



CGIAR Research Program on Dryland Cereals

2012 Annual Performance Report

*Submitted to the CGIAR Consortium on behalf of all Partners
by ICRISAT (Lead Center)
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RESEARCH
PROGRAM ON
DrylandCereals



IN
PARTNERSHIP
WITH



and public and private institutes and
organizations, governments, and
farmers worldwide

I. CRP PERFORMANCE MONITORING REPORT FOR JULY-DECEMBER 2012

A. Key Messages

This report covers the initial six months of the CGIAR Research Program on Dryland Cereals (referred to hereafter simply as DrylandCereals), that is, 1 July through 31 December 2012.

The year 2012 was rich with R4D (research-for-development) progress in initiatives that migrated into the new CGIAR Research Program on DrylandCereals on 1 July. Highlights include increased momentum for hybrid sorghum in West and Central Africa, offering potential 35% yield gains; demonstrably strengthened national seed systems increasing the sustainable out-scaling of impacts from crop improvement; crucial support to the new nation of the Republic of Southern Sudan; rapid takeoff of finger millet breeding, including two new varietal releases; breeding and crop management progress on difficult stresses such as drought, *Striga* and low soil phosphorus in all four cereals; the increasingly effective use of molecular methods in plant breeding, with notably larger roles played by strengthened national partners; and 40% yield gains for 25,000 farmers growing post-rainy season sorghum in Maharashtra, India.

The seven new CGIAR-approved crop x region [Product Lines](#) of DrylandCereals are used as the reporting framework for R4D activities in the remainder of this Report. Elaborating on just two of these noteworthy successes (others are elaborated in subsequent sections):

Product Line 1 - Sorghum in West Africa: Farmer-to-farmer training for Striga control in the Sahel: *Striga* is a parasitic weed that causes large yield losses in sorghum and millet grown on low-fertility soils, especially those cultivated by poor smallholders who cannot afford much (if any) fertilizer. DVDs illustrating methods of managing *Striga* in eight West/Central African languages were [produced and released](#) for dissemination during the review period, targeting 200,000 farmers in Niger, Nigeria, Ghana and Mali. The videos are being disseminated through Farmers' Field Schools, rural radio stations, farmers' organizations, training institutes, and mobile digital cinema among others. Video viewings at night permit the participation of women and children so that entire villages are empowered. Three levels of distribution of the DVDs are being monitored for impact assessment.

Product Line 7 - Post-rainy season sorghum in South Asia – major yield and income gains: As a result of close partnership between ICRISAT and several Indian state and national institutions, some 25,000 farmers cultivating post-rainy season sorghum in India's western state of Maharashtra are [benefiting](#) from the adoption of integrated options of improved varieties and management practices. Half of these farmers operate on landholdings of two hectares or less. Average grain yields have increased by 40% and fodder yields by 20% since 2010. Net farm income increased by US\$78 per hectare of sorghum grown.

A major purpose of forming CGIAR Research Programs is to *enhance synergies across crops and partner institutions*. DrylandCereals approaches this objective through knowledge-sharing among five cross-cutting [Strategic Components](#). For example, seed systems are a common constraint across all the dryland cereal crops. Overcoming high costs of improved seed through the dissemination of [small packs](#) in sorghum and pearl millet is one of many examples of cross-crop knowledge sharing. Similarly, cross-learning in data targeting, molecular breeding, crop physiology (e.g. [1](#), [2](#)), gender issues and post-harvest value addition are underway or being planned.

Moving from R4D to the establishment of essential management, governance and operational functions of the new DrylandCereals Program:

Partner consultations, proposal revision and approval. Consultation, shared understanding and commitment were viewed as essential for effectively aligning and integrating the R4D agendas of partners into DrylandCereals. Consultations conducted during the reporting period must be seen as a continuation of the prior two years of intensive consultation and planning carried out in the development of the previous four revisions of the DrylandCereals proposal. A meeting of all key stakeholders (CGIAR and non-CGIAR) was conducted during 23-26 April 2012 to discuss the revisions of the fourth draft requested by ISPC in February. Another two rounds of revision-consultation followed, including another meeting of key stakeholders during 19-22 July. The fifth and final revision of the Program [proposal](#) was completed during July-August 2012 and was submitted on 15 August 2012 to the CGIAR Consortium Office. The Fund Council approved the comprehensive 185-page proposal on 16 October 2012.

Recruiting management, staff and governance positions. The recruitment of a Director was initiated in mid-2012 but could not be completed during the period due to the deferred final approval and funding of DrylandCereals. Appointments to the three oversight committees (Steering Committee, Independent Advisory Committee, and Research Management Committee) were initiated in late 2012 following the approval in October, and will be finalized in early 2013.

Financial summary: total expenditure, percentage allocated to gender research and total funding (from all sources, including bilateral and window 3) compared to expected budget

Budget as per annual financial plans						Actual Expenses				
Centers	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total Funding	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total Funding
ICARDA	1,397	-	1,875	-	3,272	854	-	419	-	1,273
GCP	-	-	-	-	-	-	-	-	-	-
ICRISAT	3,863	196	5,120	-	9,179	2,361	140	3,657	-	6,158
Total	5,260	196	6,995	-	12,451	3,215	140	4,076	-	7,431
Percentage	42%	2%	56%	0%	100%	43%	2%	55%	0%	100%

Total budget projected for the period was under-spent by 40% due to two main factors.

- i) Uncertainty about Program status and funding prior to its formal approval on October 16 necessitated a conservative spending posture prior to that date, including the deferral of long-term commitments such as the hiring of personnel.
- ii) Violent conflict in ICARDA's host country Syria disrupted numerous planned activities, as did conflict in Mali for ICRISAT. Movements in-country and the participation of national partner institutions in joint activities were severely affected.

B. Impact Pathway and Intermediate Development Outcomes (IDOs)

DrylandCereals is in the process of developing its CRP-specific Intermediate Development Outcomes following the guidelines provided by the Consortium. These will build on the [impact pathways](#) and partnerships articulated in the proposal.

C. Progress along the Impact Pathway

C.1 Narrative of major achievements, by Theme

Product Line 1 – Sorghum for West Africa

West and Central Africa now have the R4D elements in place needed to support a hybrid sorghum industry. New photoperiod-sensitive [guinea-race hybrids](#) were grown by approximately 10,000 farmers during the 2012 cropping season. The on-farm results confirm a remarkable 35% increase in grain yield under a wide range of growing conditions. Positive feedback has been received from

farmers on productivity and grain quality. A rural radio campaign attracted much interest. Efforts are underway to strengthen national capacities for producing the hybrid seed. Hybrid seed production doubled from 2011, to 20 tons in 2012. A hybrid seed production manual plus specific protocols for the seven preferred hybrids has been distributed through training programs for farmer-seed producers. Dissemination of hybrid seeds in [affordable small packs](#) is very effective in increasing their uptake.

Low available phosphorus (P) is a major and widespread constraint to productivity in the region, but field screening for P efficiency is difficult. A five-year study of breeding methods for this trait in sorghum was completed in 2012. Direct selection for grain yield under low phosphorus conditions was 12% more efficient than indirect selection under high phosphorus conditions. The results attracted much interest and were [published](#) in Crop Science Journal and highlighted in the November issue of [Crops, Soils and Agronomy \(CSA\) News](#).

Progress in the dissemination of Striga management techniques to 200,000 Sahelian sorghum farmers was described earlier.

Product Line 2 – Pearl millet for West and East Africa

Progress in seed systems development in Niger has enabled about 10% of annual demand for certified seed of pearl millet be met. Incentivized by the availability of improved varieties from DrylandCereals as well as outreach and training activities, several private seed companies have become established that are able to multiply both breeder and foundation classes of seed in large quantities. Several farmer unions have improved member's seed production skills to a level that meets certification standards for large-scale seed production and have earned the confidence of seed buyers in their local areas.

Product Line 3 – Sorghum for East Africa

Four high-yielding, high-quality sorghum varieties resistant to the parasitic weed *Striga* and tolerant to drought were released in Sudan. The achievement was the result of partnership with DrylandCereals using modern molecular breeding techniques. The varieties were bred by the national program ARC through marker-assisted backcrossing of *Striga*-resistant lines supplied by DrylandCereals.

