2013 WHEAT CRP

Annual Report for the Consortium and the Fund Council

CGIAR

Research Program on WHEAT

Contents

A. KEY MESSAGES

WHEAT works on two primary value streams – improved wheat germplasm and sustainable intensification of climate smart wheat-based systems – contributing directly and indirectly to six CGIAR IDOs (in particular greater productivity increases, poverty reduction, food security, environmental sustainability and greater gender equity and empowerment). An estimated 30 million poor farmers in the developing world rely on wheat system innovations to improve their incomes, the sustainability of their production and to adapt to climate change. WHEAT (and its predecessors) has impacted 50% of them to date and plans to reach at least a similar number with new technologies or know-how that can elevate their ability to increase income, become more food-secure and produce more sustainably (see Annex 3.1, p.18)[1]. The challenge for WHEAT is to maximize contributions to the expected annual wheat demand increase of 1.7% (up from the current 1.1%), which must be met in spite of: climate change; increased water, land, nutrient and labor scarcity or cost; and more aggressive pests and diseases. As more than half of wheat production is located in the developing world, most of this productivity increase will need to take place there, including Africa, where at least 8 countries have significant potential to profitably and sustainably increase wheat production. Wheat is grown in many male-dominated societies and creative avenues need to be found to strengthen the role of women farmers and consumers.

Important 2013 outcomes and impacts included zero-till (ZT) scale-out and -up in Kazakhstan, large-scale adoption of CGIAR-derived varieties in Ethiopia (leading to greater production), West and South Asia (greater stress tolerance) and both systems- and germplasm-based increases in farmer incomes in Mexico (see C.2.). Past impacts were documented for China and Ethiopia (see C.3.) and gender mainstreaming in an increasing number of projects. Important collaborations include those with advanced research institutes and national agricultural research systems (NARS) in Afghanistan, Australia, China, Ethiopia, India, Kenya, Netherlands, Pakistan, UK and US, and linkages with other CRPs, in particular A4NH, CCAFS, Dryland Systems, GRiSP, MAIZE and PIM. The CRP invested approximately 12% of its resources to: strengthen capacities in Central, South and West Asia, Africa and Mexico, reaching approximately 17,500 professionals and farmers; associated with the international wheat improvement network (IWIN); and the 45 multi-stakeholder innovation platforms supported by WHEAT. In regard to funding, it was very encouraging that the Wheat Yield Consortium (WYC) matured into the multi-donor International Wheat Yield Partnership (IWYP) that will employ cutting-edge approaches to increase the wheat yield potential.

Climate smart zero-tillage (ZT) becomes Kazakh policy for wheat production (IDOs: Productivity, Environment): From near-zero adoption in 2000, by 2013 farmers in Kazakhstan were growing wheat on 2 million hectares (ha) using ZT, whereby seed is sown directly into residues and stubble from the preceding crop without plowing. Farmers' savings in inputs and labor costs are estimated at US $30 million (M) per year, soil fertility is enhanced, erosion reduced and moisture capture and retention dramatically increased. ZT use in the drought year of 2012 resulted in an estimated 0.7 million tons (Mt) more grain being harvested; enough to feed 5 million people for a year. Kazakhstan is the world's 7th-largest wheat exporter, mainly to post-Soviet Central Asia, Afghanistan and Iran, where many wheat-dependent poor live. CIMMYT has led large-scale testing and promotion of conservation agriculture (CA) practices for wheat in partnership with the Kazakhstan Ministry of Agriculture (MoA), the Union of Farmers, FAO and the World Bank. Use of CA-based technologies has become national agricultural policy in Kazakhstan; in 2008 the government began to subsidize CA adoption (e.g. policy change outcome). Kazakhstan is now among the top-10 countries by ZT area in the world.[2]

Wheat yield boom in Ethiopia based on improved varieties (IDOs: Productivity, Food Security, Gender): Adoption of WHEAT varieties has helped Ethiopia's wheat production increase from 1.61 Mt in 2003/04 to more than 4 Mt projected for 2014 – the highest ever and more than doubling in a decade. Average wheat yields have risen from 1.47 tons (t)/ha to 2.37 t/ha and have contributed to improved food security, as measured by objective and subjective indicators. About 4.6 million farm households (36% of cereal farm households) depend on wheat farming. Small-scale farmers in high-potential areas who are using improved germplasm- and agronomy-based technologies are now getting yields almost equivalent to those of farmers in western Europe (>10 t/ha). This is paralleled by development of seed systems that can respond very quickly to rust epidemics –

[1] Based on the assumption that 2002 CIMMYT cross or parent spring wheat adoption rates in the developing world (53%) hold in 2013 – to be confirmed by a new variety release and adoption study in 2014 (see: Lantican, M.A., H.J. Dubin and M.L. Morris. 2005. Impacts of International Wheat Breeding Research in the Developing World, 1988-2002. Mexico, D.F.: CIMMYT; SPIA/DIIVA study showing wheat adoption in Ethiopia at 78% of wheat growing area in 2009: http://www.asti.cgiar.org/diiva/ethiopia/spring-bread-wheat); plus ICARDA cross or parent adoption rates, plus adoption rates for winter wheat germplasm, plus adoption rates for conservation agriculture/zero till.

[2] http://www.fao.org/investment/newsandmeetings/news/detail/en/c/174910/ * http://eastagri.org/publications/detail.asp?id=74 * http://www.worldbank.org/en/results/2013/08/08/no-till-climate-smart-agriculture-solution-for-kazakhstan * http://www.cimmyt.org/en/what-we-do/wheat-research/item/water-saving-techniques-salvage-wheat-in-drought-stricken-kazakhstan

in 2010/11 some 70% of the area was sown with yellow- or stem-rust-susceptible cultivars; by 2013/14 an estimated 80% of wheat area is under yellow rust- (YR) or Ug99-resistant cultivars. Approximately 80% of the wheat lines in Ethiopia's breeding programs are CIMMYT- or ICARDA-derived. [3]

Financial summary: W1&W2 contributions to WHEAT increased from USD 10.1M in June 2013 to USD 12.5M in December 2013. Using a well-tested UNDP approach, WHEAT implemented the Gender DAC marker in its financial analysis (see Annex 3), which estimated an investment of ca. 8.5% in gender-relevant research (of total spend). This will increase in coming years as gender is mainstreamed. With a total spending of US$ 35.6 M in WHEAT in 2013, WHEAT results were also scaled out through supplementary projects valued at US$ 13.8 M.

$M	As per PIA	Budget	Actual Spend	of which on Gender
W1&2*	12.995	12.500	11.462	7.7%
W3	Part of bilateral figure below		6.249	18%
Bilateral	23.130		15.528	8.2%

Gender: Improve the knowledge base and refine WHEAT research agenda: WHEAT launched guidelines for mainstreaming gender strategic research in all new WHEAT proposals. In South Asia, a hot spot for WHEAT and the feminization of agriculture, a competitive grant-funded scoping study identified many new entities that could work with WHEAT partners to address gender and social equity issues. The Cereal Systems Initiative for South Asia (CSISA) project is already working with livelihoods initiatives, such as JEEViKA and Pradhan, on social mobilization. In Bangladesh, similar partnerships have been formed with the USAID-funded Multi-Year Assistance Program (MYAP) project. Such partners will be also involved in the CG-wide gender norms and agency study. Gender performance self-assessment as per Annex 5, p.23, is 'approaching requirements'.

CRP Governance and Management: Alignment with Lead Center Board of Trustees: The WHEAT Stakeholder (SC) and Management Committees (MC) endorsed an annual WHEAT Governance and Management Calendar to consolidate decision-making support actions and decision-making at CRP and Lead Center levels. The Lead Center Board of Trustees (BoT), which signs the PIA, has ultimate oversight over the CRP. The WHEAT SC (including 70% non-CGIAR members) met with Lead Center Board members (Board Chair, Program Committee Chair) prior to the Fall 2013 BoT meeting and made recommendations to the BoT's Program Committee, which were subsequently fully endorsed. The key 2014 'To Do' is to connect the WHEAT SC with the ICARDA BoT.

B. IMPACT PATHWAY AND INTERMEDIATE DEVELOPMENT OUTCOMES (IDOS)

Overall, 94,5% of projects under WHEAT have completed their 2013 deliverables, as documented in WHEAT reporting templates (for W1&2) and bilateral progress reporting. (See http://wheat.org/resources/documents-about-wheat; overview outputs 2014). *For the CRP's IDOs, targets and indicators, see Annex 6, p. 24.*

C. PROGRESS ALONG THE IMPACT PATHWAY

C.1 Progress towards outputs

Germplasm research (See Annex: Progress indicators 7, 18-20, 26-27, 33-34)

[3] Shiferaw, B., et al. (2014). "Adoption of improved wheat varieties and impacts on household food security in Ethiopia." Food Policy 44(0): 272-284.

See also: http://www.indexmundi.com/agriculture/?country=et&commodity=wheat&graph=production * http://www.csa.gov.et/images/general/news/2006%20forecast.pdf, see pp. 13, 19, 30* http://www.worldbank.org/en/news/feature/2014/01/23/revolutionizing-wheat-production-in-ethiopia * Yirga et al, Analysis of Adoption and Diffusion of Improved Wheat Varieties (slides), Oct 2012: https://www.google.com.mx/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CCUQFjAA&url=http%3A%2F%2Fwww.slideshare.net%2FCIMMYT%2F05-chilot-virgaanalysisofadoptionanddiffusionofimprovedwheatvarietiesinethiopia&ei=-O4MU7XjGaPEyQHQ-oDQCw&usg=AFQjCNHP3FReOLiERFaUqr8MrQqzUoad7w&bvm=bv.61725948,d.b2I*http://www.globalrust.org/db/attachments/references/1702/1/Shiferaw%20et%20al.pdf

Bringing useful genetic diversity into breeding programs: In 2013 Seeds of Discovery (SeeD) characterized 10,000 wheat accessions from CIMMYT's gene bank (more than 40,000 since project start) through Mexico's Agricultural Genetic Analysis Service (SAGA), using a standardized genotyping-by-sequencing (GBS) method and resulting in part in the definition of a core subset of Mexican landraces for genetic studies on traits of interest to breeders. Integrating theory with application, SeeD is advancing 200 crosses between gene bank accessions and 10 breeder lines, using a novel 'linked top-cross population' approach, to produce a panel of introgression lines for association analyses and to mobilize new genetic variation into breeding programs. In the field, SeeD characterized more than 20,000 accessions for morphological, phenological and grain-quality traits – totaling some 70,000 accessions characterized since project start. Also, approximately 27,000 accessions were evaluated under drought and high temperatures and 4,500 accessions were evaluated for disease resistance. This has produced the most comprehensive set ever of phenotypic and genotypic data on genetic resources; it will be mined extensively in 2014 and beyond, for delivery of new traits in new varieties in about 10 years.

