<b>Bilateral Funding</b>	<b>Total Funding</b>
1	Austria (ADA)		-	37	37
2	Arab Fund for Economic and Social Development (AFESD)		-	384	384
3	Australia (ACIAR)		3,779	258	4,037
4	Bioversity International		-	4	4
5	The Common Fund for Commodities		-	140	140
6	Consultative Group on International Agricultural Research		-	283	283
7	Centre de Coopération Internationale en Recherche Agronomique pour le Développement		-	57	57
8	China		27	-	27
9	Egypt		-	109	109
10	European Commission		-	247	247
11	Food and Agriculture Organization		-	176	176
12	Germany		-	123	123
13	Grains Development and Research Centre		-	13	13
14	India		105	-	105
15	International Crops Research Institute for the Semi-Arid Tropics		-	6	6
16	International Development Research Center		-	333	333
17	International Fund for Agricultural Development		586	3,034	3,620
18	International Institute of Tropical Agriculture		-	871	871
19	International Livestock Research Institute		-	231	231
20	International Nutrition Foundation/ United Nations University		-	11	11
21	Institut National de la Recherche Agronomique		-	24	24
22	Iran		140	-	140
23	Islamic Development Bank		-	55	55
24	Italy		-	210	210
25	Japan		-	118	118
26	Kuwait Fund		-	71	71
27	Morocco		-	70	70
28	OCP Foundation		-	189	189
29	The OPEC Fund for International Development		-	117	117
30	The Netherlands		-	286	286
31	United States Agency for International Development		296	25	321
32	United States Department of Agriculture		-	341	341
33	The CGIAR Fund	11,785			11,785
<b>Total for CRP 1.1</b>		<b>11,785</b>	<b>4,933</b>	<b>7,823</b>	<b>24,541</b>

CRP No. 1.1 - Dryland Systems  
 Period: 01/01/2013 - 12/31/2013  
 Amounts in USD (000's)

## Annual Financial Summary by Centers



### 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 2013 POWB approved budget					(b) CRP 2013 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. BIODIVERSITY	642		161	333	1,136	630		118	360	1,108	12	0	43	(27)	28
3. CIAT	376		66		442	426		160		586	(50)	0	(94)	0	(144)
4. CIFOR					0					0	0	0	0	0	0
5. CIMMYT					0					0	0	0	0	0	0
6. CIP	416				416	411				411	5	0	0	0	5
7. ICARDA	6,827	8,406	12,331		27,564	4,928	4,933	7,823		17,684	1,899	3,473	4,508	0	9,880
8. ICRAF	350		1,973		2,323	350		1,973		2,323	0	0	0	0	0
9. ICRISAT	3,997	733	4,120		8,850	3,478	722	3,129		7,329	519	11	991	0	1,521
10. IFPRI					0					0	0	0	0	0	0
11. IITA					0					0	0	0	0	0	0
12. ILRI	1,297	1,137	2,511		4,945	931	1,487	2,736		5,154	366	(350)	(225)	0	(209)
13. IRRI					0					0	0	0	0	0	0
14. IWMI	765		94		859	631		94		725	134	0	0	0	134
15. WORLD FISH					0					0	0	0	0	0	0
<b>Total for CRP</b>	<b>14,670</b>	<b>10,276</b>	<b>21,256</b>	<b>333</b>	<b>46,535</b>	<b>11,785</b>	<b>7,142</b>	<b>16,033</b>	<b>360</b>	<b>35,320</b>	<b>2,885</b>	<b>3,134</b>	<b>5,223</b>	<b>(27)</b>	<b>11,215</b>
	<b>32%</b>	<b>22%</b>	<b>46%</b>	<b>1%</b>	<b>100%</b>	<b>33%</b>	<b>20%</b>	<b>45%</b>	<b>1%</b>	<b>100%</b>	<b>26%</b>	<b>28%</b>	<b>47%</b>	<b>0%</b>	<b>100%</b>



# Annual Financial Summary by Natural Classification



CRP No. 1.1 - Dryland Systems  
 Period: 01/01/2013 - 12/31/2013  
 Amounts in USD 000's