The sorghum variety KARI Mtama-1 was released in Tanzania, in the Republic of Southern Sudan, and in Kenya, exhibiting as much as 30% grain yield advantage over previously available varieties in marginal areas. As the first release of a sorghum variety in the Republic of Southern Sudan, this is an important milestone as the new country aspires to replace its former dependency on emergency relief seed with its own varietal releases. In Tanzania, this is the first sorghum variety released since 2004.

Product Line 4 – Finger millet for East and Southern Africa

Tanzania released its first two finger millet varieties ever, U15 and P224. The varieties had earlier been released in Uganda and Kenya. They are widely adapted, high-yielding and produce high-quality grain. Additional finger millet germplasm was screened and resistance identified for blast disease (76 lines) and *Striga* (14 lines). These will be further tested and the best lines will be utilized as parents in finger millet breeding.

Finger millet germplasm was profiled for nutrients; accessions with much higher micronutrient content were identified. KNE 628 grain contains 300 ppm of iron and 17 ppm of zinc, compared to the current varietal average of 78 ppm iron and 12 ppm zinc.

Fertilizer micro-dosing was tested on finger millet. Micro-dosing at a rate of 20 kg nitrogen per hectare increased grain yields by 20-40% and has been recommended to farmers.

Product Line 5 – Barley for Africa and Asia

A low-input feed barley nursery (110 lines) was assembled and evaluated for drought tolerance at Marchouch station, Morocco under just 196 mm of rainfall this season. Thirty-eight lines exhibited significantly higher grain and straw yield and will be further tested and promoted in North Africa. In addition, 331 advanced lines of naked barley were tested for adaptation and drought tolerance; 93 were selected for yield evaluation and seed increase for further testing by collaborators in the region. A total of 101 advanced lines of naked barley with improved drought, pest and disease tolerance and superior agronomic traits have now been identified and made available for testing by collaborators globally.

Product Line 6 – Pearl millet for East Africa and South Asia

Farmer-preferred hybrids of pearl millet were identified for the Indian States of Rajasthan, Haryana and Gujarat through large-scale trials conducted in farmer's fields in drought-prone environments. The seed production of identified hybrids was [conducted](#) through a partnership with the private sector (HOPE Project Year 3 Annual Report). A popular hybrid was improved for foliar blast resistance and quality of grain and stover by transferring a major blast resistance gene complex (quantitative trait loci, or QTL) through marker-assisted breeding. Genetic variants of pearl millet were identified with capacity to restrict water losses under high vapor pressure deficit conditions. QTLs for different water use traits were identified, including some that were [found](#) to be co-located with a yield-enhancing terminal drought tolerance QTL.

Product Line 7 – Sorghum for South Asia

As highlighted earlier, interventions substantially increased grain and fodder yields for more than 25,000 post-rainy season sorghum farmers in Maharashtra, India. A genetic modification technique, *Agrobacterium*-mediated genetic transformation, was optimized for sorghum. Mechanisms conveying high transpiration efficiency have been discovered, allowing a more targeted cultivar improvement (ICRISAT ACIAR Reports 2012). Breeding [strategies](#) for high iron and zinc content in grain were [improved](#). Genetic diversity of breeding materials was enhanced for breeding sweet sorghum and high-biomass sorghum. A Genotyping-By-Sequencing pipeline for breeding is now operational at ICRISAT.

C.2 Progress towards outputs

Product Line 1 – Sorghum for West Africa

Hybrid sorghum holds enormous potential for West and Central Africa. ICRISAT, IER and CIRAD finalized the development of improved hybrid guinea sorghum lines from 29 diverse donor parents, using three elite lines as recurrent parents: Lata-3 the best guinea-race pollinator at ICRISAT, Grinkan, and Keninkeni - two recently improved varieties developed by national partner IER. Lines are being selected in both normal and low-phosphorus conditions.

A database of farmer-managed yield trials of newly released sorghum varieties and hybrids and agronomic practices for growing them is being updated annually, and is being formatted by [aWhere](#) to provide world-class public accessibility over the internet.

A series of on-farm trials conducted by women in their own fields is revealing that high iron and zinc content sorghum varieties are also well adapted to low fertility conditions. The effect of wood ash on grain productivity (30%) is consistent, confirming the extremely poor fertility situation in these fields.

Product Line 2 – Pearl millet for West and East Africa

National breeding programs in Mali, Burkina Faso and Nigeria have completed 1-2 cycles of progeny based recurrent selection in diversified populations, based on local germplasm, with introgressions

of genetic material from other West-African countries. The most commonly used type of progeny were full-sib progenies, which allow for short breeding cycles.

Two varieties (GB 8735 and Tabi) derived from distinct sources of West African land race germplasm have been confirmed independently to contain high levels of iron and zinc in their grain, qualifying them to be labeled as 'biofortified'. This has generated much interest from nutritional assistance agencies; seed requests, as well collaboration with nutrition-oriented development programs, are increasing.

Product Line 3 – Sorghum for East Africa

Discussions were initiated with artisans to develop small threshing equipment capable to handle sorghum, finger millet and pearl millet. Threshers will reduce post-harvest drudgery for women. Ten prototypes are currently being tested.

Product Line 4 – Finger millet for East and Southern Africa

Striga-resistant and micronutrient-dense parent lines of finger millet were crossed to farmer-preferred varieties to initiate breeding for these traits.

A finger millet emasculation technique was validated. This will go a long way in enabling breeders effectively make crosses, which has been the main stumbling block in finger millet breeding.

Product Line 5 – Barley for Africa and Asia

In view of the worsening security situation in Syria, ICARDA's barley team was relocated to Morocco. The move has the advantages of addressing the breeding of drought tolerant germplasm for North Africa (where barley is cultivated on about 4 million hectares).

DrylandCereals assisted Ethiopia in developing its strategy for barley research and development in support of smallholder farmers. Joint barley research-for-development priorities were also established with partners in North Africa, Iran and India.

Advanced breeding lines with higher levels of tolerance to drought and biotic stresses were identified and are being used in the breeding program.

Product Line 6 – Pearl millet for East Africa and South Asia

Physiology research is [identifying](#) genetic mechanisms that restrain evaporative water loss at high vapor pressure deficit, which is thought to play a major role in drought adaptation of pearl millet. Using one recombinant inbred line mapping population, major QTLs for 12 component traits for terminal drought tolerance were elucidated and mapped to seven linkage groups.

Major QTLs for grain iron and zinc density were discovered and mapped in bi-parental recombinant inbred line mapping populations.

Product Line 7 – Sorghum for South Asia

High transpiration efficiency variants are ready for use as donors in hybrid populations. Stay-green QTLs increase transpiration efficiency but this depends on the recurrent background.

Proof-of-concept studies confirmed that stay-green QTL introgression leads to increased grain and stover yield without jeopardizing stover quality. A method for *Agrobacterium*-mediated genetic transformation of sorghum will be available for routine applications in developing transgenics for the selected traits. Genomic selection models were initiated to capture major and minor-effect QTLs for traits of interest.

Sorghum hybrids with tolerance to charcoal rot have been identified for further evaluation at farmers' fields. Eight promising actinomycetes were identified with antagonistic potential against the charcoal rot agent, *Macrophomina phaseolina*.

Genomic regions responsible for plant height and branch length in sorghum were identified (Morris and Ramu et al. PNAS, 2013), as well as QTL for stem borer resistance. Genotyping data for all mapping populations was generated.

C.3 Progress towards the achievement of outcomes

Product Line 1 – Sorghum for West Africa

The set of high quality Farmer-to-Farmer videos on ‘*Fighting Striga*’ have been made available to farmers, as highlighted earlier. The videos have attracted interest from development agencies across Africa, leading to their translation into 12 additional African languages, including Arabic and Swahili.

Previously tested via Farmer Field Schools, integrated *Striga* and soil fertility management practices are consistently demonstrating improved profitability, mostly due to increased cowpea hay yields. The limited availability of quality cowpea seed, though is constraining adoption.

Farmer seed cooperatives in Mali are growing in membership. Seed production is expanding beyond cereal crops, and they are acquiring loans and other local support to manage the storage, processing and marketing of their growing stocks of seeds. They are diversifying sale points for seed to increase sales volume.

‘Field School’ type lesson plans combining nutrition, food processing and crop diversity training for women with young children have been developed.