Novel diversity from near relatives for enhanced nutrition and disease resistance: Two research initiatives transferred genes from near relatives into wheat: (1) rye translocations were transferred for testing into the elite wheat PAVON, in search of increased iron or zinc content in grains; and (2) translocations from wild grasses were transferred into four elite wheat lines potentially containing new stem rust-resistant genes (*Sr26, Sr32, Sr37, Sr39, Sr40*) as well as genes for increased water use efficiency, yield, heat and drought tolerance and resistance to diverse biotic constraints. WHEAT breeders, public breeding programs and private companies will use the translocations by way of elite wheat varieties. In 2014, 22 lines were selected for further backcrossing.

Genomic selection (GS): progress making breeding faster and more precise: With high-density markers, researchers can exploit multi-locus linkage disequilibrium between markers and quantitative trait loci (QTL) across the whole genome to estimate genetic values for complex traits; those values can then be used in predictive GS methodologies. WHEAT partners compared various models using intermediate-to high-marker density to assess genomic prediction of genetic values in actual breeding populations under different environmental conditions. Results show that: (1) pedigree (population structure) accounts for a sizeable proportion of the prediction accuracy, when a global population is assessed; and (2) predictive accuracy can be improved by using information from correlated environments, when genotype x environment interactions are modeled using high-dimensional environmental data. This is a strong example of strategic public sector research aiming for on-farm impact. Private sector companies currently do not share their GS know-how.

Based on above information, CIMMYT partnered with two US universities, USAID, USDA-ARS, Pakistan and India to initiate a dramatic upscaling of GS in 2013. This is coupled with a stepped-up integration of the NARS and CG breeding pipelines. In what may be the largest GS effort ever conducted, WHEAT is employing GS to increase the accuracy of selecting among the elite lines that emerge annually from the spring wheat breeding pipeline. Increased NARS/CG breeding pipeline integration is achieved through expansion of early generation yield trialing to include sites in Pakistan and India, where researchers will evaluate twice as many elite lines two years earlier than was previously possible. This project involves the entire annual output of the WHEAT spring wheat pipeline and will provide several benefits, including: 1) NARS have earlier access to a larger quantity of elite lines; 2) estimates of genetic value will be more robust through the addition of South Asia phenotypic data to that generated in Mexico; and 3) direct evidence of the contribution of GS to the accuracy of selecting among annual cohorts of candidate wheat varieties. Future plans include additional phenotyping sites in Africa. These new phenotyping sites will form the core of a Precision Phenotyping Platform that will include over 10 locations hosted by NARS partners. Combined, the altered flow of germplasm, genomic data and expanded early phenotyping will form the next-generation International Wheat Improvement Network (IWIN), which will lead to higher rates of genetic gains in both NARS and CG breeding pipelines.

Global collaboration to raise the genetic yield potential of wheat: In March 2013 and as part of the MasAgro initiative, more than 100 stakeholders, scientists and students from 28 countries met in Mexico for the 3rd International Workshop of the WYC to share key research findings on how to increase wheat's low photosynthetic efficiency, produce more and bigger grains and increase lodging tolerance. The UK Biotechnology and Biological Sciences Research Council (BBSRC) and USAID brought together other potential funders for a second meeting in November to scope WYC's successor, the IWYP. This group of public sector donors, research and development (R&D) organizations and major private breeding companies will fund scientific breakthroughs that will increase the genetic potential of wheat yields by 50% over the next two decades. IWYP will support WHEAT to translate the scientific discoveries into elite lines for use in WHEAT target regions. IWYP is an outcome of WHEAT's leadership in global wheat research. WHEAT provides the impact pathway for IWYP in the

developing world. IWYP's formal launch will take place at the Borlaug Summit on Wheat for Food Security in late March 2014.

IWYP researchers will use novel tools developed by WHEAT physiologists to assess wheat spike photosynthesis – one of the traits being targeted in efforts to increase wheat's genetic yield potential. Tools include a chamber to measure wheat spike photosynthesis and a simple spike photosynthesis inhibition treatment. It allows scientists to calculate the contribution of this physiological process to final grain weight. Using the new technologies, the researchers identified molecular markers (QTLs) in a mapping population associated with spike photosynthesis that will facilitate selection of wheat with enhanced levels of the trait. Finally, Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO) and its High-Throughput Phenomics Center, worked with WHEAT researchers to field-test two automated sensor systems for high-throughput phenotyping. The aim is to improve visualization and analysis tools under development at CSIRO.

R4D on appropriate-scale mechanization (See annex: Progress indicators 4-6, 11, 18-20, 23-25, 26, 27, 33-34)

A major push forward was made on mechanization research in 2013. Small-scale mechanization is at the core of increasing the productivity and income of smallholder wheat producers. It is also at the core of enabling increased intensification, through shorter turn-around times between crops, moving crops into cooler time periods for greater yields and implementing CA practices for greater residue retention to the benefit of improved soil structure and greater water and nutrient use efficiency. Progress on mechanization is highlighted in this report, yet sustainable intensification of wheat-based systems produced many other outputs leading to outcomes and impacts (see section C.2 and C.3).

Scale-appropriate mechanization for smallholder women and men farmers: CIMMYT's Farm Mechanization and Conservation Agriculture for Sustainable Intensification (FACASI) project delivered a lightweight, two-wheel tractor (2WT) single-row seeder designed for CA in wheat-based systems, which is particularly targeted at female-headed households in eastern and southern Africa[4]. Women farmers often do not own or are not permitted to use draft animals and are among the last to access land preparation services. The seeder clears crop residue from the path, its furrow-opener shank opens a soil slot for seeds and fertilizer and a pressing wheel presses the soil slot closed. It has been field-tested in Kenya's wheat-growing area by women farmers and FACASI scientists. A business model is being developed for local small-scale entrepreneurs to maximize farmers' access to the technology.

In another 2013 FACASI initiative, 16 agricultural engineers, agronomists, machinery importers and machinery manufacturers from Ethiopia, Kenya, Tanzania and Zimbabwe took part in a 12-day study tour in India organized by CIMMYT, the Indian Council of Agricultural Research (ICAR), the Australian Centre for International Agricultural Research (ACIAR) and the Australian International Food Security Centre (AIFSC)[5]. The tour was the first step in building a trilateral partnership between Africa, India (including CSISA) and Australia that will facilitate the exchange of farm mechanization R&D results. FACASI also links with mechanization technology from China, and in 2013 worked with smallholder farmers in Kenya and Tanzania to test the Gongli seeder, a Chinese seed drill well-suited to seed small-grain crops.

Smart mechanization and machinery for Mexican wheat farmers: Working across borders and with 3-D design programs, virtual resistance tests and representation and extensive testing on farmers' fields, MasAgro's mechanization unit has designed new CA machinery prototypes and improved existing machinery. Direct seeding implements developed by WHEAT in South Asia for seeding into large amounts of surface residues were imported and converted to work in two different agro-ecological regions in Mexico. A graduate student in Mexico developed a successful tool-bar for a multi-use/multi-crop machine designed for use with a 2WT. Its precision, flexibility and user-friendliness were improved; its weight and construction costs reduced. It can be used in diverse farm settings, including those in Africa and Asia, thus returning value addition generated in Mexico to other WHEAT target regions. Linking with the scale-appropriate mechanization impact pathway, some 500 Mexican farmers and 100 service providers attended innovative and functional agricultural engineering workshops which also provided feedback to innovators such as to develop an on-the-go sensor-based variable fertilizer applicator system, pursue mechatronics, mobile applications and refined DIY-manufacturing technology. [6]

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[4] See: http://aciar.gov.au/files/part_1306_p16-19_0.pdf

[5] See: http://blog.cimmyt.org/giving-power-to-african-farmers-learning-from-the-indian-experience/; : Krupnik, T.J., S. Santos Valle, A.J. McDonald, S. Justice, I. Hossain, and M.K. Gathala. 2013. Made in Bangladesh: Scale-appropriate machinery for agricultural resource conservation. Mexico, D.F.: CIMMYT

[6] Van den Broeck, G., Perez Grovas, R.R., Maertens, M., Deckers, J., Verhulst, N., Govaerts, B., 2013. Adoption of conservation agriculture in the Mexican Bajío. Outlook on Agriculture 42 (3), 171-178. https://lirias.kuleuven.be/bitstream/123456789/421766/2/VandenBroeck+et+al++2013-CA_adoption_Bajio.pdf

C.2 Progress towards the achievement of research outcomes and IDOs

Germplasm research (progress indicators 7, 18-20, 26-27, 33-34)

National program partners move improved germplasm onto farmers' fields (IDOs: Productivity): Following several years of multi-location trials in which they consistently yielded from 8.2 to 10.4% above the best checks, three new bread wheat varieties were released in Afghanistan in 2013. Targeted respectively to irrigated areas, winter wheat settings and rainfed production, the varieties were derived from WHEAT's Mexico- and Turkey-based breeding programs. Twelve prominent Afghan wheat varieties were confirmed resistant to prevalent YR races under natural conditions. In adoption trials, the last 10 days of November were established as the best time to sow wheat in eastern Afghanistan. In collaborations with Egypt, Africa's largest wheat producer and importer, advanced material reached yields of over 11 t/ha on research fields during the 2012-13 season.