**Report Description**

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

	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
<b>Total CRP1.1</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	4,720	1,518	5,108	145	11,491	4,209	1,336	4,134	150	9,829	511	182	974	(5)	1,662
Collaborators Costs - CGIAR Centers	270	588	45	-	903	265	108	40	-	413	5	480	5	-	490
Collaborator Costs - Partners	790	1,774	1,465	31	4,060	564	2,472	1,760	31	4,827	226	(698)	(295)	-	(767)
Supplies and services	4,819	4,107	8,996	65	17,987	3,416	1,688	6,307	91	11,502	1,403	2,419	2,689	(26)	6,485
Operational Travel	1,501	720	1,971	39	4,231	1,386	660	1,760	33	3,839	115	60	211	6	392
Depreciation	316	451	1,454	-	2,221	177	258	417	-	852	139	193	1,037	-	1,369
<b>Sub-total of Direct Costs</b>	<b>12,416</b>	<b>9,158</b>	<b>19,039</b>	<b>280</b>	<b>40,893</b>	<b>10,017</b>	<b>6,522</b>	<b>14,418</b>	<b>305</b>	<b>31,262</b>	<b>2,399</b>	<b>2,636</b>	<b>4,621</b>	<b>(25)</b>	<b>9,631</b>
Indirect Costs	2,254	1,118	2,217	53	5,642	1,768	620	1,615	55	4,058	486	498	602	(2)	1,584
<b>Total - All Costs</b>	<b>14,670</b>	<b>10,276</b>	<b>21,256</b>	<b>333</b>	<b>46,535</b>	<b>11,785</b>	<b>7,142</b>	<b>16,033</b>	<b>360</b>	<b>35,320</b>	<b>2,885</b>	<b>3,134</b>	<b>5,223</b>	<b>(27)</b>	<b>11,215</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>(270.0)</b>	<b>(588)</b>	<b>(45)</b>	<b>-</b>	<b>(903)</b>	<b>(265)</b>	<b>(108)</b>	<b>(40)</b>	<b>-</b>	<b>(413)</b>	<b>(5)</b>	<b>(480)</b>	<b>(5)</b>	<b>-</b>	<b>(490)</b>
<b>Total Net Costs</b>	<b>14,400</b>	<b>9,688</b>	<b>21,211</b>	<b>333</b>	<b>45,632</b>	<b>11,520</b>	<b>7,034</b>	<b>15,993</b>	<b>360</b>	<b>34,907</b>	<b>2,880</b>	<b>2,654</b>	<b>5,218</b>	<b>(27)</b>	<b>10,725</b>

**Amounts for each participating center below:**

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

<b>BIOVERSITY</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	369	-	-	145	514	341	-	-	150	491	28	-	-	(5)	23
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	84	31	115	-	-	84	31	115	-	-	-	-	-
Supplies and services	148	-	57	65	270	167	-	15	91	273	(19)	-	42	(26)	(3)
Operational Travel	23	-	2	39	64	21	-	6	33	60	2	-	(4)	6	4
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	<b>540</b>	<b>-</b>	<b>143</b>	<b>280</b>	<b>963</b>	<b>529</b>	<b>-</b>	<b>105</b>	<b>305</b>	<b>939</b>	<b>11</b>	<b>-</b>	<b>38</b>	<b>(25)</b>	<b>24</b>
Indirect Costs	102	-	18	53	173	101	-	13	55	169	1	-	5	(2)	4
<b>Total - All Costs</b>	<b>642</b>	<b>-</b>	<b>161</b>	<b>333</b>	<b>1,136</b>	<b>630</b>	<b>-</b>	<b>118</b>	<b>360</b>	<b>1,108</b>	<b>12</b>	<b>-</b>	<b>43</b>	<b>(27)</b>	<b>28</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Net Costs</b>	<b>642</b>	<b>-</b>	<b>161</b>	<b>333</b>	<b>1,136</b>	<b>630</b>	<b>-</b>	<b>118</b>	<b>360</b>	<b>1,108</b>	<b>12</b>	<b>-</b>	<b>43</b>	<b>(27)</b>	<b>28</b>