Product Line 2 – Pearl millet for West and East Africa

The recently released pearl millet variety ‘Super SOSAT’ has entered into the seed production and dissemination stage in Nigeria via collaboration with the Lake Chad Research Institute in Maiduguri and the agricultural development programs and NGOs in several states in northern Nigeria. Some of the NGO’s are focused on women’s activities and have engaged in seed production and grain processing.

Led by INRAN-Niger with technical assistance from DrylandCereals, the bio-control of the pearl millet head miner is being widely tested using a locally-prevalent species of parasitoid wasp. Development partners in Niger, Mali and Burkina Faso are investing in training of facilitators and the dissemination of appropriate information materials.

[Affordable mini-packs](#) of seed of varieties and hybrids are being sold for wide-scale distribution. Three year’s data from monitoring mini-pack buyers in Mali, Burkina Faso and Niger for pearl millet and sorghum has been assembled, providing both qualitative and quantitative feedback.

NARS partners have been trained in screening germplasm for resistance to the most important disease of pearl millet, downy mildew. Plans for establishing the facilities in national programs are under development.

Product Line 3 – Sorghum for East Africa

Proof-of-concept experiments have established that QTLs for *Striga* resistance are effective in diverse genetic backgrounds.

Pre-basic and basic seed of KARI Matma-1 was produced and 3.2 tons were made available to the three East African countries in which the variety has been released.

Product Line 4 – Finger millet for East and Southern Africa

More than six tons of pre-basic and basic seed of U15 and P224 were made available to NARS in Tanzania, Kenya and Uganda in 2012.

Participatory Variety Selection (PVS) of improved technologies (improved seed, row planting and micro-dosing) [resulted](#) in 20-40% increase in yield in Kenya, Uganda, Tanzania and Ethiopia. PVS and demonstrations have resulted in many farmers adopting the improved technologies.

Integrated *Striga* management technology combining resistant varieties, fertilizer micro-dosing and trap crops was demonstrated to more than 5,000 farmers in Uganda, Kenya, Tanzania and Ethiopia. The technology increased yields by up to 50%.

Product Line 5 – Barley for Africa and Asia

Seed promotions of released varieties are in progress in DrylandCereals target countries. Significant varietal adoption has been achieved in Ethiopia and India.

Product Line 6 – Pearl millet for East Africa and South Asia

Responding to requests, ICRISAT provided seed of 6,245 pearl millet seed lots to partners (1,304 to the public sector and 4,941 to private sector). On farm demonstration of improved technology (improved seed and use of both N and P fertilizers) [resulted](#) in 75% yield increases in the target village clusters in Haryana, Rajasthan and Gujarat.

Crop management technology (improved seed + seed treatment with fungicide + balanced use of nitrogen and phosphorus fertilizer) was demonstrated on 10,780 farmers' fields in Rajasthan, Haryana and Gujarat States in India. About 30 trials on weed control using herbicide, and on micronutrient application ($ZnSO_4$) were also carried out. Micronutrient plus herbicide application increased grain yield by 13%.

Product Line 7 – Sorghum for South Asia

Shoot fly-resistant sorghum and high-iron and zinc-containing parental lines have been shared with public and private sector partners.

Training materials were developed on improved production practices, IPM and INM practices to help enhance the awareness of sweet sorghum cultivation and its uses.

Advanced sweet sorghum and high biomass sorghum hybrid parents, varieties and hybrids were provided for use by partners in both public and private sectors. Biomass sorghum materials have been identified for large-scale cultivation in Andhra Pradesh and Maharashtra.

Seven cultivars (lines and hybrids) entered the All India Coordinated Sorghum Improvement Project testing program in 2012.

C.4 Progress towards Impact

Major impact of dryland cereals improvement was updated in the ASTI-FARA [study](#) commissioned by CGIAR-SPIA on 'Diffusion of Improved Varieties in Africa'. The 2011 initial report estimated the following improved-variety adoption rates as of 2010: sorghum 14%, pearl millet 17%, and barley 22%. The study considered these rates to be relatively lower than for other cereal crops such as maize (67%). In drawing lessons, the study points out that high-adoption crop/country combinations in maize are supported by hybrid seed systems and well connected to markets.

While noting that the maize industry has been stimulated by large fertilizer, seed and other subsidies in many African countries as well as benefiting from massive global R4D, DrylandCereals concurs with the need to vigorously pursue the strengthening of hybrid seed systems and smallholder-friendly market [connections](#) for the dryland cereals as well. DrylandCereals is actively engaged in these areas as highlighted throughout this report and commits to continue to do so in the CGIAR-approved proposal. ICRISAT has been an early and vocal [advocate](#) for pro-poor market-oriented development and brings this orientation into DrylandCereals.

However, DrylandCereals also cautions that millions of subsistence farmers in the drylands who lack market orientation and access at present should not be abandoned by the CGIAR. DrylandCereals will continue to also attend to the needs of the poorest of the poor who are mired in subsistence farming, because they are those most in need yet are most overlooked by other suppliers of R4D.

DrylandCereals' experiences described in this Annual Report have revealed a number of additional lessons for fostering impact.

Seed systems are a widespread constraint, but this problem can be overcome through innovative technical assistance delivered through close partnerships, e.g. participatory varietal selection and adapting seed delivery to farmers' means via small packs. Hybrid dryland cereals will have enormous impact in Africa when seed production and dissemination constraints are overcome.

The direct demonstration of innovations to farmers in their fields is an effective way to increase adoption and impact. Demonstrations can achieve large scale by partnering with development agencies such as farmer groups, NGOs and the private sector.

To improve child nutrition, household demonstrations involving women on food processing and crop diversification have proven effective.

Studies of the adoption of micro-dosing illustrate that farmers customize technologies to fit their own situation. Farmers are part of the innovation partnership.

Innovations translate much more rapidly into impact when they are remunerative to the smallholders. Subsidy programs should not favor certain few major cereal crops only, which leads to dietary nutritional imbalance, handicaps the market competitiveness of dryland cereals, and disenfranchises the dryland poor. Subsidies should rather encourage more diverse and nutritious diets.

D. GENDER RESEARCH ACHIEVEMENTS

Women in the drylands tend to be poorer and less empowered than men. Women also play the major role in nurturing the next generation of dryland farmers, particularly in ensuring their health and nutrition in the critical early childhood years. For both of these reasons, DrylandCereals [emphasizes](#) women's welfare in its choices of priorities and approaches. DrylandCereals analyzes differences in gender roles in the cereals value chain and then designs R4D approaches that especially deliver benefits to women.

DrylandCereals inherits a long [tradition](#) of leadership and innovation in the [inclusion](#) of women farmers in crop improvement R4D through the approach known as participatory varietal selection ([PVS](#)), from its convening centers ICARDA and ICRISAT. This tradition [continues](#) unabated within DrylandCereals. PVS is standard operating procedure for all crops. Innovations to disseminate seed of sorghum and pearl millet in very [affordable small packs](#) make it much easier for women to purchase and test new varieties.

DrylandCereals also continues to strive to include as many women as possible in all training events. For example, in West Africa the *Striga* management training initiative took into consideration women and children's viewing habits and coached development partners to be sure to show the DVD videos in the evening when women are more likely to be able to watch.

As researchers in recent years have broadened their approach to crop improvement to encompass poverty reduction and household nutrition objectives, approaches to increasing women's participation and benefits are also broadening. For example, since women are the main preparers of food in the household, researchers realize that women are key to achieving the adoption and use of new biofortified (micronutrient-rich) varieties. The nutritional benefits of these varieties are substantial but not visible to the eye, so awareness-raising is required.

In Mali in 2012 in collaboration with the NGO AMEDD and AVRDC, DrylandCereals [conducted](#) a series of R4D initiatives with 1,261 women to help improve the production and household preparation of more nutritious foods. On-farm trials run by women in their own fields to demonstrate that high iron and zinc biofortified sorghum varieties are also well adapted to low fertility conditions (women are often allocated the lowest-fertility lands for cultivation). The

initiative also helped these women find [achievable ways to improve soil fertility](#) (p. 30 section 2.6 in ref) such as the use of wood ash, very small doses of fertilizer, and intercropping with groundnut (known as a “women’s crop”). The women have been pleased with the resulting increase in sorghum yields because it provides for the extra meal that children need during the day, and bridges the hungry season.