Similar to Afghanistan, more than a dozen new stress-tolerant wheat varieties have become available to farmers in South Asia over the past five years. Fifty-six scientists and government officials from Bangladesh, Bhutan, India and Nepal evaluated progress during the 5th CSISA wheat breeding review meeting and identified measures to strengthen links among wheat breeding and to fast-track seed production of improved varieties to farmers, based on participatory variety selection.[7]

Systems research (progress indicators 4-6, 11, 18-20, 23-25, 26, 27, 33-34)

Decision support tools for farmers (IDO: Productivity, Environment): The Nutrient Expert™ decision support tools for maize and wheat, developed by the International Plant Nutrition Institute (IPNI), were recognized by the Bihar Innovation Forum as the Best Innovation for Improving Rural Livelihood. Developed and validated over the last five years, the tool provides location-specific fertilizer recommendations for individual farm fields and offers critical input management support to South Asia's smallholder wheat and maize farmers, who lack access to soil testing.[8] The tools were released for free public use in June 2013.

CSISA helps mainstream climate-resilient management practices (IDO: Productivity)**:** Sowing wheat in late November or early December – the normal practice in eastern India – makes the crop more vulnerable to the damaging influence of late-season temperatures that can exceed 35° C in many years – a scenario that is expected to become more common due to climate change in the heat-prone areas of the Eastern Indo-Gangetic Plains (IGP). Late planting can reduce wheat yields by 50%, as shown conclusively in on-farm trials coordinated by CSISA in Bihar and eastern Uttar Pradesh. Use of ZT seed drills can facilitate early sowing of wheat, which increases yields by allowing the crop to avoid terminal heat stress. During 2012-13, CSISA, with its six innovation hubs in India, collaborated in wheat planning workshops with District Agriculture Officers (DAOs) to promote ZT and early sowing of wheat. In Kishanwada Village, early sowing of the 2012-13 wheat crop resulted in an unprecedented grain harvest of 7.3 t/ha, nearly 2.5 times the Indian average yield. CSISA has worked with Bihar's Dep't of Agriculture, its Agriculture Management Education & Training Institute, DAOs, and *KrishiVigyanKendras* to promote the practice. The official recommendation is now for farmers to sow wheat before November 15. CSISA continues to build on and extend the success of the Rice Wheat Consortium (RWC) for the IGP, with specific focus on the stress-prone and relatively impoverished areas of eastern India and Bangladesh. CSISA is funded by BMGF and USAID.[9]

Innovation Systems outcomes: Taking conservation and precision agriculture to traditional farmers in Mexico (MasAgro) (IDOs: Food Security, Income, Capacity to Innovate, Adaptive Capacity):

Funded by Mexico, widely considered an innovative model for national-international collaboration in AR4D and described by Bill Gates as "the most original program in existence," MasAgro works with 180 partners – Mexican research organizations, policymakers, farmers and private companies – to strengthen national food security through research, capacity building and technology transfer.

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[7] http://blog.cimmyt.org/asia-wheat-breeders-review-progress-and-look-ahead/

[8] See: Nutrient management in wheat: current scenario, improved strategies and future research needs in India. 2013. Majumdar, K.; Jat, M.L.; Pampolino, M.; Satyanarayana, T.; Dutta, S.; Kumar, A.. Journal of Wheat Research 4 (1): 1-10 pags.

[9] The open-source book published in 2013 "Made in Bangladesh: Scale-appropriate machinery for agricultural resource conservation," details the functions and designs of small-scale agricultural machinery for use with two-wheel tractors. The book was a product of the USAID-funded CSISA–Mechanical and Irrigation initiative and CSISA Bangladesh projects, as well as the EU-funded Agriculture, Nutrition and Extension Project (ANEP) and the Australian Centre for International Agricultural Research-funded Rice-Maize Project.

For wheat, MasAgro increased the profitability of Mexico's wheat-based farming systems by US $35M[10], based on cost reductions and income gains, reaching an estimated 50,000 farmers and benefitting more than 200,000 people in 2013. Wheat farmers learned about, tested and provided input for innovations through 14 experimental platforms for CA-based technologies, 50 demonstration modules and 8 soil fertility experiments. In yet another innovative arrangement (and in several cases as a result of strong lobbying by farmers), the governments of 12 major agricultural states in Mexico have directly aligned their AR4D policies and programs with those of MasAgro. A key component of the overall impact is farmer adoption of the GreenSeeker technology for precision fertilization of wheat crops, which represents a national savings estimated at US $1.7M for 2013.

Pioneering across WHEAT's M&E approaches, data for the locations, farm holdings and cropping practices of participating wheat farmers were uploaded to MasAgro electronic logbook and innovation network systems that will allow greatly improved targeting and technical support for the farmers.[11]

C.3 Progress towards Impact

Successes and challenges of wheat research-for-development and potential impacts were succinctly reviewed**.**

On top of the two impact case studies about Kazakhstan and Ethiopia, WHEAT **has achieved significant WHEAT impacts in China** (IDO: Productivity): Preliminary findings of an impact study by the Center for Chinese Agricultural Policy (CCAS) for 1982-2011 show that, on average, farmers were growing CGIAR-derived varieties on 50% (5M ha) of spring wheat area in southwestern China. Compared to other varieties grown, the CGIAR-derived wheats are more broadly adapted and have higher yield potential. The impact of CGIAR training of Chinese researchers is considered significant, in terms of further education, career development, achieving breeding results, patents and publications. The complete impact report and data sets will be available mid-2014.

Impact of rust-resistant wheat and improved agronomic practices: Ethiopia and Central Asia (IDOs: Productivity, Food Security, Gender): Facing the threat of a potential 2013 YR outbreak, WHEAT researchers and the Ethiopian Institute of Agricultural Research (EIAR) organized stakeholder meetings, led an early *belg* season rust survey and raised awareness among all actors. Farmers were advised to use rust-resistant varieties or purchase fungicides and spray on time. Through a USAID-funded initiative to rapidly develop and spread improved, YR-resistant varieties of wheat, EIAR and ICARDA distributed 618t of quality seed to over 13,000 farmers in 45 districts, produced and shared a further 19,258t through informal exchange or formal sale and delivered 16t to small-scale seed producer associations. The potential YR outbreak was averted and 2013/14 wheat production is expected to exceed 4 Mt – a new national record. [12]

Review: Successes and challenges of wheat R-for-D and potential impacts: A WHEAT competitive partner grant (CPG)-funded project for Uzbekistan and Tajikistan (where wheat crops have suffered three major YR outbreaks in the last five years), multiplied seed of resistant varieties on state farms and farmers' fields, and in 2014/15 more than 20,000 ha of winter wheat will be planted to prevent future damage from YR. An adoption survey is planned for 2014 to document the success story, building on an earlier panel.[13]

Return on investment zero-tillage in western Indo-Gangetic Plains since 1994 (IDOs: Productivity, Environment, Income) During 1994-2008, the Rice-Wheat Consortium for the Indo-Gangetic Plains (RWC) promoted resource-conserving practices throughout South Asia, including the direct seeding of wheat into unplowed fields (ZT) following rice harvest. Significant impacts were achieved at scale in northwest India. At the 2004 levels of adoption in Haryana and Punjab States of India alone, ZT brought a savings of 12.6M and 10.4M liters of diesel, 2.1M and 2.1M tractor hours and US $14.6M and $13.5M in lower production costs per season, respectively. In Haryana, ZT adoption also generated an estimated gain of 60,000t of wheat grain per season. In financial terms, Haryana had a net income increase of US $23.9M per season ($14.6M million in reduced production costs & $9.2M in higher yields). This work has been carried on and expanded through CSISA (see the report above).[14]

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[10] Equivalent to 1/4 of the MasAgro total impact figure of $143 million, given that 25% of the farmers are part of wheat-based systems; Donor-funded external impact study to be published in May 2014.

[11] http://www.fao.org/agronoticias/archivo/mensual/es/?mes=2013-09 (in Spanish)

[12] http://www.icarda.org/tackling-threat-stripe-rust-ethiopia
http://intranet.cimmyt.org/en/about-us/media-resources/newsletter/1008-resistant-wheats-and-ethiopian-farmers-battle-deadly-fungus
http://blog.cimmyt.org/?p=10647

[13] Shiferaw, B., et al. (2013). "Crops that feed the world 10. Past successes and future challenges to the role played by wheat in global food security." Food Security 5(3): 291-317

[14] Erenstein, O.; Farooq, U.; Malik, R. K.; Sharif, M. 2007. Adoption and impacts of zero tillage as a resource conserving technology in the irrigated plains of South Asia. Colombo, Sri Lanka: International Water Management Institue. 55p. (Comprehensive Assessment of Water Management in Agriculture Research Report 19:

D. GENDER RESEARCH ACHIEVEMENTS

In 2013 WHEAT prioritized research for strategic information on gender in wheat-based livelihoods and to refine the research agenda and the impact pathway of WHEAT (*see also Annex 4, p.14 & 5, p.23*). These include:

1. A "Scoping study on the integration of gender and social equity in R4D on wheat-based systems in South Asia," focusing on the IGP regions of Bangladesh, India, Nepal and Pakistan. Key findings were that favorable national policies exist[15] and that many institutions had the capacity to address gender and social equity in agriculture. Institutions were identified that could partner with WHEAT R&D partners to strengthen gender and social equity in wheat-based systems in South Asia. Such partnerships should fill knowledge gaps about gender and social equity in wheat production systems (e.g. types of specific challenges women face in wheat farming; that socially excluded groups face in accessing knowledge and other services) [16]. Lack of systematic evidence on these crucial aspects effectively constrains the wheat research system in responding better to the new demands being placed on them, including gender and social equity aspects.
2. A study examined issues of gender and human development opportunities and tradeoffs related to promoting improved technologies (conservation agriculture (CA) as part of a cropping system with nutrition- and climate-smart potential; Mexico and Zambia). Findings point to situations where promoting CA with smallholders may have undesired effects from gender and human development perspectives (e.g. relating to drudgery, nutrition and food security, residue use, assets, mechanization and extension). The direction and magnitude of potential trade-offs depend on the local context and specific intervention[17].
3. WHEAT gender focal point co-led design of a global, comparative, qualitative study on gender norms and agency (capacity of individuals to act, make choices) in relation to agricultural and NRM innovation. Together with several other CRPs and the CO senior gender advisor, WHEAT led the design of this cross-CRP study on gender transformative approaches of the CGIAR Gender & Agricultural Research Network. Outputs included a concept note, a conceptual framework and general implementation plan. The methodology, training and first phase of implementation will take place in 2014.