<b>CIAT</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	298	-	17	-	315	251	-	45	-	296	47	-	(28)	-	19
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	18	-	18	-	-	(18)	-	(18)
Supplies and services	10	-	6	-	16	103	-	48	-	151	(93)	-	(42)	-	(135)
Operational Travel	19	-	34	-	53	20	-	28	-	48	(1)	-	6	-	5
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	<b>327</b>	<b>-</b>	<b>57</b>	<b>-</b>	<b>384</b>	<b>374</b>	<b>-</b>	<b>139</b>	<b>-</b>	<b>513</b>	<b>(47)</b>	<b>-</b>	<b>(82)</b>	<b>-</b>	<b>(129)</b>
Indirect Costs	49	-	9	-	58	52	-	21	-	73	(3)	-	(12)	-	(15)
<b>Total - All Costs</b>	<b>376</b>	<b>-</b>	<b>66</b>	<b>-</b>	<b>442</b>	<b>426</b>	<b>-</b>	<b>160</b>	<b>-</b>	<b>586</b>	<b>(50)</b>	<b>-</b>	<b>(94)</b>	<b>-</b>	<b>(144)</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Net Costs</b>	<b>376</b>	<b>-</b>	<b>66</b>	<b>-</b>	<b>442</b>	<b>426</b>	<b>-</b>	<b>160</b>	<b>-</b>	<b>586</b>	<b>(50)</b>	<b>-</b>	<b>(94)</b>	<b>-</b>	<b>(144)</b>

	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
<b>CIFOR</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational Travel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Indirect Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total - All Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Net Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>CIMMYT</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational Travel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Indirect Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total - All Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Net Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>CIP</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	112	-	-	-	112	116	-	-	-	116	(4)	-	-	-	(4)
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	183	-	-	-	183	181	-	-	-	181	2	-	-	-	2
Operational Travel	27	-	-	-	27	21	-	-	-	21	6	-	-	-	6
Depreciation	25	-	-	-	25	25	-	-	-	25	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	<b>347</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>347</b>	<b>343</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>343</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4</b>
Indirect Costs	69	-	-	-	69	68	-	-	-	68	1	-	-	-	1
<b>Total - All Costs</b>	<b>416</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>416</b>	<b>411</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>411</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Net Costs</b>	<b>416</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>416</b>	<b>411</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>411</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>
<b>ICARDA</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	1,930	1,050	2,145	-	5,125	1,549	885	1,619	-	4,053	381	165	526	-	1,072
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	495	1,488	1,006	-	2,989	208	1,467	977	-	2,652	287	21	29	-	337
Supplies and services	2,336	3,883	5,826	-	12,045	1,493	1,389	3,481	-	6,363	843	2,494	2,345	-	5,682
Operational Travel	867	613	1,197	-	2,677	821	546	922	-	2,289	46	67	275	-	388
Depreciation	55	444	1,127	-	1,626	36	251	109	-	396	19	193	1,018	-	1,230
<b>Sub-total of Direct Costs</b>	<b>5,683</b>	<b>7,478</b>	<b>11,301</b>	<b>-</b>	<b>24,462</b>	<b>4,107</b>	<b>4,538</b>	<b>7,108</b>	<b>-</b>	<b>15,753</b>	<b>1,576</b>	<b>2,940</b>	<b>4,193</b>	<b>-</b>	<b>8,709</b>
Indirect Costs	1,144	928	1,030	-	3,102	821	395	715	-	1,931	323	533	315	-	1,171
<b>Total - All Costs</b>	<b>6,827</b>	<b>8,406</b>	<b>12,331</b>	<b>-</b>	<b>27,564</b>	<b>4,928</b>	<b>4,933</b>	<b>7,823</b>	<b>-</b>	<b>17,684</b>	<b>1,899</b>	<b>3,473</b>	<b>4,508</b>	<b>-</b>	<b>9,880</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Net Costs</b>	<b>6,827</b>	<b>8,406</b>	<b>12,331</b>	<b>-</b>	<b>27,564</b>	<b>4,928</b>	<b>4,933</b>	<b>7,823</b>	<b>-</b>	<b>17,684</b>	<b>1,899</b>	<b>3,473</b>	<b>4,508</b>	<b>-</b>	<b>9,880</b>
<b>ICRISAT</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	1,146	242	1,154	-	2,542	996	240	1,050	-	2,286	150	2	104	-	256
Collaborators Costs - CGIAR Centers	170	100	5	-	375	265	100	365	-	365	5	-	5	-	10
Collaborator Costs - Partners	295	74	137	-	506	268	73	47	-	388	27	1	90	-	118
Supplies and services	1,158	159	1,651	-	2,968	1,058	158	1,236	-	2,452	100	1	415	-	516
Operational Travel	365	87	280	-	732	316	86	252	-	654	49	1	28	-	78
Depreciation	236	7	293	-	536	116	7	274	-	397	120	-	19	-	139
<b>Sub-total of Direct Costs</b>	<b>3,470</b>	<b>669</b>	<b>3,520</b>	<b>-</b>	<b>7,659</b>	<b>3,019</b>	<b>664</b>	<b>2,859</b>	<b>-</b>	<b>6,542</b>	<b>451</b>	<b>5</b>	<b>661</b>	<b>-</b>	<b>1,117</b>
Indirect Costs	527	64	600	-	1,191	459	58	270	-	787	68	6	330	-	404
<b>Total - All Costs</b>	<b>3,997</b>	<b>733</b>	<b>4,120</b>	<b>-</b>	<b>8,850</b>	<b>3,478</b>	<b>722</b>	<b>3,129</b>	<b>-</b>	<b>7,329</b>	<b>519</b>	<b>11</b>	<b>991</b>	<b>-</b>	<b>1,521</b>
<b>LESS Coll Costs CGIAR Centers</b>	<b>(270.0)</b>	<b>(100)</b>	<b>(5)</b>	<b>-</b>	<b>(375)</b>	<b>(265)</b>	<b>(100)</b>	<b>-</b>	<b>-</b>	<b>(365)</b>	<b>(5)</b>	<b>-</b>	<b>(5)</b>	<b>-</b>	<b>(10)</b>
<b>Total Net Costs</b>	<b>3,727</b>	<b>633</b>	<b>4,115</b>	<b>-</b>	<b>8,475</b>	<b>3,213</b>	<b>622</b>	<b>3,129</b>	<b>-</b>	<b>6,964</b>	<b>514</b>	<b>11</b>	<b>986</b>	<b>-</b>	<b>1,511</b>