Women are overburdened with time-consuming and often arduous household tasks, so drudgery-reducing innovations in the cereal value chain can make an important contribution to their welfare. Efforts to introduce [milling machines](#) in West Africa are reducing the arduous, time-consuming task of hand-milling. In Eastern Africa, DrylandCereals initiated discussions with artisans to develop smallholder-appropriate equipment that can reduce the hard labor involved in threshing sorghum, finger millet and pearl millet.

D.1 Gender equality targets

In our recently-approved proposal and [summarized](#) on our website, DrylandCereals commits to specific gender related objectives and targets under each Product Line, copied here for convenient reference:

- Obtaining gender-disaggregated data and gender sensitive analyses on dryland cereal value chains;
- Improving the range of genetic variation and the selection protocols used by DrylandCereals breeding activities to develop improved cultivars that can create market opportunities to benefit women, particularly opportunities that lead to empowerment and improved livelihoods;
- Increasing “whole plant value” for primary producers, mainly women, of these crops;
- Developing crop management interventions from a gender sensitive perspective;
- Increasing women farmers access to seed of new dryland cereal varieties; and
- Enhancing women’s benefit from new business opportunities, not only from the reduction of drudgery.

D.2 Institutional architecture for gender mainstreaming

Gender sensitivity [discussions](#), monitoring and annual reviews by stakeholders and gender-specific audits are periodically organized to review progress toward mainstreaming pro-women approaches. In addition, DrylandCereals aims for gender-balanced staffing and encourages the participation of female researchers and students in all of its activities and partnerships.

E. PARTNERSHIPS BUILDING ACHIEVEMENTS

The CRP is a global alliance between ICRISAT and ICARDA, and key participants in the CGIAR’s Generation Challenge Program (GCP); the Indian Council of Agricultural Research (ICAR); the Iranian Agricultural Research, Education and Extension Organization (AREEO); L’institut de recherché agronomique pour le developpement (IRD) and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD) in France; the USAID-supported dryland cereals Collaborative Research Support Program (currently INTSORMIL); and more than 70 other agricultural research and extension programs in Africa and Asia; 15 advanced research institutes (ARIs); 20 non-governmental organizations (NGOs), civil society organizations (CSOs) and Farmer Organizations; and 30 private sector companies.

F. CAPACITY BUILDING

Regional in-country human capacity development in the CRP on DrylandCereals is integrated across all Product Lines and Strategic Components including provision for degree and non-degree level training, workshops and conferences, and the development of distance learning products. Special

efforts are made to strengthen and empower extension staff and NGOs at grass-roots level. Training programs reflect a back-to-basics approach to offset current deficits in skilled personnel for conventional breeding, agronomy, crop protection and farming systems. All capacity development activities have due regard to gender balance, recognizing the key role of women along all levels of the crop value-chain.

G. RISK MANAGEMENT

The major risks for the success of the CRP on DrylandCereals include the fact that the CRP is targeting agricultural regions where weather, soils, infrastructure, social strife and policies create a difficult environment for smallholder farmers to succeed. While such conditions make progress and impacts difficult, the partners in the CRP remain committed to achieving success.

Many of the countries where DrylandCereals proposes (and needs) to work are experiencing or have experienced recently social and political volatility. In such countries, DrylandCereals will especially emphasize partnerships and safety nets such as maintaining backup reserves of germplasm, data and even expertise (through partnerships and networks) in the wider region and beyond. These reserves can be of enormous value in helping restore capacities once conflict ends.

Continued government policy bias against the support of smallholder farmers in marginal areas, even in the face of growing evidence of the value and importance of their enterprises, is an important risk. DrylandCereals partners will identify local, regional and even international 'champions' who have the ear of key policymakers and who might, over time, be able to influence the course of political decisions impinging on dryland cereal production, processing and marketing.

H. LESSONS LEARNED

Several important lessons learned for increasing DrylandCereals' impact were provided in section C.4. Overall we are excited about our R4D partnership, achievement and impacts trajectory within this fledgling Program. We do not minimize the challenges ahead in reducing hunger, poverty, malnutrition and environmental degradation in the most difficult agro-ecosystems that the CGIAR faces. But we are on the road to stronger and broader partnerships, more effective cross-sharing of expertise and experiences, and increased impact that will surely result from this new Program.

The first six months of DrylandCereals' existence should be seen in the context of extraordinary institutional dynamics and uncertainty that prevailed during the last six months of 2012, including delayed Program approval and budgeting which impeded partner institutions' ability to fully execute Program plans. On top of this of course was the impact of open warfare in countries where major bases of the Program's work are hosted, resulting in disruption of partner institutions, dislocation of staff and restrictions on in-country travel. We expect that resolutions to these unusual situations, and/or adjustments to those that persist, will substantially reduce their impacts on DrylandCereals' operations in the coming years.

With this context in mind, DrylandCereals provides estimates of the indicators in Table 1 for the reporting period. These are based primarily on on-going projects where such metrics are available. As DrylandCereals is implemented fully in 2013, it will establish firmer metrics for each of the required indicators. These will provide clearer measures of success for each of the Product Lines.

Annex 1: CRP indicators of progress, with glossary and targets

CRPs concerned by this indicator	Indicator	Glossary/guidelines for measuring the indicator	Deviation narrative (if actual is more than 10% away from target)	2012		2013	2014
				Target (if available for 2012)	Actual	Target	Target
KNOWLEDGE, TOOLS, DATA							
All	1. Number of flagship "products" produced by CRP	These are frameworks and concepts that are significant and complete enough to have been highlighted on web pages, publicized through blog stories, press releases and/or policy briefs. They are significant in that they should be likely to change the way stakeholders along the impact pathway allocate resources and/or implement activities. They should be products that change the way these stakeholders think and act. Tools, decision-support tools, guidelines and/or training manuals are not included in this indicator			2	2	4
All	2. % of flagship products produced that have explicit target of women farmers/NRM managers	The web pages, blog stories, press releases and policy briefs supporting indicator #1 must have an explicit focus on women farmers/NRM managers to be counted			100	50	50
All	3. % of flagship products produced that have been assessed for likely gender-disaggregated impact	Reports/papers describing the products should include a focus on gender-disaggregated impacts if they are to be counted			100	50	50
All	4. Number of "tools" produced by CRP	These are significant decision-support tools, guidelines, and/or training manuals that are significant and complete enough to have been highlighted on web pages, publicized through blog stories, press releases and/or policy briefs. They are significant in that they should be likely to change the way stakeholders along the impact			3	5	10

		pathway allocate resources and/or implement activities						
All	5. % of tools that have an explicit target of women farmers	The web pages, blog stories, press releases and policy briefs supporting indicator #4 must have an explicit focus on women farmers/NRM managers to be counted			100	50	50	
All	6. % of tools assessed for likely gender-disaggregated impact	Reports/papers describing the products should include a focus on gender-disaggregated impacts if they are to be counted			100	50	50	
All	7. Number of open access databases maintained by CRP				1	3	4	
All	8. Total number of users of these open access databases				25	200	300	
All	9. Number of publications in ISI journals produced by CRP				24	45	45	
1,2,3, 4, 6	10. Number of strategic value chains analyzed by CRP				1	2	4	
1,5,6,7	11. Number of targeted agro-ecosystems analysed/characterised by CRP	Use the Millennium Ecosystem Assessment (MEA) typology of cultivated systems and of forests and woodland systems (MEA, 2005, Ecosystems and Human Well-Being: Current State and Trends, Volume 1) to define these agro-ecosystems and specify the regions concerned						
1,5,6,7	12. Estimated population of above-mentioned agro-ecosystems							
CAPACITY ENHANCEMENT AND INNOVATION PLATFORMS								
All	13. Number of trainees in short-term programs facilitated by CRP (male)	The number of individuals to whom significant knowledge or skills have been imparted through interactions that are intentional, structured, and purposed for imparting knowledge or skills should be counted. This includes farmers, ranchers, fishers, and other primary sector producers who receive training in a variety of best practices in productivity, post-harvest management, linking to markets, etc. It also includes rural entrepreneurs, processors, managers and traders receiving training in application of new technologies, business management, linking to markets, etc., and training to extension specialists, researchers, policymakers and			1325	1000	1000	