2013 successes in gender mainstreaming include:

- Approval of the *WHEAT Gender Strategy*.
- *Gender audit of WHEAT.* The findings provide solid input to integrate gender as an analytical tool for enhanced targeting and impact and for strategic and practical follow-up actions to mainstream gender as well as to pursue integrative and strategic gender research. The approach was participatory and interactive, with findings validated in a collaborative workshop which included CRP managers, senior management, gender experts and biophysical scientists, resulting in a comprehensive gender audit report (meets indicator for WHEAT Gender Strategy Output I).
- *Women in training.* In 371 WHEAT capacity building events (formal courses, meetings, workshops, field days, study tours, traveling workshops) in 20 countries, 38% (303) of the 1,047 participants were women. Female participation in CIMMYT wheat improvement courses increased from 4% (2005-10) to 31% in 2013, and 21% (91) of 431 total participants in ICARDA wheat improvement courses were women. Six winners of the Jeanie Borlaug Laube Women in Triticum (WIT) Early Career Award spent a month at CIMMYT participating in training courses and other events.
- Development and launch of *support tools for scientists and research teams* on gender-aware research project design. The tools were developed and launched in 2013. 35 CIMMYT scientists have participated in initial training on the tools (contributes to indicators for Gender Strategy Output III).
- *Sex-disaggregation* for surveys, participatory research activities and germplasm development were included in the formal staff "Key Performance Indicator" (KPI) system, a core part of annual staff evaluations, to be

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http://www.iwmi.cgiar.org/assessment/files_new/publications/CA%20Research%20Reports/CARR19.pdf
http://www.gov.uk/government/case-studies/dfid-research-planting-without-ploughing-zero-till-wheat-takes-root Erenstein, O. (2009). Zero Tillage in the Rice-Wheat Systems of the Indo-Gangetic Plains: A review of impacts and sustainability implications.; Washington, DC, IFPRI.Erenstein, O. and V. Laxmi (2008). "Zero Tillage Impacts in India's Rice-Wheat Systems: A review."; Soil & Tillage Research 100(1-2): 1-14.; Erenstein, O. and V. Laxmi (2010). "Assessing the impact of adaptive agricultural research on accelerating technology deployment: The case of zero tillage wheat in India." Outlook on Agriculture 39(2): 121-126.

[15] Final Report; Tahseen Jafry, Glasgow Caledonian University (UK), Nov 2013 (to be published on wheat.org by end April 2104): "The overall policy environment is favorable for gender equality and social inclusiveness in all three countries …. However several deficiencies exist in implementation due to lack of complementary policies in relation to inheritance laws and lack of programmes to educate society on gender equality".

[16] : Ibid: "…little has been documented on the gender dimension of the zero-tillage intervention (Erenstein 2009) which suggests that more research is needed to determine the differential adoption of the technology by rich and the poor."

[17] Tina Beuchelt, Lone Badstue, Gender, nutrition- and climate-smart food production: Opportunities and trade-offs, Food Sec. (2013) 5:709–721

supported by a formal policy on sex-disaggregation in data collection and analysis in 2014 (contributes to Gender Strategy indicator for Output IV). 7 household surveys and 2 focus groups, involving 6,525 households, were realized in 5 countries, generating sex-disaggregated data relating to ZT service provider clients, migration, perceptions on climate change and ownership and control of resources, among other topics. One finding (South Asia / ZT) from service provider surveys showed gender inequity among their clientele which contributed to the use of women self-help groups as a conduit to training, on farm activities and soliciting feedback on wheat technologies.

- *WHEAT Competitive Partner Grant* scheme. As of 2013, applicants must explicitly assess the gender dimension of their proposals. Contributes to GS indicator for Output III.
- *Gender* was a chief topic at *CIMMYT's Science Week* (December 2013) attended by more than 200 scientists, project leaders, managers, BoT members and guests. Gender was addressed in a plenary presentation and three workshops, and was included in all research strategy discussion sessions leading to the planning of CRP extension and Phase II proposals.
- In consultation with the CO senior gender advisor, WHEAT implemented the DAC Gender Marker developed and tested by UNDP and other UN bodies for the 2013 reporting.

E. PARTNERSHIP BUILDING ACHIEVEMENTS

Update on Wheat for Africa (W4A): Efforts to put wheat on the African food and trade agenda continued at the Forum for Agricultural Research in Africa (FARA) African Agricultural Science Week in Accra (July 2013), when 30 senior research, development and policy experts met with WHEAT representatives to endorse a strategy for promoting African wheat production that would address production, rapidly increasing demand, markets and regional trade. Participants endorsed the focus on empirical studies to learn from existing wheat value chains and the potential for smallholder wheat production as a cash crop in selected countries (smallholder wheat in Ethiopia is a strong example). A September 2013 scoping visit to Nigeria found evidence of great potential to produce wheat, especially in the northern states, and high interest on the part of farmers and the MoA. A project proposal is under development to complement the SARD-SC/Wheat Nigeria hub led by ICARDA. A smallholder cash crop production and market potential study jointly funded by the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and WHEAT will start in 2014. A similar undertaking is being developed with the Center for the Coordination of Agricultural Research and Development in Southern Africa (CCARDESA).

Through African Development Bank-funded SARD-SC/Wheat, high-yielding and heat-tolerant varieties have been disseminated by ICARDA and NARS project partners in Ethiopia, Nigeria, Sudan, Tanzania and Zimbabwe. The varieties have enabled participating farmers in Sudan to achieve yield advantages of up to 70% over non-participating farmers. Some producers have yielded over 5 t/ha, despite extremely high temperatures. Research efforts have also led to the release of a heat- and disease-resistant cultivar – Goumria-3 – expected to be cultivated widely across Sudan.

Precision phenotyping for research stations, decision support tools and mechanization for farmers: The first web-based service of its kind, GreenSat allows farmers to calculate nitrogen (N) fertilization recommendations for wheat based on SPOT-6 satellite images. It was developed jointly by Mexico's *Servicio de Información Agroalimentaria y Pesquera* (SIAP) and WHEAT, as part of MasAgro. SPOT-6 became operational in February 2013 and the initial NDVI maps were used to diagnose spatial variability in wheat fields and for training, with a pilot coverage of about 160,000 ha in Mexico's Yaqui Valley. GreenSat was enhanced over summer 2013 with an N-rate calculator, based on an algorithm developed for the handheld GreenSeeker. In 2014 GreenSat will be operational in four major wheat-growing regions of Mexico.

Partnerships to develop low-nitrifying production systems: Following up on work published in 2012[18], scientists from the Japan International Research Center for Agricultural Sciences (JIRCAS), ICRISAT, CIAT, Yokohama City University (Japan), CIMMYT, UCLA, UPMC-Bioemco and Ecole Normale Supérieure (Paris), are collaborating in research on biological nitrification inhibition. For wheat, this involves wide crosses to transfer the trait from the 'N' chromosome of Volga wild rye. Accomplishments in 2013 include the transfer of one translocation of the complete short arm of 'N,' four additional translocations of the long arm of 'N' and a smaller fragment size of

[18] G. V. Subbarao, K. L. Sahrawat, K. Nakahara, T. Ishikawa, M. Kishii, I. M. Rao, C. T. Hash, T. S. George, P. Srinivasa Rao, P. Nardi, D. Bonnett, W. Berry, K. Suenaga, and J. C. Lata. 2012. Biological nitrification inhibition—A novel strategy to regulate nitrification in agricultural systems. Advances in Agronomy (114): 249-302.

'N.' The resulting synthetics have been crossed with elite wheat varieties to obtain an F_1 generation. Some 20 candidate EST markers have been selected with potential to accelerate variety development.

Multi-CRP and -partner collaboration in Pakistan (Flagship Project 10): The Pakistan Ministry of National Food Security and Research (MNFSR), CIMMYT, USAID, the Pakistan Agricultural Research Council (PARC), ILRI, AVRDC, IRRI, UC-Davis and key agricultural leaders are partners in the Agricultural Innovation Program (AIP), a US $30M project to revitalize the contribution of science-supported innovation to the economic growth of Pakistan's agricultural sector, funded by USAID and announced in March 2013. Wheat-related components set up in 2013 include the rapid diffusion of high-yielding rust-resistant wheat varieties and generating a durum wheat value chain in Pakistan. All of the above builds on successes of the Wheat Productivity Enhancement Project (WPEP), a USDA program implemented by CIMMYT in collaboration with national and provincial research partners and ICARDA.[19]

Dryland Systems and Wheat CRPs: Water-, fertilizer- and energy-efficient wheat production: WHEAT experience in more intensive systems is exchanged with the Dryland Systems CRP, which undertook wheat research in 2013 in Algeria, Iraq, Jordan, Syria, Tajikistan and Tunisia. Key achievements include building collaboration and the capacity of the NARS and establishing trials to test and promote CA, adoption of which is extremely limited in Central and West Asia and North Africa (CWANA). By 2014, trials in each country will have assessed nutrient and water use efficiencies for wheat under CA vs. conventional management. Work is funded by IFAD, ACLIMAS-EU, JICA and ACIAR.

Downstream partnerships in China: A 20-ha CA demonstration site and informal farmer field school opened in northern China. WHEAT, the Ningxia Academy of Agricultural and Forestry Sciences (NAAFS), Ningxia Bei Li Feng Zhongye Seed Company, Wuzhong City/Litong District Agricultural Technology Promotion Centre, the Qingdao Peanut Machinery Manufacturing Company and villagers of Litong District are working together to build an innovation platform to transfer knowledge and technology via champion farmers to improve agronomic practices of the farmers – especially women – in the district and beyond.

Key results from CGIAR Stakeholder Perceptions Survey and follow up by WHEAT: The results of the CO-commissioned survey show WHEAT receiving above-average scores in all categories evaluated except for "involving partners in decision making," where it scored roughly at the mean of all CRPs. WHEAT will address this in 2014 partly through a global partner meeting to get partners' input for the design of WHEAT CRP Phase II. "Sharing credit" and "distributing funds fairly" were two other key areas for improvement and will be addressed in 2014. By early 2013, ninety-two R&D partners from 40 countries had responded to the **WHEAT Partner Priorities Survey**. Their feedback on national research priorities and need for additional Flagship Projects will inform WHEAT Phase II proposal development.