	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
<b>IFPRI</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational Travel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total - All Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>LESS Coll Costs CGIAR Centers</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Net Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>IITA</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational Travel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total - All Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>LESS Coll Costs CGIAR Centers</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Net Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>ILRI</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	204	226	1,121	-	1,551	379	211	749	-	1,339	(175)	15	372	-	212
Collaborators Costs - CGIAR Centers	-	488	-	-	488	-	8	-	-	8	-	480	-	-	480
Collaborator Costs - Partners	-	212	238	-	450	88	932	634	-	1,654	(88)	(720)	(396)	-	(1,204)
Supplies and services	799	65	683	-	1,547	250	141	754	-	1,145	549	(76)	(71)	-	402
Operational Travel	84	20	122	-	226	81	28	216	-	325	3	(8)	(94)	-	(99)
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	<b>1,087</b>	<b>1,011</b>	<b>2,164</b>	-	<b>4,262</b>	<b>798</b>	<b>1,320</b>	<b>2,353</b>	-	<b>4,471</b>	<b>289</b>	<b>(309)</b>	<b>(189)</b>	-	<b>(209)</b>
Indirect Costs	210	126	347	-	683	133	167	383	-	683	77	(41)	(36)	-	-
<b>Total - All Costs</b>	<b>1,297</b>	<b>1,137</b>	<b>2,511</b>	-	<b>4,945</b>	<b>931</b>	<b>1,487</b>	<b>2,736</b>	-	<b>5,154</b>	<b>366</b>	<b>(350)</b>	<b>(225)</b>	-	<b>(209)</b>
<b>LESS Coll Costs CGIAR Centers</b>	-	(488)	-	-	(488)	-	(8)	-	-	(8)	-	(480)	-	-	(480)
<b>Total Net Costs</b>	<b>1,297</b>	<b>649</b>	<b>2,511</b>	-	<b>4,457</b>	<b>931</b>	<b>1,479</b>	<b>2,736</b>	-	<b>5,146</b>	<b>366</b>	<b>(830)</b>	<b>(225)</b>	-	<b>(689)</b>
<b>IRRI</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational Travel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-total of Direct Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total - All Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>LESS Coll Costs CGIAR Centers</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Net Costs</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>IWMI</b>	<b>POWB Approved Budget</b>					<b>Actual</b>					<b>Unspent/Variance</b>				
Personnel	479	-	33	-	512	395	-	33	-	428	84	-	-	-	84
Collaborators Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Partners	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and services	120	-	34	-	154	99	-	34	-	133	21	-	-	-	21
Operational Travel	59	-	10	-	69	49	-	10	-	59	10	-	-	-	10
Depreciation	-	-	2	-	2	-	-	2	-	2	-	-	-	-	2
<b>Sub-total of Direct Costs</b>	<b>658</b>	-	<b>79</b>	-	<b>737</b>	<b>543</b>	-	<b>79</b>	-	<b>622</b>	<b>115</b>	-	-	-	<b>115</b>
Indirect Costs	107	-	15	-	122	88	-	15	-	103	19	-	-	-	19
<b>Total - All Costs</b>	<b>765</b>	-	<b>94</b>	-	<b>859</b>	<b>631</b>	-	<b>94</b>	-	<b>725</b>	<b>134</b>	-	-	-	<b>134</b>
<b>LESS Coll Costs CGIAR Centers</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Net Costs</b>	<b>765</b>	-	<b>94</b>	-	<b>859</b>	<b>631</b>	-	<b>94</b>	-	<b>725</b>	<b>134</b>	-	-	-	<b>134</b>