		others who are engaged in the food, feed and fiber system and natural resources and water management. Include training on climate risk analysis, adaptation, mitigation, and vulnerability assessments, as it relates to agriculture. Training should include food security, water resources management/IWRM, sustainable agriculture, and climate change resilience .						
All	14. Number of trainees in short-term programs facilitated by CRP (female)	(see above, but for female)			556	500	750	
All	15. Number of trainees in long-term programs facilitated by CRP (male)	The number of people who are currently enrolled in or graduated in the current fiscal year from a bachelor's, master's or Ph.D. program or are currently participating in or have completed in the current fiscal year a long term (degree-seeking) advanced training program such as a fellowship program or a post-doctoral studies program. A person completing one long term training program in the fiscal year and currently participating in another long term training program should be counted only once.			15	20	20	
All	16. Number of trainees in long-term programs facilitated by CRP (female)	(see above, but for female)			13	20	20	
1,5,6,7	17. Number of multi-stakeholder R4D innovation platforms established for the targeted agro-ecosystems by the CRPs	To be counted, a multi-stakeholder platform has to have a clear purpose, generally to manage some type of tradeoff/conflict among the different interests of different stakeholders in the targeted agro-ecosystems, and inclusive and clear governance mechanisms, leading to decisions to manage the variety of perspectives of stakeholders in a manner satisfactory to the whole platform.						
	TECHNOLOGIES/PRACTICES IN VARIOUS STAGES OF DEVELOPMENT							
All	18. Number of technologies/NRM practices under research in the CRP (Phase I)	Technologies to be counted here are agriculture-related and NRM-related technologies and innovations including those that address climate change adaptation and mitigation. Relevant technologies include but are not limited to: <ul style="list-style-type: none"> • Mechanical and physical: New land preparation, harvesting, 			2230	750	750	

		<p>processing and product handling technologies, including biodegradable packaging</p> <ul style="list-style-type: none"> • Biological: New germplasm (varieties, breeds, etc.) that could be higher-yielding or higher in nutritional content and/or more resilient to climate impacts; affordable food-based nutritional supplementation such as vitamin A-rich sweet potatoes or rice, or high-protein maize, or improved livestock breeds; soil management practices that increase biotic activity and soil organic matter levels; and livestock health services and products such as vaccines; • Chemical: Fertilizers, insecticides, and pesticides sustainably and environmentally applied, and soil amendments that increase fertilizer-use efficiencies; • Management and cultural practices: sustainable water management; practices; sustainable land management practices; sustainable fishing practices; Information technology, improved/sustainable agricultural production and marketing practices, increased use of climate information for planning disaster risk strategies in place, climate change mitigation and energy efficiency, and natural resource management practices that increase productivity and/or resiliency to climate change. IPM, ISFM, and PHH as related to agriculture should all be included as improved technologies or management practices. <p>New technologies or management practices under research counted should be only those under research in the current reporting year. Any new technology or management practice under research in a previous year but not under research in the reporting year should not be included.</p>					
All	19. % of technologies under research that have an explicit target of women farmers	The papers, web pages, blog stories, press releases and policy briefs supporting indicator #x must have an explicit focus on women farmers/NRM managers to be counted				50	75
All	20. % of technologies under research that have been assessed for likely gender-disaggregated impact	Reports/papers describing the products should include a focus on gender-disaggregated impacts if they are to be counted				50	75

1,5,6,7	21 Number of agro-ecosystems for which CRP has identified feasible approaches for improving ecosystem services and for establishing positive incentives for farmers to improve ecosystem functions as per the CRP's recommendations	Use the Millennium Ecosystem Assessment (MEA) typology of cultivated systems and of forests and woodland systems (MEA, 2005, Ecosystems and Human Well-Being: Current State and Trends, Volume 1) to define these agro-ecosystems; identify the regions if possible					
1,5,6,7	22. Number of people who will potentially benefit from plans, once finalised, for the scaling up of strategies	Indicate the potential number of both women and men					
All, except 2	23. Number of technologies /NRM practices field tested (phase II)	Under "field testing" means that research has moved from focused development to broader testing and this testing is underway under conditions intended to duplicate those encountered by potential users of the new technology. This might be in the actual facilities (fields) of potential users, or it might be in a facility set up to duplicate those conditions.			600	700	700
1,5,6,7	24. Number of agro-ecosystems for which innovations (technologies, policies, practices, integrative approaches) and options for improvement at system level have been developed and are being field tested (Phase II)	Use the Millennium Ecosystem Assessment (MEA) typology of cultivated systems and of forests and woodland systems (MEA, 2005, Ecosystems and Human Well-Being: Current State and Trends, Volume 1) to define these agro-ecosystems and specify the regions where field testing is underway					
1,5,6,7	25. % of above innovations/approaches/options that are targeted at decreasing inequality between men and women						
1,5,6,7	26. Number of published research outputs from CRP						

	utilised in targeted agro-ecosystems						
All, except 2	27. Number of technologies/NRM practices released by public and private sector partners globally (phase III)	In the case of crop research that developed a new variety, e.g., the variety must have passed through any required approval process, and seed of the new variety should be available for multiplication. The technology should have proven benefits and be as ready for use as it can be as it emerges from the research and testing process. Technologies made available for transfer should be only those made available in the current reporting year. Any technology made available in a previous year should not be included.			7	15	15
POLICIES IN VARIOUS STAGES OF DEVELOPMENT							
All	28. Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)	Number of agricultural enabling environment policies / regulations / administrative procedures in the areas of agricultural resource, food, market standards & regulation, public investment, natural resource or water management and climate change adaptation/mitigation as it relates to agriculture that underwent the first stage of the policy reform process i.e. analysis (review of existing policy / regulation / administrative procedure and/or proposal of new policy / regulations / administrative procedures). Please count the highest stage completed during the reporting year – don't double count for the same policy.			1	3	4
All	29. Number of policies / regulations / administrative procedures drafted and presented for public/stakeholder consultation (Stage 2) that underwent the second stage of the policy reform process. The second stage includes public debate and/or consultation with stakeholders on the proposed new or revised policy / regulation / administrative procedure.			0	0	1
All	30. Number of policies / regulations / administrative procedures presented for legislation (Stage 3)	: ... underwent the third stage of the policy reform process (policies were presented for legislation/decreed to improve the policy environment for smallholder-based agriculture.)			0	0	1
All	31. Number of policies /	: ... underwent the fourth stage of the policy reform process			0	0	1

	regulations / administrative procedures prepared passed/approved (Stage 4)	(official approval (legislation/decreed) of new or revised policy / regulation / administrative procedure by relevant authority).						
All	32. Number of policies / regulations / administrative procedures passed for which implementation has begun (Stage 5)	: ...completed the policy reform process (implementation of new or revised policy / regulation / administrative procedure by relevant authority)			0	0	0	
OUTCOMES ON THE GROUND								
All	33. Number of hectares under improved technologies or management practices as a result of CRP research	Indicate the regions where this is occurring and whether the application of technologies is on a new or continuing area			20,000 in WCA 15,000 in ESA 15,000 in WA and NA 30,000 in SA	100,000 in WCA 75,000 in ESA 75,000 in WA and NA 150,000 in SA	150,000 in WCA 100,000 in ESA 100,000 in WA and NA 200,000 in SA	
All	34. Number of farmers and others who have applied new technologies or management practices as a result of CRP research	Indicate the regions where this is occurring and whether the application of technologies is on a new or continuing area and indicate: 34 (a) number of women farmers concerned 34(b) number of male farmers concerned			10,000 in WCA 5000 in ESA 30,000 in WA and NA 25,000 in SA	250,000 in WCA 255,000 in ESA 190,000 in WA and NA 600,000 in SA	375,000 in WCA 340,000 in ESA 250,000 in WA and NA 800,000 in SA	

Annex 2: Performance indicators for gender mainstreaming with targets defined

Performance Indicator	CRP performance approaches requirements	CRP performance meets requirements	CRP performance exceeds requirements
1. Gender inequality targets defined	Sex-disaggregated social data is being collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations 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)	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs) 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
2. Institutional architecture for integration of gender is in place	<ul style="list-style-type: none"> - CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS. - 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 	<ul style="list-style-type: none"> - CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORS and funds allocated to support their interaction. - Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the gender equality implications of the CRP's flagship research products as per the Gender Strategy -CRP M&E system has protocol for tracking progress on integration of gender in research <p>And</p> <p>A CRP plan approved for capacity development in gender analysis</p>	<p>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.</p> <ul style="list-style-type: none"> - 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 <p>A CRP plan approved for capacity development in gender analysis</p> <p>The CRP uses feedback provided by its M&E system to improve its integration of gender into research</p>