F. CAPACITY BUILDING

WHEAT organized 371 capacity building events in 20 countries during 2013. Overall, 17,310 people participated in short-term trainings, of which 17% (3,068) were women. 186 professionals participated in long-term training measures, of which 35% (65) were women.

Formal wheat improvement training courses were revised in consultation with scientists to better address the needs of young and mid-career scientists, 96 (29 women) of whom completed such courses in 2013. As part of research funded by the Federal Ministry for Economic Cooperation and Development, Germany (BMZ), ICARDA capacitated 10 early-career wheat breeders in Uzbekistan (4 women) on concepts of wheat breeding, use of traditional and modern crop breeding methods and breeding for resistance to abiotic stresses and diseases like YR. Excellent coordination with Cornell University expedited training offered as part of the DRRW project and WIT, established in 2010 by the Borlaug Global Rust Initiative (BGRI). Six WIT Award winners spent a month at CIMMYT, benefiting from daily interactions with international scientists and work with a group of 26 wheat trainees from 16 countries. WIT Award winner Kaori Ando, a Japanese researcher and post-doc from Washington State University, said that visiting CIMMYT was one of her life-long dreams ("Words cannot describe how ecstatic I was to be here.") and helped her to identify communication skills as an area to develop, in her quest to become a more effective scientist.[20]

[19] http://blog.cimmyt.org/pakistan-program-aims-for-agricultural-innovation/ *http://blog.cimmyt.org/pakistan-innovation-to-boost-agriculture/ * http://blog.cimmyt.org/cimmyt-rebuilds-partnerships-in-pakistan/

[20] http://blog.cimmyt.org/women-in-triticum-visited-cimmyt/ * http://www.icarda.org/blog/%5Bnode%3ABlog%20type%5Dtraining-targets-early-career-wheat-breeders

Capacity strengthening in Innovation Systems (MasAgro): 31 extension specialists from northwestern Mexico – a major wheat region – successfully completed the course and exams to gain official certification as experts in CA. As part of "innovation hubs" for 8 regions/cropping systems, a MasAgro "train-the-trainer program" enabled technical assistants to master the program's innovation network technology – applications for socioeconomic analysis and targeting within farm communities – and pass on this knowledge throughout the national extension system.

Upstream partnerships (China): As part of WHEAT capacity building, more than 40 researchers from the NAAFS Research Institutes of Desertification Control, Agricultural Resources and Environment and Crop Research were trained on mechanization and soil health in northwest China.

The Chinese Academy of Agricultural Sciences (CAAS) and Murdoch University, Australia, with financial support from the Chinese Ministry of Science and Technology and the Australian government, officially opened the Australia-China Joint Center for Wheat Improvement in Beijing in April 2013. This builds upon more than 10 years of successful wheat quality improvement collaboration between the CAAS-WHEAT wheat program and Murdoch University.

G. RISK MANAGEMENT

- Budget ambiguity for W1&W2 persisted for almost the entirety of 2013, due to the Consortium-promoted budgeting approach, which did not honor contractual commitments made by WHEAT to partners in 2012. WHEAT was grateful for the Consortium's commitment to a solid Finance Plan for 2014 and 2015 emerging at the end of 2013. The WHEAT Management Committee mitigated risk through its decision to put priority on funding CGIAR Centers' and ongoing competitive grant partners' R4D. No new competitive partner grants were funded in 2013.
- Ongoing grants from 2012 continued to be funded. Several CPG-funded projects experienced delays of about 3 to 6 months in reaching their deliverables. Risk mitigation: Payment schedules were adjusted accordingly.
- The transparency of Consortium decision-making processes often remains inadequate. Two examples are the length of time to have a clear rule for carry-over and the development and use of IDOs in formal Consortium reporting documents. WHEAT addressed this issue via formal feedback by the WHEAT Management and Stakeholder Committees to the Consortium Office and Lead Center DG and Board Chair raising the issue with the Consortium Board.
- The change of government in Mexico required a realigning of MasAgro priorities to the new national action plan. Risk mitigation in terms of negotiations with the donor is ongoing.
- ICARDA has been able to deliver on-time and on-budget on all but one project, despite adjusting to losing its HQ and implementing its decentralization strategy. For example, the new main wheat research platform in Morocco and satellite stations have been integrated into the ICARDA breeding effort in a two-way shuttle (bread wheat) between Morocco, Lebanon and Ethiopia, and three-way for durum wheat, with two cycles per year within Morocco and Lebanon, and a shuttle across the two countries each year.
- W1&2 funding uncertainty and uncoordinated reporting requirements (e.g. technical and financial, to the Consortium Board) have negatively affected WHEAT researchers' perceptions about CGIAR Reform, the majority of whom deliver towards bilaterally funded projects with their own reporting requirements.

H. LESSONS LEARNED

The WHEAT Management Committee and CIMMYT and ICARDA researchers, during their respective Science/Planning Weeks, reviewed WHEAT Flagship Projects. There was consensus to move from 10 to 6 Flagship Projects (since adjusted to 5 for the Extension Period). This was driven by the Consortium-wide effort to move to a more results- and outcome-based portfolio of CRPs.

CRPs of the size and complexity of WHEAT, composed of a significant number of funding sources and implemented globally, require a portfolio-type, not project-type management approach. The WHEAT Management Committee discussed and the Lead Center Senior Management developed an organizational change approach to instituting 'strategy implementation' leaders at Clusters of Activity level, which will be realized in 2014.

The CGIAR Reform needs to put a greater effort in enabling institutional change, which requires a clear vision (SRF), a consistent performance framework and a realistic implementation framework (e.g. budgets need to be secured for at least a year and buffered against income variation; realistic timelines to implement change, such as adjustment of processes and systems). Transaction costs are far too high.

Further CRP-internal reporting streamlining efforts (standard template; use of CIMMYT Research Management System as document depository and for Key Performance Indicator reporting) were realized in 2013, to make scientists' progress reporting to bilateral donors and the CRP Team as uncomplicated as possible. A Consortium-wide M&E Framework based on Intermediate Development Outcomes and progress indicators should help to better align progress monitoring criteria across projects, however funded.

Annex 1: Acronyms and Abbreviations

2WT	two-wheel tractor
A4NH	CGIAR Research Program on Agriculture for Nutrition and Health
ACIAR	Australian Centre for International Agricultural Research
ACLIMAS-EU	Adaption to Climate Change of the Mediterranean Agricultural Systems
AIFSC	Australian International Food Security Centre
AR4D	Agricultural research for development
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AVRDC	World Vegetable Center
BBSRC	UK Biotechnology and Biological Sciences Research Council
BGRI	the Borlaug Global Rust Initiative
BMGF	Bill & Melinda Gates Foundation
BMZ	Federal Ministry for Economic Cooperation and Development, Germany
BOT	Board of Trustees
CA	Conservation agriculture
CAAS	Chinese Academy of Agricultural Sciences (CAAS)
CCAFS	CGIAR research program on Climate Change, Agriculture and Food Security
CCARDESA	Center for the Coordination of Agricultural Research and Development in Southern Africa
CCAS	Center for Chinese Agricultural Policy
CIAT	International Center for Tropical Agriculture
CO	Consortium office
CPG	WHEAT competitive partner grant
CSIRO	Australia's Commonwealth Scientific and Industrial Research Organization
CSISA	Cereal Systems Initiative for South Asia
DAC	Development assistance committee
DAOs	District agriculture officers
DRRW	Durable Rust Resistance in Wheat Project
EIAR	Ethiopian Institute of Agricultural Research
FACASI	Farm Mechanization and Conservation Agriculture for Sustainable Intensification project
FARA	Forum for Agricultural Research in Africa
GBS	Genotyping-by-sequencing
GRiSP	Global Rice Science Partnership
GS	Genomic selection
ha	hectares
ICAR	Indian Council of Agricultural Research
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDOs	Intermediate development outcomes
IFAD	International Fund for Agricultural Development
IGP	Indo-Gangetic Plains
ILRI	International Livestock Research Institute
IPNI	International Plant Nutrition Institute
IRRI	International Rice Research Institute

IWIN	International wheat improvement network
IWYP	International Wheat Yield Partnership
JICA	Japan International Cooperation Agency
JIRCAS	Japan International Research Center for Agricultural Sciences
KPI	Key performance indicator
MasAgro	*Modernización Sustentable de la Agricultura Tradicional*
MC	Management committee
MNFSR	The Pakistan Ministry of National Food Security and Research
MoA	Ministry of Agriculture
Mt	million tons
MYAP	USAID-funded Multi-Year Assistance Program
N	Nitrogen
NAAFS	Ningxia Academy of Agricultural and Forestry Sciences
NARS	National agricultural research systems
NDVI	Normalized difference vegetation index
PARC	Pakistan Agricultural Research Council
PIM	CGIAR Research Programs on Policies, Institutions and Markets
QTL	Quantitative trait loci (QTL)
R&D	Research and development
RWC	Rice Wheat Consortium (RWC) for Indo-Gangetic Plains
SAGA	Agricultural Genetic Analysis Service, Mexico
SARD-SC	Support to Agricultural Research for Development on Strategic Commodities of the African Development Bank
SC	Stakeholder committee
SeeD	Seeds of Discovery
SIAP	Mexico's *Servicio de Información Agroalimentaria y Pesquera*
t	tons
UC-Davis	University of California, Davis
UCLA	University of California, Los Angeles
UNDP	United Nations Develop Programme
UPMC-Bioemco	Laboratory *Biogéochimie et écologie des milieux continentaux* of the University Pierre et Marie Curie, Paris, France
USAID	U.S. Agency for International Development
W4A	Wheat for Africa
WIT	Jeanie Borlaug Laube Women in Triticum Early Career Award
WYC	Wheat Yield Consortium
YR	Yellow rust
ZT	Zero tillage

Annex 2: WHEAT Gender Priority Actions 2014-15

Gender performance self-assessment as per Annex 5, p.23: Approaching requirements.

Challenges

- The relation between scope-time-resources. The WHEAT Gender Strategy was developed with a three-year vision. Although significant progress has been achieved in integrating gender into its research and operational frameworks and general staff awareness, there is a need to review the scope and time-frame of the gender strategy.
- Related to the former: Gender activities delayed due to slow CO processing of resources channeled via the CO.