**CRP No. 1.1 - Dryland Systems**  
**Period: 01/01/2013 - 12/31/2013**  
 Amounts in USD 000's

## Annual Financial Summary by Flagship Projects - Region



### Report Description

<b>Name of Report:</b>	Financial Summary by Flagship Projects - Regions
<b>Frequency/Period:</b>	Annual
<b>Deadline:</b>	Every April 15th

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
<b>Summary Report - by Flagship Projects</b>			
North Africa and West Asia	17,602	12,363	5,239
Central Asia	3,176	2,067	1,109
Western Africa	5,930	3,948	1,982
Eastern and Southern Africa	10,585	10,158	427
South Asia	9,242	6,784	2,458
CRP Management/Coordination	-	-	-
<b>Total - All Costs</b>	<b>46,535</b>	<b>35,320</b>	<b>11,215</b>
<b>AFRICA RICE</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>BIOVERSITY</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa	766	676	90
Eastern and Southern Africa			-
South Asia	370	432	(62)
CRP Management/Coordination			-
<b>Total - All Costs</b>	<b>1,136</b>	<b>1,108</b>	<b>28</b>
<b>CIAT</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa	442	586	(144)
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	<b>442</b>	<b>586</b>	<b>(144)</b>

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
<b>CIFOR</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	-	-	-

<b>CIMMYT</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	-	-	-

<b>CIP</b>			
North Africa and West Asia			-
Central Asia	249	223	26
Western Africa	167	188	(21)
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	416	411	5

<b>ICARDA</b>			
North Africa and West Asia	17,602	12,363	5,239
Central Asia	2,604	1,571	1,033
Western Africa	2,499	941	1,558
Eastern and Southern Africa	598	471	127
South Asia	4,261	2,338	1,923
CRP Management/Coordination			-
<b>Total - All Costs</b>	27,564	17,684	9,880

<b>ICRISAT</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa	2,213	1,832	381
Eastern and Southern Africa	2,655	2,199	456
South Asia	3,982	3,298	684
CRP Management/Coordination			-
<b>Total - All Costs</b>	8,850	7,329	1,521



	POWB Approved	Current Year Actual Expenditures	Unspent Budget
<b>IFPRI</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	-	-	-

<b>IITA</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	-	-	-

<b>ILRI</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa	172	216	(44)
Eastern and Southern Africa	4,306	4,359	(53)
South Asia	467	579	(112)
CRP Management/Coordination			-
<b>Total - All Costs</b>	4,945	5,154	(209)

<b>IRRI</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	-	-	-

<b>IWMI</b>			
North Africa and West Asia			-
Central Asia	323	273	50
Western Africa	113	95	18
Eastern and Southern Africa	261	220	41
South Asia	162	137	25
CRP Management/Coordination			-
<b>Total - All Costs</b>	859	725	134