Annex 3: CRP Financial Reports

1. Report L101 - Annual CRP Financial Summary – by CG Participant
2. Report L102 – Cumulative CRP Financial Summary – CG Participant
3. Report L111 - CRP Annual Finance Plan Summary (by Center, Windows 1 and 2)
4. Report L121 - CRP Expenditure by natural classification- by CG Center
5. Report L131 – CRP Expenditure by Theme
6. Report L201 - CRP Bilateral Grants Summary - by CG Center
7. Report L211 - CRP Partnerships Report- by CG Center
8. Report L401 - CRP Funding Statement – Windows 1 and 2

Report Description L101

Name of Report CRP Cumulative Financial Summary
 Reporting Line Lead Center Report to Consortium Office
 Frequency/Period Every 6 months

Report L101

Period 01 July 2012 - 31 December 2012

CRP : Dryland Cereals

(a) Cumulative budget per annual financial plans**(b) Actual Expenses - Cumulative****(c) Variance - Cumulative**

Centers	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
ICARDA	1,397	-	1,875	-	3,272	854	-	419	-	1,273	543	-	1,456	-	1,999
GCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICRISAT	3,863	196	5,120	-	9,179	2,361	140	3,657	-	6,158	1,502	56	1,463	-	3,021
Total	5,260	196	6,995	-	12,451	3,215	140	4,076	-	7,431	2,045	56	2,919	-	5,020
Percentage	42%	2%	56%	0%	100%	43%	2%	55%	0%	100%	41%	1%	58%	0%	100%

Report Description

Name of Report
Reporting Line
Frequency/Period

L106

CRP Annual Funding Summary
Lead Center Report to Consortium Office
Every 6 months

Period 1 July 2012 - 31 December 2012

CRP

Dryland Cereals

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

Approved Level for Year - Initial Approval
Approved Level for Year - Final Amount

-
-

PART 2 - Funding Summary for Year**CRP 2012 Actual Funding**

	Window 1	Window 2	Window 3	Bilateral funding	Total Funding
AARD			-	49	49
AFESD			-	12	12
Aga Khan Foundation			-	3	3
ASARECA			-	85	85
Australia			-	25	25
Bill and Melinda Gates Foundation			-	2057	2,057
Canada			-	14	14
CFC			-	121	121
CGIAR			-	2	2
CIRAD			-	14	14
Egypt - ARC			-	3	3
European Commission			140	130	270
FAO			-	41	41
FARA			-	57	57
GCP			-	194	194
Germany			-	280	280
IER			-	2	2
IFAD			-	107	107
IFPRI			-	1	1
ILRI			-	27	27
Impulsora Agricola, S.A. de C.V. (IASA)			-	90	90
India			-	258	258
Italy			-	26	26
Japan			-	174	174
McKnight			-	174	174
Netherlands			-	71	71
Philippines			-	24	24
USAID			-	34	34
Others			-	1	1
Totals for CRP	-	-	140	4,076	4,216

Report Description L111

Name of Report CRP Annual Financial Summary
 Reporting Line Lead Center Report to Consortium Office
 Frequency/Period Every 6 months

Report L111

Period 01 July 2012 - 31 December 2012

(a) CRP2012 Fin plan approved budget

Centers	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total Funding
ICARDA	1,397	-	1,875	-	3,272
GCP	-	-	-	-	-
ICRISAT	3,863	196	5,120	-	9,179
Total for CRP	5,260	196	6,995	-	12,451

(b) CRP 2012 Expenditure

Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total Funding
854	-	419	-	1,273
-	-	-	-	-
2,361	140	3,657	-	6,158
3,215	140	4,076	-	7,431

(c) Variance this Year

Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total Funding
543	-	1,456	-	1,999
-	-	-	-	-
1,502	56	1,463	-	3,021
2,045	56	2,919	-	5,020

Percentage	42%	2%	56%	0%	100%
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43%	2%	55%	0%	100%
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41%	1%	58%	0%	100%
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Report Description	L121
Name of Report	CRP Financial Report - Expenditure by natural classification (by Center)
Reporting Line	Lead Center Report to Consortium Office
Frequency/Period	Every 6 months

Report L121

CRP Dryland Cereals

Period 01 July 2012 - 31 December 2012

ICARDA	Annual budget					Actual Expenses - This year					Unspent Budget				
	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total
Personnel	467	-	593	-	1,060	319	-	100	-	419	148	-	493	-	641
Collaborator Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Others	100	-	136	-	236	-	-	68	-	68	100	-	68	-	168
Supplies and Services	450	-	564	-	1,014	358	-	112	-	470	92	-	452	-	544
Operational Travel	112	-	205	-	317	33	-	80	-	113	79	-	125	-	204
Depreciation	35	-	174	-	209	2	-	17	-	19	33	-	157	-	190
Sub-total of Direct Costs	1,164	-	1,672	-	2,836	712	-	377	-	1,089	452	-	1,295	-	1,747
Indirect Costs	233	-	203	-	436	142	-	42	-	184	91	-	161	-	252
Total - all Costs	1,397	-	1,875	-	3,272	854	-	419	-	1,273	543	-	1,456	-	1,999

GCP	Annual budget					Actual Expenses - This year					Unspent Budget				
	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total
Personnel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplies and Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational Travel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total of Direct Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total - all Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICRISAT	Annual budget					Actual Expenses - This year					Unspent Budget				
	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total
Personnel	1,494	15	1,610	-	3,119	473	12	1,150	-	1,635	1,021	3	460	-	1,484
Collaborator Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Others	49	25	758	-	832	49	25	758	-	832	-	-	-	-	-
Supplies and Services	1,161	84	1,643	-	2,888	1,014	52	957	-	2,023	147	32	686	-	865
Operational Travel	307	20	403	-	730	117	14	288	-	419	190	6	115	-	311
Depreciation	305	52	66	-	423	302	37	47	-	386	3	15	19	-	37
Sub-total of Direct Costs	3,316	196	4,480	-	7,992	1,955	140	3,200	-	5,295	1,361	56	1,280	-	2,697
Indirect Costs	547	-	640	-	1,187	406	-	457	-	863	141	-	183	-	324
Total - all Costs	3,863	196	5,120	-	9,179	2,361	140	3,657	-	6,158	1,502	56	1,463	-	3,021

Totals for CRP	Annual budget					Actual Expenses - This year					Unspent Budget				
	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2 funds	Window 3	Bilateral funding	Center Funds	Total
Personnel	1,961	15	2,203	-	4,179	792	12	1,250	-	2,054	1,169	3	953	-	2,125
Collaborator Costs - CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collaborator Costs - Others	149	25	894	-	1,068	49	25	826	-	900	100	-	68	-	168
Supplies and Services	1,611	84	2,207	-	3,902	1,372	52	1,069	-	2,493	239	32	1,138	-	1,409
Operational Travel	419	20	608	-	1,047	150	14	368	-	532	269	6	240	-	515
Depreciation	340	52	240	-	632	304	37	64	-	405	36	15	176	-	227
Sub-total of Direct Costs	4,480	196	6,152	-	10,828	2,667	140	3,577	-	6,384	1,813	56	2,575	-	4,444
Indirect Costs	780	-	843	-	1,623	548	-	499	-	1,047	232	-	344	-	576
Total - all Costs	5,260	196	6,995	-	12,451	3,215	140	4,076	-	7,431	2,045	56	2,919	-	5,020

Report Description	L131
Name of Report	CRP Themes Report (by Center, and Funding Source)
Reporting Line	Lead Center Report to Consortium Office
Frequency/Period	Every 6 months

Period 01 July 2012 - 31 December 2012

CRP 3.6

ICARDA	Annual Budget					(a) Actual Expenses - This year					Unspent Budget				
	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
PL1 Sorgham in WCA	301	-	229	-	530	126	-	1	-	127	175	-	228	-	403
PL2 Pearl millet in WCA and ESA	422	-	657	-	1,079	394	-	270	-	664	28	-	387	-	415
PL3 Sorgham in ESA	190	-	381	-	571	135	-	41	-	176	55	-	340	-	395
PL3 Finger millet in ESA	268	-	211	-	479	106	-	15	-	121	162	-	196	-	358
PL5 Barley in NA,CWA and SA	216	-	397	-	613	93	-	92	-	185	123	-	305	-	428
PL6 Pearl millet in ESA and SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL7 Sorgham in SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gender Strategies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRP Management/Coordination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total - all Costs	1,397	-	1,875	-	3,272	854	-	419	-	1,273	543	-	1,456	-	1,999