Priority actions for 2014-15:

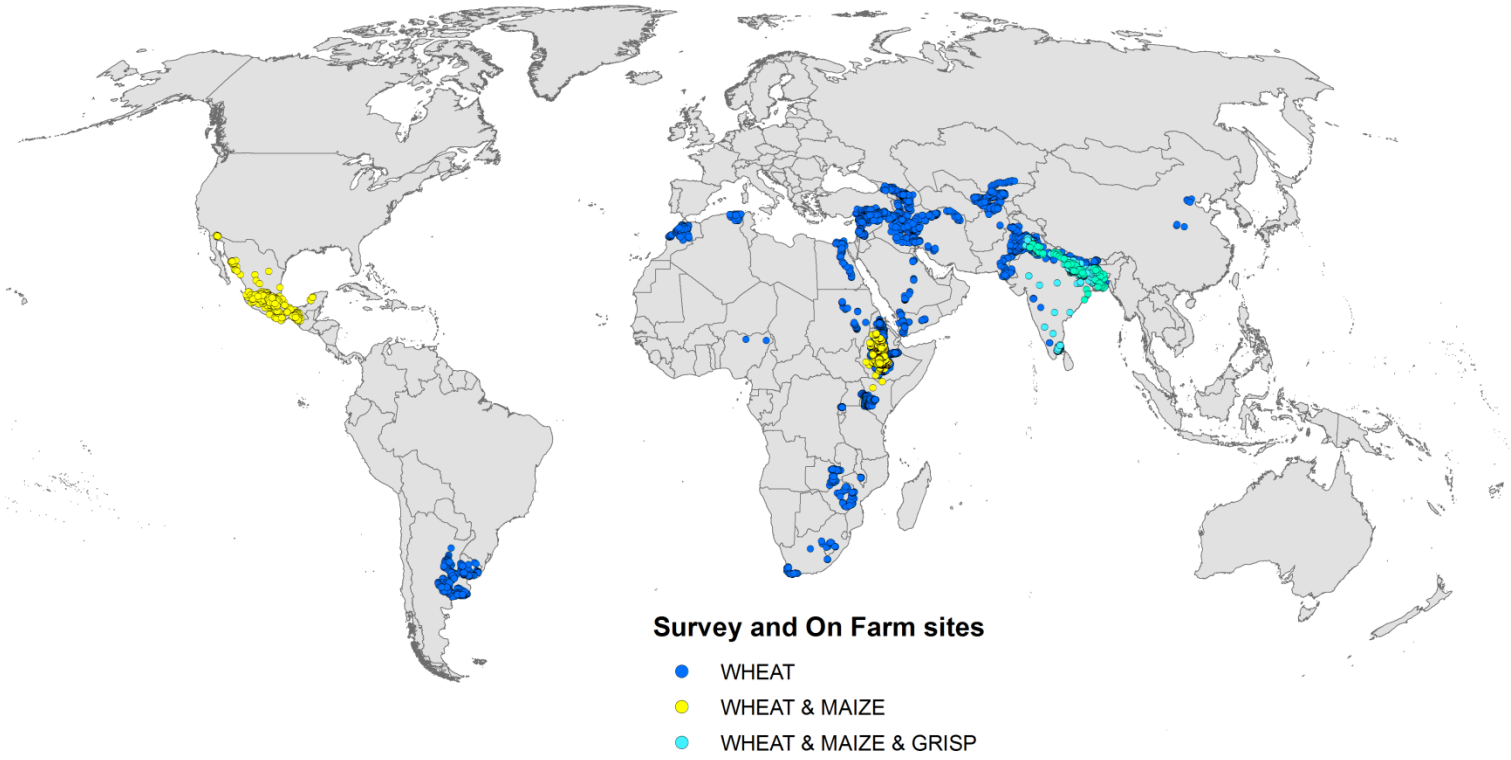
1. Implement cross-CRP gender norms and agency study
2. Strengthen integration of gender considerations into design of new projects and project cycle, to expand the number of projects with significant impact on gender equality / equity (2012-2013: From 1 to 4 large projects under WHEAT). Includes strengthening gender expertise within WHEAT, eg, new gender position in S Asia.
3. Develop and roll out a gender capacity strengthening strategy that accommodates different learning needs as well as different ways of learning, albeit within an overall framework.

Introducing DAC Gender Markers into WHEAT Budgeting

Levels		*Criteria/Examples*
4 - Projects with gender equality as the SOLE objective	100%	Sole use for (strategic) gender research. Budgets of gender specialists.
3 - … a PRINCIPAL objective	75%	Majority are women beneficiaries and they are selected and will be likely the main partners/beneficiaries/users of the project results.
2 - … a SIGNIFICANT objective	25%	Gender is mainstreamed in these projects and significant/substantive benefit by women is will be achieved and documented.
1 - … with SOME CONTRIBUTION to gender equality	10%	Projects with evidence that they work on women prioritized constraints (eg processing, quality, HH food security) or generate products/outcomes that are particularly relevant for women (eg lower wheat prices). Effort to reach women needs to be made.
0 - Projects that do not expect to contribute significantly to gender equality	0%	Gender neutral research; Examples: Genebank, molecular breeding, bioinformatics.

Adapted from UNDP Approach; Further information: http://www.gender-budgets.org/index.php?option=com_joomdoc&task=document.download&path=resources/by-theme-issue/financing-for-gender-equality/tracking-gender-related-investments-in-undp&Itemid=823, http://www.wikigender.org/index.php/Gender_Equality_Marker_System; http://www.undp.org/content/dam/undp/library/corporate/fast-facts/english/FF-Gender-and-Institutional-Development2.pdf

Annex 3: WHEAT household, surveillance survey & on-farm sites and innovation platforms/hubs in 2013



Annex 4: CRP indicators of progress, with glossary and targets

CRPs concerned by this indicator	Indicator	Glossary & Comments	Deviation narrative (if actual is more than 10% away from target)	2012		2013		2014
				Target (if available for 2012)	Actual	Target	Actual	Target
KNOWLEDGE, TOOLS, DATA								
All	1. Number of flagship "products" produced by CRP	*Glossary: These are frameworks and concepts .. they should be likely to change the way stakeholders along the impact pathway allocate resources and/or implement activities .. change the way these stakeholders think and act.* *Specify what type of products, from above glossary, you have included in the number indicated under 2013; if relevant specify geographic locations*			10	10	10	10
All	2. % of flagship products produced that have explicit target of women farmers/NRM managers	Included in FPs: 1 Technology targeting for greatest impact 2 Sustainable wheat-based systems 8 More and better seed 10 Strengthening capacities No of large projects with significant impact on gender equality / equity 2012-2013: From 1 to 4			3	3	4	4
All	3. % of flagship products produced that have been assessed for likely gender-disaggregated impact	WHEAT Gender Audit				10	10 of which 2 more in-depth	10
All	4. Number of "tools" produced by CRP	Includes: precision phenotyping applications, decision-support tools for farmers, large distribution manuals (e.g. CSISA / Bangladesh), certification course design and implementation (MasAgro)	WHEAT changed what it counts		327 (16 co-developed with other CRPs)	522 *changed to* **25**	23 (17 co-developed with other CRPs)	26
All	5. % of tools with explicit target of women farmers	Tools target men and women users equally						
All	6. % of tools assessed for likely gender-disaggregated	Tools are not assessed individually but at flagship product level						

	impact							
All	7. Number of open access databases maintained by CRP	IWIS, GRIS (wheatpedigree.net), IWIP.org, rusttracker.org, Wheat Atlas and Wheat Doctor (taken off the web Dec 2013) **Not included**: Cereal Knowledge Bank, http://www.knowledgebank.irri.org/wheat.ht, maintained by IRRI (with 118,671 unique pageviews)			5	5	6	To be reviewed
All	8. Total number of users of these open access databases	Unique visitors (**not included**: Cereal Knowledge Bank)	2013 figures to be re-checked			124,450	54,767	
All	9. Number of publications in ISI journals produced by CRP				121 (18 with other CRPs)	121	121 (23 jointly with other CRPs)	
1,2,3, 4, 6	10. Number of strategic value chains analyzed by CRP	Ethiopia: addition 2013; 3 for India/CSISA (wheat value chains in states Bihar, Haryana and Madhya Pradesh)			5	5	4	2
1,5,6,7	11. Number of targeted agro-ecosystems analysed/characterised by CRP							
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)	From CIMMYT KPI/RMS plus Competitive Partner Grants Plus ICARDA figures			18,220 (14,144 shared with ther CRPs)	16,415	14,232 (171 with other CRPs)	17,000
All	14. Number of trainees in short-term programs facilitated by CRP (female)	(see above, but for female) CIMMYT: Includes 4,028 PVS and non-PVS) trials, with evaluation of 453 (of 648 total) technologies for women farmers			4,886	5,226	3,068 (73 with other CRPs)	To be reviewed
All	15. Number of trainees in long-term programs facilitated by CRP (male)	From CIMMYT KPI/RMS plus Competitive Partner Grants plus ICARDA figures			30	40	121 (7 with other CRPs)	To be reviewed
All	16.Number of trainees in long-term programs facilitated by CRP (female)	(see above, but for female)			19	23	65 (4 with other CRPs)	To be reviewed
1,5,6,7	17. Number of multi-stakeholder R4D innovation	Relevant to WHEAT CSISA: 12 (India, Nepal, Bangladesh), MasAgro 14, China 1; ICARDA: 6 each in Ethiopia, Sudan, Nigeria			38	43	45	

	platforms established for the targeted agro-ecosystems by the CRPs							
TECHNOLOGIES/PRACTICES IN VARIOUS STAGES OF DEVELOPMENT								
All	18. Number of technologies/NRM practices under research in the CRP (Phase I)	CIMMYT: KPI/RMS[21] 2013 Germplasm: 124000 Note: large 2012 number due to large-scale phenotyping by Seeds of Discovery (FP9). In 2013, focus changed to in-depth evaluation. 2013 Agronomy: 460 No ICARDA figures other than for variety releases see 27			265,730	260,000	124,517	
All	19. % of technologies under research that have an explicit target of women farmers	Technologies targeted at flagship project level, not individually						
All	20. % of technologies under research that have been assessed for likely gender-disaggregated impact	See above						
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 CRP's recommends	Use the same classification of agro-ecosystem as for indicator 11 above, including geographical location and agro-ecological zone						
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						

[21] Indicator figures are based on CIMMYT Research Management System/KPI per scientist, aggregated; and ICARDA figures provided seperately: CIMMYT KPI's are: Germplasm-into-use/coded line; Knowledge-into-use/publications; People trained/formal training event, graduate students, visiting students, Technology & Socioeconomics-into-use: Trial, Survey, demonstrations, Chains analysed, Policies; Software and Data-into-use: Software, Map, Study; Other services or products delivered to users; Outcomes or Impacts achieved: H-factor, Institutional Outcome, variety released, seed produced, documented adoption study.