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
<b>WORLD AGROFORESTRY CENTRE (ICRAF)</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa	2,323	2,323	-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	<b>2,323</b>	<b>2,323</b>	<b>-</b>

<b>WORLD FISH</b>			
North Africa and West Asia			-
Central Asia			-
Western Africa			-
Eastern and Southern Africa			-
South Asia			-
CRP Management/Coordination			-
<b>Total - All Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>

CRP No. 1.1 - Dryland Systems  
 Period: 01/01/2013 - 12/31/2013  
 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 "X.X"				Actual Expenses - This Year				
7. ICARDA				Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	AREA	Agricultural Research and Extension Authority	Yemen	-	-	32	-	32
2	ARC	Agricultural Research Center	Sudan	-	-	19	-	19
3	DBARC	Debre Birhan Agricultural Research Center	Ethiopia	-	-	9	-	9
4	GCSAR	General Commission for Scientific Agricultural Rese	Syrian Arab Republic	-	-	40	-	40
5	INRAA	Institut National de la Recherche Agronomique d'A	Algeria	-	-	1	-	1
6	INGC	Institut National des Grandes Cultures	Tunisia	-	-	1	-	1
7	NCARE	National Center for Agricultural Research and Exte	Jordan	-	17	6	-	23
8	OAR	Office of Agricultural Research	Iraq	-	-	3	-	3
9	SARI	Sinana Agriculture Research Center	Ethiopia	-	-	5	-	5
10	KRASS	Khorezm Rural Advisory Support Service	Uzbekistan	2	-	-	-	2
11	KRICH	Crop Husbandry Karakalpakstan, Uzbekistan	Uzbekistan	5	-	-	-	5
12	ARI	Agricultural Research Institute	Ethiopia	2	-	-	-	2
13	AARC	Areka Agricultural Research Center	Ethiopia	2	-	-	-	2
14	AMU	Arba Minch University	Ethiopia	3	-	-	-	3
15	JRC	Jinka Research Center	Ethiopia	3	-	-	-	3
16	TAAS	Tajik Academy Agricultural Science	Tajikistan	-	28	-	-	28
17	ARF	Agricultural Research Foundation	United States	-	6	-	-	6
18	UA	University of Adelaide	Australia	-	651	-	-	651
19	LRI	Livestock Research Institute	Tajikistan	-	-	5	-	5
20	KNAU	Kyrgyz National Agrarian University	Kyrgyzstan	-	-	2	-	2
21	CACSARC	CACSARC-kg" Public Foundation	Kyrgyzstan	-	-	4	-	4
22	ARC	ARC Egypt	Egypt	30	24	33	-	87
23	INRA	Institut National de la Recherche Agronomique	Morocco	-	-	9	-	9
24	UWA	University of Western Australia	Australia	-	374	34	-	408
25	CAZRI	Central Arid Zone Research Institute	India	-	10	11	-	21
26	ARC	Agricultural Research Center Iraq	Iraq	-	-	47	-	47
27	INAT	Institut National Agronomique de Tunisie	Tunisia	-	23	-	-	23
28	NWRC	The National Water Research Center	Egypt	-	27	-	-	27
29	IWMI-Egypt	International Water Management Institute	Egypt	-	84	-	-	84
30	PU	Purdue University	United States	30	-	-	-	30
31	RI	RI of Market Reforms	Uzbekistan	32	-	-	-	32
32	RIPI	Research Institute of Petroleum Industry	Uzbekistan	-	-	1	-	1
33	AFESD	Arab Fund for Economic and Social Development	Kuwait	-	-	4	-	4
34	NARC	National Agriculture Research Center (NARC)	-	-	-	1	-	1
35	MESADM	MESADM	-	-	-	7	-	7
36	TSRD	Tagore Society for Rural Development	India	-	-	7	-	7
37	ICAR	Indian Council of Agricultural Research	India	-	-	7	-	7
38	KVK	Krishi Vigyan Kendra, Dhalai	India	-	-	8	-	8
39	BCKC	Comptroller Bidhan Chandra Krishi Viswavidyalaya	India	-	-	8	-	8
40	BKCV	Comptroller Bidhan Chandra Krishi Viswavidyalaya	India	-	-	4	-	4
41	UBKV	Uttar Banga Krishi Viswavidyalaya (UBKV)	India	-	-	2	-	2
42	BMJ	Bolpur Manab Jamin	India	-	-	8	-	8
43	RVSKVV	Comptroller Rajmata Vijayaraje Scindia Krishi Vish	India	-	-	6	-	6
44	EIAR	Ethiopian Institute of Agricultural Research	Ethiopia	11	-	13	-	24
45	ARARI	Amhara Regional Agricultural Research Institute	Ethiopia	6	-	37	-	43
46	NARI	National Agricultural Research Institute	Eritrea	-	-	12	-	12
47	UoM	University of Mosul	Iraq	-	218	75	-	293
48	MAF	Ministry of Agriculture and Fisheries	Oman	-	-	26	-	26
49	MEW	Ministry of Environment & Water	United Arab Emirates	-	-	20	-	20
50	PAAFR	Public Authority for Agricultural Affairs & Fish Resc	Kuwait	-	-	11	-	11
51	AADME	Agriculture Affairs Department Ministry of Environ	Qatar	-	-	13	-	13
52	MMAA	Ministry of Municipal Affairs & Agriculture	Bahrain	-	-	14	-	14
53	MoA	Ministry of Agriculture	Saudi Arabia	-	-	14	-	14
54	BARI	Barani Agricultural Research Institute	Pakistan	-	-	62	-	62
55	NCEG	National Center of Excellence in Geology	Pakistan	-	-	70	-	70
56	SAWCRI	Soil and Water Conservation Research Institute	Pakistan	-	-	61	-	61
57	SSRI-NARC	Social Science Research Institute , National Agricul	Pakistan	-	-	56	-	56
58	WMRC-UAF	Water Management Research Center - University	Pakistan	-	-	63	-	63
59	WRII-NARC	Water Resources Research Institute -National Agri	Pakistan	-	-	70	-	70
60	ICRAF	WorldAgroforestry	Kenya	75	-	-	-	75
61		Miscellaneous		7	5	36	-	48
<b>Total for CRP</b>				<b>208</b>	<b>1,467</b>	<b>977</b>	<b>-</b>	<b>2,652</b>