GCP	Annual Budget					(a) Actual Expenses - This year					Unspent Budget				
	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
PL1 Sorgham in WCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL2 Pearl millet in WCA and ESA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL3 Sorgham in ESA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL3 Finger millet in ESA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL5 Barley in NA,CWA and SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL6 Pearl millet in ESA and SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL7 Sorgham in SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gender Strategies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRP Management/Coordination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total - all Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICRISAT	Annual Budget					(a) Actual Expenses - This year					Unspent Budget				
	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
PL1 Sorgham in WCA	476	29	768	-	1,273	352	21	548	-	921	124	8	220	-	352
PL2 Pearl millet in WCA and ESA	540	33	870	-	1,443	399	24	622	-	1,045	141	9	248	-	398
PL3 Sorgham in ESA	508	31	819	-	1,358	375	22	585	-	982	133	9	234	-	376
PL3 Finger millet in ESA	476	29	768	-	1,273	351	22	549	-	922	125	7	219	-	351
PL5 Barley in NA,CWA and SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL6 Pearl millet in ESA and SA	571	35	922	-	1,528	423	25	658	-	1,106	148	10	264	-	422
PL7 Sorgham in SA	508	31	819	-	1,358	376	22	585	-	983	132	9	234	-	375
Gender Strategies	96	8	154	-	258	71	4	110	-	185	25	4	44	-	73
CRP Management/Coordination	688	-	-	-	688	14	-	-	-	14	674	-	-	-	674
Total - all Costs	3,863	196	5,120	-	9,179	2,361	140	3,657	-	6,158	1,502	56	1,463	-	3,021

Summary Report - by CG Center	Annual Budget					(a) Actual Expenses - This year					Unspent Budget				
	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
ICARDA	1,397	-	1,875	-	3,272	854	-	419	-	1,273	543	-	1,456	-	1,999
GCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICRISAT	3,863	196	5,120	-	9,179	2,361	140	3,657	-	6,158	1,502	56	1,463	-	3,021
Grand Total	5,260	196	6,995	-	12,451	3,215	140	4,076	-	7,431	2,045	56	2,919	-	5,020

Summary Report - by Theme	Annual Budget					(a) Actual Expenses - This year					Unspent Budget				
	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
PL1 Sorgham in WCA	777	29	997	-	1,803	478	21	549	-	1,048	299	8	448	-	755
PL2 Pearl millet in WCA and ESA	962	33	1,527	-	2,522	793	24	892	-	1,709	169	9	635	-	813
PL3 Sorgham in ESA	698	31	1,200	-	1,929	510	22	626	-	1,158	188	9	574	-	771
PL3 Finger millet in ESA	744	29	979	-	1,752	457	22	564	-	1,043	287	7	415	-	709
PL5 Barley in NA,CWA and SA	216	-	397	-	613	93	-	92	-	185	123	-	305	-	428
PL6 Pearl millet in ESA and SA	571	35	922	-	1,528	423	25	658	-	1,106	148	10	264	-	422
PL7 Sorgham in SA	508	31	819	-	1,358	376	22	585	-	983	132	9	234	-	375
Gender Strategies	96	8	154	-	258	71	4	110	-	185	25	4	44	-	73
CRP Management/Coordination	688	-	-	-	688	14	-	-	-	14	674	-	-	-	674
Total - all Costs	5,260	196	6,995	-	12,451	3,215	140	4,076	-	7,431	2,045	56	2,919	-	5,020

Report Description L201
Report L201

Name of Report CRP Financial Report - Bilateral Grants (by Center)
 Reporting Line Lead Center Report to Consortium Office
 Frequency/Period Every 6 months

CRP Nr Dryland Cereals

Period **01 July 2012 - 31 December 2012**

Total all CRP		Expenditure		
		Annual Budget	Actual Expenses this Year	Variance
	Window 3			
	European Commission	196	140	56
	Sub total	196	140	56
	Bilateral			
	AARD	84	49	35
	AFESD	401	12	389
	Aga Khan Foundation	4	3	1
	ASARECA	119	85	34
	Australia	16	25	(9)
	Bill and Melinda Gates Foundation	2,880	2,057	823
	Canada	20	14	6
	CFC	169	121	48
	CGIAR	687	2	685
	CIRAD	20	14	6
	Egypt-ARC	239	3	236
	EPSDS	103	-	103
	European Commission	86	130	(44)
	FAO	39	41	(2)
	FARA	80	57	23
	GCP	272	194	78
	Germany	415	280	135
	IER	3	2	1
	IFAD	63	107	(44)
	IFPRI	118	1	117
	ILRI	38	27	11
	Impulsora Agricola, S.A. de C.V. (IASA)	38	90	(52)
	India	398	259	139
	Italy	34	25	9
	Japan	244	174	70
	McKnight	244	174	70
	Netherlands	98	71	27
	Philippines	34	24	10
	USAID	48	34	14
	Others	1	1	-
	Sub total	6,995	4,076	2,919
	Totals for CRP	7,191	4,216	2,975

ICARDA		Expenditure		
		Annual Budget	Actual Expenses this Year	Variance
	Window 3			
		-	-	-
		-	-	-
	Sub total	-	-	-
	Bilateral			
	AARD	84	49	35
	AFESD	401	12	389
	Australia	12	22	(10)
	BASF Germany	23	-	23
	CGIAR	687	2	685
	Egypt - ARC	239	3	236
	EPSDS	103	-	103
	European Commission	8	74	(66)
	FAO	8	19	(11)
	IFAD	63	107	(44)
	IFPRI	119	1	118
	Impulsora Agricola, S.A. de C.V. (IASA)	38	90	(52)
	India	56	15	41
	Italy	34	25	9
	Sub total	1,875	419	1,456
	Totals for CRP	1,875	419	1,456

Report Description L201

Report L201

Name of Report CRP Financial Report - Bilateral Grants (by Center)
 Reporting Line Lead Center Report to Consortium Office
 Frequency/Period Every 6 months

CRP Nr Dryland Cereals

Period 01 July 2012 - 31 December 2012

GCP		Expenditure		
		Annual Budget	Actual Expenses this Year	Variance
	Window 3	-	-	-
		-	-	-
	Sub total	-	-	-
	Bilateral	-	-	-
		-	-	-
		-	-	-
	Sub total	-	-	-
	Totals for CRP	-	-	-

ICRISAT		Expenditure		
		Annual Budget	Actual Expenses this Year	Variance
	Window 3			
	European Commission	196	140	56
	Sub total	196	140	56
	Bilateral			
	Aga Khan Foundation	4	3	1
	ASARECA	119	85	34
	Australia	4	3	1
	Bill and Melinda Gates Foundation	2,880	2,057	823
	Canada	20	14	6
	European Commission	78	56	22
	CFC	169	121	48
	CIRAD	20	14	6
	FAO	31	22	9
	FARA	80	57	23
	GCP	272	194	78
	Germany	392	280	112
	IER	3	2	1
	ILRI	38	27	11
	India	342	244	98
	Japan	243	174	69
	McKnight	243	174	69
	Netherlands	99	71	28
	Philippines	34	24	10
	USAID	48	34	14
	Others	1	1	-
	Sub total	5,120	3,657	1,463
	Totals for CRP	5,316	3,797	1,519

Report Description

L211

Name of Report: CRP Partnerships Report
 Reporting Line: Lead Center Report to Consortium Office
 Frequency/Period: Every 6 months