All, except 2	23. Number of technologies /NRM practices field tested (phase II)	CIMMYT KPI/RMS Note: large 2012 number due to large-scale phenotyping by Seeds of Discovery (FP9). In 2013, focus changed to in-depth evaluation			34,850	2,600		
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)	WHEAT does not report on this indicator, but at least 6 innovations are being tested under CSISA, FACASI, MasAgro in S. Asia, Africa, Mexico respectively; see narratives on mechanization						
1,5,6,7	25. % of above innovations/approaches/ options 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)	Need to report variety releases by NARES here, as indicators 33-34 count only ha or people ICARDA (15): 9 varieties were released Spring Bread Wheat BW (Afghanistan, Lebanon, 2 Ethiopia, 1 Sudan), 6 durum varieties (Lebanon, Turkey) and 1 winter wheat (Turkey)			50	50	46	50
POLICIES IN VARIOUS STAGES OF DEVELOPMENT								
All	28. Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)				3	2	6	2
All	29. Number of policies / regulations / administrative procedures drafted and presented for public/stakeholder	W4A at FARA Science Week			3	1		

	consultation (Stage 2)							
All	30. Number of policies / regulations / administrative procedures presented for legislation (Stage 3)				0	0	1	1
All	31. Number of policies / regulations / administrative procedures prepared passed/approved (Stage 4)	: …underwent the fourth stage of the policy reform process (official approval (legislation/decree) of new or revised policy / regulation / administrative procedure by relevant authority). Clearly identify in this cell the type of policy and the country/region concerned						
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) Clearly identify in this cell the type of policy and the country/region concerned						
OUTCOMES ON THE GROUND								
All	33. Number of hectares under improved technologies or management practices as a result of CRP research	Refers to 2013 target, based on known seed production of WHEAT improved germplasm to extrapolate hectares, assuming average farm size 1 hectare; under review, working on harmonizing different project reporting formats to make them comparable and extract data applicable for relevant time period (e.g. during 2013)			1,500,000	1,650,000	1,650,000	
All	34. Number of farmers and others who have applied new technologies or management practices as a result of CRP research	References 2013 target stated in AR2012 – see 33 above – based on CIMMYT and ICARDA reporting to USAID/FTF (Number of farmers and others who have applied new technologies or management practices as a result of USG assistance)			1,650,000	2,802,000	2,802,000	

Annex 5: Performance indicators for gender mainstreaming with targets defined

Performance Indicator	CRP performance approaches requirements	CRP performance meets requirements	CRP performance exceeds requirements
1. Gender inequality targets defined	Sex-disaggregated social data is being collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs)	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs) 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
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. - 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 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 And A CRP plan approved for capacity development in gender analysis	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 And 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

Annex 6: Common IDOs WHEAT is committed to and relevant indicators of progress (ideas stage; Status: November 2013)

		Commodity CRPs	MAIZE or WHEAT		Ideas for indicators: Detail					
	CGIAR Research Program (CRP)/ IDO'S	**CRP 3.1**	**Indicator**	**Indicator**	**Germplasm**				**Systems**	
	Updated Common IDOs	**Wheat**	**Germplasm**	**Systems**						
1	***Productivity*** *- Improved productivity in pro-poor food systems*	Smallholders' modern wheat varieties adoption translates into higher, more stable yields in wheat target region	% adoption On-farm (land, labor, energy, water, nutrient) productivity increase among adopters	% adoption On-farm (land, labor, energy, water, nutrient) productivity increase among adopters	No of new germplasm with improved traits shared with NARS for testing, parental use and/or release, via International Trials & Nurseries, genetic subsets et al (more of an output indicator)	No of new varieties (linked to WHEAT research outputs; direct / parentage) released by NARS (private, public sector)	… and adopted by farmers, per 3-year period AND/OR WHEAT target geography / areas sown with WHEAT-derived varieties (GRiSP: Farmers' yield; area under adoption of new technologies	No of WHEAT-related protocols & guides provided and promoted to NARS & researcher community (knowledge into use) AND/OR used by no of farmers	No of WHEAT-related protocols & guides provided and promoted to NARS & researcher community (knowledge into use)	
2	***Food security*** *- Increased and stable access to food commodities by rural and urban poor*	Accelerated varieties release scaled out, Farmers have more & better access to quality seed & use them (adoption & replacement rates over time go up) **to enable increased production and availability for rural & urban poor**	Food-secure days	Food-secure days	Average time-to-release of new variety, per WHEAT-targeted country (indicator for accelerated variety release & health of seed sector)	X farmers in y countries maintain yield & quality in targeted *heat &/or drought-prone areas*			No (incl integrated sets of) technologies (e.g. CA, IPM) tested with farmers and made available to extension agents for adaptation & adoption in target areas [add: survey extension agents' ability to access information, level of preparation and identify regions that need additional support] GRiSP: # farmers adopting new technologies	food secure days spelt out in detail
3	***Nutrition*** *- Improved diet quality of nutritionally-vulnerable populations, especially women and children*	tbd for WHEAT	Malnutrition among women and children in participating communities	Malnutrition among women and children in participating communities	(CRP4) Diet diversity; intake of selected micronutrient by target population				tbd	

4	***Income*** *- Increased and more equitable income from agricultural and natural resources management and environmental services earned by low income value chain actors*	Farmers improve their household income & livelihood	Producer & consumer benefit	Income increase in participating communities	ave ha size of farm	no of male/female children of farm households with access to and getting education	(PIM) in selected countries, for wheat value chain of importance to smallholders, net income of participating smallholders	GRiSP: Income from rice farming; value addition through speciality products	productivity increase among adopters, based on cost reduction and/or revenue increase	
5	***Gender & Empowerment*** *- Increased control over resources and participation in decision-making by women and other marginalized groups*	Greater women farmer equity in wheat production & value chains and more youth seize opportunities in wheat-based systems		Income increase by women	tbd	GRiSP: women empowerment index	(PIM) for same value chains, change in WEAI for females participating		tbd	
6	***Capacity to Innovate*** *- Increased capacity for innovation within low income and vulnerable rural communities allowing them to improve livelihoods*	tbd for WHEAT		# participating communities	tbd				tbd	
7	***Adaptive capacity*** *- Increased capacity in low income communities to adapt to environmental and economic variability, shocks …*									
8	***Environment*** *- Minimized adverse environmental effects of increased production intensification*	Farmers minimise unsustainable effects on soil, enviroment	Land, labor, energy, water, nutrient savings	Land, labor, energy, water, nutrient savings					X farmers in y countries experience less soil erosion, cause less nitrate leaching and suffer less P losses, in targeted wheat-based systems (GRiSP: water, fertiliser productivity)	X farmers in y countries increase NUE without losing yield in targeted wheat-based systems
			Reduced pesticide use	Reduced pesticide use					X farmers in y countries optimize pesticide use, in targeted wheat-based systems [provide system to record application x time	

								x type] GRiSP: Pesticide use
9	***Policies*** *– More effective policies, supporting sustainable, resilient and equitable agricultural and natural resources management developed and adopted by agricultural, conservation and development organizations, national governments and international bodies*							
10	***Future Options*** *- Greater resilience of agricultural/forest/water based/mixed crop livestock, aquatic systems for enhanced ecosystem services*		Income variation	Income variation	tbd for MAIZE			tbd for MAIZE
	Genetic diversity for future generations ***- integrate into IDO 1***	Faster and more significant genetic gains (research) in breeding programs worldwide, using more effective approaches for complex traits	Diversity distributed		indicator for genetic discovery; genetic yield potential gains, p.a. (GRiSP: genetic gain; rice genetic diversity parameter)	Number of specialized genetic stocks (accessions, genotypes of wild relatives and landraces, special mapping populations, mutation stocks, etc.) for gene discovery and pre-breeding		
11	***Climate*** *- Increased carbon sequestration and reduction of greenhouse gases through improved agriculture and natural resources management*							GRiSP: Improved delivery and service partners

Annex 7: CRP FINANCIAL REPORT

There are 9 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/Flagship Project and by Cluster of activities[22]
6. Report XXX- CRP expenditure on gender research by Theme/Flagship Project and by Cluster of activities[23]
7. Report L201 - CRP Bilateral Grants Summary - by CG Center
8. Report L211 - CRP Partnerships Report- by CG Center
9. Report L401 - CRP Funding Statement – Windows 1 and 2

The templates for CRP financial reporting by CRP Directors and Lead Centers are attached as Appendix 3.

Note that there is also a requirement for interim financial reports – the first four reports are also submitted to the Consortium at the half-year stage, and Report L401 is required quarterly.

[22] An explanatory note for this item is forthcoming
[23] An explanatory note for this item is being prepared

Explanatory notes on the financial reports:

1 – Report L101 – Annual CRP Budget Summary – by CG Participant and Theme

Annual report of income & expenditure compared to the approved Finplan, from all the various funding sources. The information is obtained by the Lead Center from the CG Participants, and the Lead Center consolidates the reports from the participating centers, so that the summary report is available at either Center-level or Theme-level.

1 – Report L102 – Cumulative CRP Budget Summary – by CG Participant and Theme

Report of income & expenditure to date on a cumulative base, from all the various funding sources, and compares that to the CRP total budget (also called "Whole of Life" budget) as per the PIA. The information is obtained by the Lead Center from the CG Participants, and the Lead Center consolidates the reports from the participating centers, so that the summary report is available at either Center-level or Theme-level.