**Report Description**

Name of Report	CRP Funding Statement, Windows 1 and 2
Reporting Line	Lead Center Report to Consortium Office
Frequency/Period	Every 3 months

**PART 1 - REPORT OF LEAD CENTER**

**Opening Balance - 1 January** 1,369

**W1 Receipts from Consortium Office (actual dates)**

24-Jul-13	36	
28-Aug-13	3,164	
4-Oct-13	2,813	
<b>Total Receipts</b>		6,013

**W2 Receipts from Consortium Office (actual dates)**

28-Feb-13	677	
1-Jul-13	2,630	
22-Aug-13	409	
23-Sep-13	2,744	6,460
<b>Total Receipts</b>		13,842

**Transfers to CG Partners**

Bioversity	275	
CIAT	94	
CIP	321	
ICRISAT	2,443	
ILRI	865	
IWMI	288	
World Agroforestry	255	
<b>Total Disbursements</b>		4,541

**Expenditure by Lead Center (ICARDA)** 4,930

**Unliquidated Advances to Partners** -

**Funds held - end of Period** 4,371

**PART 2 - REPORT OF CGIAR CENTERS**

	<b>Funds held - start of Period</b>	<b>Transfers from Lead Center</b>	<b>Expenditure</b>	<b>Unliquidated Advances to Partners</b>	<b>Funds held - end of Period</b>
Bioversity	(86)	275	(631)	-	(442)
CIAT	(69)	94	(426)	-	(401)
CIP	(111)	321	(410)	-	(200)
ICRISAT	(443)	2,443	(3,478)	-	(1,478)
ILRI	(167)	865	(931)	-	(233)
IWMI	(97)	288	(631)	-	(440)
World Agroforestry	(176)	255	(350)	-	(271)
<b>Totals</b>	<b>(1,149)</b>	<b>4,541</b>	<b>(6,857)</b>	<b>-</b>	<b>(3,465)</b>