Report L211

Period 01 July 2012 - 31 December 2012

Center	Institute	Country	Annual Budget					Actual Expenses - This Year					Unspent Budget				
			Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total
ICARDA	INRA Morocco	Morocco	-	-	100	-	100	-	-	50	-	50	-	-	50	-	50
	Tagore Society for Rural Development	Morocco	-	-	36	-	36	-	-	18	-	18	-	-	18	-	18
	Sub-total for center		-	-	136	-	136	-	-	68	-	68	-	-	68	-	68
GCP			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sub-total for center		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICRISAT	SRI	China	-	-	15	-	15	-	-	15	-	15	-	-	-	-	-
	BGI	China	49	-	-	-	49	49	-	-	-	49	-	-	-	-	-
	Sokoine University of Agriculture	Tanzania	-	25	-	-	25	-	25	-	-	25	-	-	-	-	-
	Fuma Gaskiya	Niger	-	-	5	-	5	-	-	5	-	5	-	-	-	-	-
	Union Hareybane	Niger	-	-	3	-	3	-	-	3	-	3	-	-	-	-	-
	INRAN	Niger	-	-	2	-	2	-	-	2	-	2	-	-	-	-	-
	ULPCD	Mali	-	-	7	-	7	-	-	7	-	7	-	-	-	-	-
	IER	Mali	-	-	8	-	8	-	-	8	-	8	-	-	-	-	-
	INERA	Burkina Faso	-	-	8	-	8	-	-	8	-	8	-	-	-	-	-
	ULPCD	Mali	-	-	2	-	2	-	-	2	-	2	-	-	-	-	-
	FumaGaskiya	NIGER	-	-	1	-	1	-	-	1	-	1	-	-	-	-	-
	Mooriben - Falwel	NIGER	-	-	2	-	2	-	-	2	-	2	-	-	-	-	-
	IER, Millet	MALI	-	-	11	-	11	-	-	11	-	11	-	-	-	-	-
	UGCPA Sorghum	BURKINA FASO	-	-	3	-	3	-	-	3	-	3	-	-	-	-	-
	ASEDES	MALI	-	-	5	-	5	-	-	5	-	5	-	-	-	-	-
	CCS Haryana Agricultural University, India	INDIA	-	-	21	-	21	-	-	21	-	21	-	-	-	-	-
	Junagadh Agricultural University (JAU), India	INDIA	-	-	9	-	9	-	-	9	-	9	-	-	-	-	-
	Mahatma Phule Krishi Vidyapeeth (MPKV), India	INDIA	-	-	53	-	53	-	-	53	-	53	-	-	-	-	-
	Marathwada Agricultural University (MAU), India	INDIA	-	-	53	-	53	-	-	53	-	53	-	-	-	-	-
	Rajasthan Agricultural University (RAU), India	INDIA	-	-	32	-	32	-	-	32	-	32	-	-	-	-	-
	Sardarkrushinagar Dantiwada Agricultural University(SDAU), India	INDIA	-	-	23	-	23	-	-	23	-	23	-	-	-	-	-
	Africa Harvest Biotech Foundation International, Inc (AHBFI), Kenya	KENYA	-	-	8	-	8	-	-	8	-	8	-	-	-	-	-
	Department of Research and Development (DRD), Tanzania	TANZANIA	-	-	74	-	74	-	-	74	-	74	-	-	-	-	-
	Eastern Africa Grain Council (EAGC), Kenya	KENYA	-	-	24	-	24	-	-	24	-	24	-	-	-	-	-
	Egerton University, Kenya	KENYA	-	-	4	-	4	-	-	4	-	4	-	-	-	-	-
	Ethiopian Institute of Agricultural Research (EIAR), Ethiopia (covering also ARARI & OARI)	ETHIOPIA	-	-	89	-	89	-	-	89	-	89	-	-	-	-	-
	Namburi Seed Company, Tanzania	TANZANIA	-	-	10	-	10	-	-	10	-	10	-	-	-	-	-
	Ugandan National Agricultural Research Organization (NARO), Uganda	UGANDA	-	-	21	-	21	-	-	21	-	21	-	-	-	-	-
	Victoria Seeds, Uganda	UGANDA	-	-	10	-	10	-	-	10	-	10	-	-	-	-	-
	Zanobia Seed Company, Tanzania	TANZANIA	-	-	10	-	10	-	-	10	-	10	-	-	-	-	-
	Association d'Eveil au Developpement Durable (AMEDD), Mali	MALI	-	-	26	-	26	-	-	26	-	26	-	-	-	-	-
	Federation des Paysans Semenciers du Burkina Faso (FePaB), Burkina Faso	BURKINAFASO	-	-	8	-	8	-	-	8	-	8	-	-	-	-	-
	Fuma Gaskiya (Federation of Farmers), Niger	NIGER	-	-	8	-	8	-	-	8	-	8	-	-	-	-	-
	Institut de l'Environnement et des Recherches Agricoles (INERA), Burkina Faso	BURKINAFASO	-	-	39	-	39	-	-	39	-	39	-	-	-	-	-
	Institut National de Recherche Agronomique du Niger (INRAN), Niger	NIGER	-	-	20	-	20	-	-	20	-	20	-	-	-	-	-
	L'Union Albarka de Bokki, Niamey	NIAMEY	-	-	5	-	5	-	-	5	-	5	-	-	-	-	-
	Union des Groupement pour la Commercialisation des Produits Agricole (UGPCA), Burkina Faso	BURKINAFASO	-	-	7	-	7	-	-	7	-	7	-	-	-	-	-
Union FAHAMAYE de Dantchiandou, Niamey	NIAMEY	-	-	5	-	5	-	-	5	-	5	-	-	-	-	-	

Report Description

L211

Report L211

Name of Report: CRP Partnerships Report
 Reporting Line: Lead Center Report to Consortium Office
 Frequency/Period: Every 6 months

Union Harey-Bane de Tera, Niamey	NIAMEY	-	-	4	-	4	-	-	4	4	-	-	-	-	-
Union Made-Bane de Falwel, Niamey	NIAMEY	-	-	2	-	2	-	-	2	2	-	-	-	-	-
Union of Agriculturists of the cercle of Tominian (UACT), Mali	MALI	-	-	12	-	12	-	-	12	12	-	-	-	-	-
University of Hohenheim	Germany	-	-	20	-	20	-	-	20	20	-	-	-	-	-
ISRA	Senegal	-	-	25	-	25	-	-	25	25	-	-	-	-	-
IER	Mali	-	-	30	-	30	-	-	30	30	-	-	-	-	-
INRAN	Niger	-	-	20	-	20	-	-	20	20	-	-	-	-	-
INERA	Mali	-	-	15	-	15	-	-	15	15	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total for center				49	25	758	-	832	49	25	758	-	832	-	-

Summary Report - by CG Center		Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total	Windows 1 & 2	Window 3	Bilateral funding	Center Funds	Total
Sumamry	ICARDA	-	-	136		136	-	-	68		68	-	-	68		68
	GCP	-	-	-		-	-	-	-		-	-	-	-		-
	ICRISAT	49	25	758		832	49	25	758		832	-	-	-		-
Total - all centers		49	25	894	-	968	49	25	826	-	900	-	-	68	-	68

Report Description**L401****Report L401**

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 2012		-
W1 Receipts from Consortium Office (actual dates)	-	-
Total Receipts	-	-
W2 Receipts from Consortium Office (actual dates)	-	-
Total Receipts		-
Transfers to CG Partners		
ICARDA	-	
GCP	-	
ICRISAT	-	
Total Disbursements		-
Expenditure by Lead Center (ICRISAT)		2,361
Unliquidated Advances to ICRISAT Partners		-
Funds held - end of Period		2,361

PART 2 - REPORT OF CGIAR PARTNERS

Center	Funds held - start of Period	Transfers from Lead Center	Expenditure	Unliquidated Advances to Partners	Funds held - end of Period
ICARDA	-	-	854	-	854
GCP	-	-	-	-	-
Totals	-	-	854	-	854

Report Description**Report L411**

Name of Report	CRP Funding Statement, Window 2
Reporting Line	Lead Center Report to Consortium Office
Frequency/Period	Every 6 months

	<u>Date</u>	<u>Donor Currency</u>	<u>USD</u>
Year 1 - 2011			
Receipts from Donors		-	-
		-	-
			<u>-</u>
Transfers to Lead Center (via CO) (if applicable)			
Other Disbursements			
Funds held by Trustee - end of Period	31-Dec-11		<u>-</u>
Year 2 - 2012			
Receipts from Donors			-
			<u>-</u>
Transfers to Lead Center (via CO)			-
			-
			-
Other Disbursements CSP paid to Window 1			-
Funds held by Trustee - end of Period	31-Dec-12		<u><u>-</u></u>

Notes

Amounts should be reported in USD 000's
This reports is on a cumulative basis (prior periods also shown)