2 – Report L121 - CRP Expenditure by natural classification- by CG Center

Provides a comparison of annual actual expenditure against the approved Finplan budget of the CRP, by natural classification, by CGIAR center. It ensures there is a realistic balance between the various components, and in particular provides information on funds flowing to partners outside the CGIAR. The report has data from each CG Center, and the information is for all the various funding sources. The information in this report is also reported in the annual financial statements of each center.

3 – Report L201 - CRP Bilateral Grants Summary - by CG Center

Information on Bilateral Grants/Donors is needed so that their contributions to individual CRP's can be monitored. This will help with forecasting cash flow requirements. The report has data from each CG Center, and sets out expenditure to date on a cumulative base, from each individual donor. Amounts should be in accordance with L101 figures, for each center.

4 – Report L211 - CRP Partnerships Report- by CG Center

This report provides an indicator on the extent of partner participation in the CRPs. It provides the name of the institute and country alongside the amount of expenditure.

5 – Report L401 -CRP Funding Statement – Windows 1 and 2

This report provides a summary of CRP cashflows, from the CO to Lead Centers and onto partners, during a financial year. This also reports intercenter receivables/payables at period end, and these balances need to be confirmed with relevant participating centers. This report is required to assist cash forecasting, and hence is requested quarterly.

Cross-cutting areas (for Report L101 only)

In addition to the "themes", there are two "cross-cutting areas" which should be reported separately:

Area 1 – CRP Strategy, Management and Coordination

Area 2 – Implementation of Gender Strategy

Note that more cross-cutting areas may be recognized in the future, but for 2012 lead centers are requested to provide financial data only on two.

Responsibilities

The CRP Lead Centers are responsible for consolidation of each CRP financial report, and submission to the CO.

The Participating Centers are responsible for submission of their CRP financial information to the Lead Centers, and ensuring that all inter-center amounts receivable/payable are in agreement with counterpart centers.

CRP : 3.1 CRP on Wheat

Period: 01/01/2013 - 12/31/2013 **Cumulative Financial Summary**

Amounts in USD (000's)

Report Description Report L101

Name of Report: Cumuative 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					-					-	-	-	-	-	-
3. CIAT					-					-	-	-	-	-	-
4. CIFOR					-					-	-	-	-	-	-
5. CIMMYT	20,625	6,893	39,697	-	67,216	19,370	5,799	34,676	-	59,845	1,255	1,094	5,021	-	7,370
6. CIP					-					-	-	-	-	-	-
7. ICARDA	4,624	4,652	14,502	-	23,777	4,104	2,762	7,967	-	14,833	520	1,890	6,534	-	8,944
8. ICRAF					-					-	-	-	-	-	-
9. ICRISAT					-					-	-	-	-	-	-
10. IFPRI					-					-	-	-	-	-	-
11. IITA					-					-	-	-	-	-	-
12. ILRI					-					-	-	-	-	-	-
13. IRRI					-					-	-	-	-	-	-
14. IWMI					-					-	-	-	-	-	-
15. WORLDFISH					-					-	-	-	-	-	-
Total for CRP	**25,249**	**11,545**	**54,199**	**-**	**90,993**	**23,474**	**8,561**	**42,644**	**-**	**74,678**	**1,775**	**2,984**	**11,555**	**-**	**16,314**
	28%	**13%**	**60%**	**0%**	**100%**	**31%**	**11%**	**57%**	**0%**	**100%**	**11%**	**18%**	**71%**	**0%**	**100%**

CRP : **3.1 CRP on Wheat**
Period: **01/01/2013 - 12/31/2013**
Amounts in USD (000's)

Annual Funding Summary

Report Description Report L106

Name of Report: Annual Funding Summary

Frequency/Period: Annual

Deadline: Every April 15th

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

Approved Level for Year - Initial Approval (as per PIA)

Approved Level for Year - Final Amount

PART 2 - Funding Summary for Year

		2013 Actual Funding			
		Windows 1&2	**Window 3**	**Bilateral Funding**	**Total Funding**
1	CGIAR Fund	11,982			11,982
2	Arcadia		-	321	321
3	BMGF		2,122	(0)	2,122
4	CAAS China		118	1	119
5	Cornell		-	3,645	3,645
6	GIZ		-	1,143	1,143
7	ICAR, India		368	-	368
8	IRRI		-	705	705
9	Japan		374	242	616
10	JIRCAS		-	53	53
11	Kansas		-	131	131
12	SAGARPA		-	5,954	5,954
13	Turkey		443	-	443
14	USAID		2,115	352	2,467
16	IITA (AfDB)		-	990	990
17	European Commission		672	-	672
18	AFESD		-	410	410
19	USDA		-	409	409
20	GRDC		-	400	400
21	Kuwait Fund		-	265	265
22	Islamic Development Bank		-	204	204
23	CIMMYT		-	156	156
24	Egypt - ARC		-	82	82
25	OFID		-	82	82
26	The Generation Challenge Program		-	54	54
27	Others < $50K?		11	95	106
					-
Total for CRP "X.X"		**11,982**	**6,223**	**15,693**	**33,898**

CRP : 3.1 CRP on Wheat

Period: 01/01/2013 - 12/31/2013

Amounts in USD (000's)

Annual Financial Summary by Centers

Report Description L111

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. BIOVERSITY					-					-	-	-	-	-	-
3. CIAT					-					-	-	-	-	-	-
4. CIFOR					-					-	-	-	-	-	-
5. CIMMYT	10,092	6,310	12,413	-	28,815	9,574	4,782	11,396	-	25,752	518	1,529	1,017	-	3,063
6. CIP					-					-	-	-	-	-	-
7. ICARDA	2,408	3,237	9,355	-	14,999	2,408	1,441	4,297	-	8,146	0	1,796	5,057	-	6,853
8. ICRAF					-					-	-	-	-	-	-
9. ICRISAT					-					-	-	-	-	-	-
10. IFPRI					-					-	-	-	-	-	-
11. IITA					-					-	-	-	-	-	-
12. ILRI					-					-	-	-	-	-	-
13. IRRI					-					-	-	-	-	-	-
14. IWMI					-					-	-	-	-	-	-
15. WORLDFISH					-					-	-	-	-	-	-
Total for CRP	**12,500**	**9,547**	**21,767**	**-**	**43,815**	**11,982**	**6,223**	**15,694**	**-**	**33,898**	**518**	**3,325**	**6,074**	**-**	**9,916**
	29%	**22%**	**50%**	**0%**	**100%**	**35%**	**18%**	**46%**	**0%**	**100%**	**5%**	**34%**	**61%**	**0%**	**100%**

CRP : 3.1 CRP on Wheat
Period: 01/01/2013 - 12/31/2013
Amounts in USD 000's

Annual Financial Summary by Natural Classification

Report Description
L121

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
Total CRP"X.X"	**POWB Approved Budget**					**Actual**					**Unspent/Variance**				
Personnel	4,601	1,873	7,269	-	13,743	4,328	1,305	4,183	-	9,817	272	568	3,086	-	3,926
Collaborators Costs - CGIAR Centers	340	1,537	19	-	1,897	245	1,115	36	-	1,396	95	422	(17)	-	500
Collaborator Costs - Partners	2,556	2,246	1,948	-	6,749	1,849	1,344	1,987	-	5,179	707	902	(39)	-	1,570
Supplies and services	1,918	1,984	7,966	-	11,868	2,436	1,292	6,057	-	9,785	(517)	692	1,909	-	2,084
Operational Travel	676	503	1,726	-	2,906	558	300	948	-	1,807	118	203	778	-	1,099
Depreciation	959	256	425	-	1,640	1,006	168	546	-	1,720	(46)	88	(122)	-	(80)
Sub-total of Direct Costs	**11,050**	**8,400**	**19,353**	**-**	**38,803**	**10,422**	**5,524**	**13,758**	**-**	**29,704**	**629**	**2,876**	**5,595**	**-**	**9,099**
Indirect Costs	1,450	1,147	2,414	-	5,011	1,560	698	1,936	-	4,194	(111)	449	479	-	817
Total - All Costs	**12,500**	**9,547**	**21,767**	**-**	**43,815**	**11,982**	**6,223**	**15,694**	**-**	**33,898**	**518**	**3,325**	**6,074**	**-**	**9,916**
LESS Coll Costs CGIAR Centers	(340.1)	**(1,537)**	**(19)**	**-**	**(1,897)**	**(245)**	**(1,115)**	**(36)**	**-**	**(1,396)**	**(95)**	**(422)**	**17**	**-**	**(500)**
Total Net Costs	**12,160**	**8,010**	**21,748**	**-**	**41,918**	**11,737**	**5,107**	**15,658**	**-**	**32,502**	**423**	**2,903**	**6,091**	**-**	**9,416**

Amounts for each participating center below:

CIMMYT	POWB Approved Budget					Actual					Unspent/Variance				
Personnel	3,641	1,476	5,197		10,314	3,368	1,128	3,220		7,717	272	348	1,977	-	2,598
Collaborators Costs - CGIAR Centers	340	1,537	19		1,897	245	1,115	36		1,396	95	422	(17)	-	500
Collaborator Costs - Partners	2,527	1,227	759		4,513	1,820	890	1,434		4,145	707	337	(675)	-	368
Supplies and services	1,361	1,122	3,981		6,464	1,878	909	4,204		6,990	(517)	214	(223)	-	(526)
Operational Travel	472	187	900		1,558	354	159	564		1,077	118	27	336	-	481
Depreciation	703	122	(141)		684	750	108	283		1,141	(46)	13	(424)	-	(457)
Sub-total of Direct Costs	**9,044**	**5,671**	**10,715**	**-**	**25,429**	**8,415**	**4,310**	**9,741**	**-**	**22,466**	**629**	**1,361**	**974**	**-**	**2,964**
Indirect Costs	1,048	640	1,698		3,386	1,159	472	1,656		3,287	(111)	167	43	-	99
Total - All Costs	**10,092**	**6,310**	**12,413**	**-**	**28,815**	**9,574**	**4,782**	**11,396**	**-**	**25,752**	**518**	**1,529**	**1,017**	**-**	**3,063**
LESS Coll Costs CGIAR Centers	(340.1)	**(1,537)**	**(19)**	**-**	**(1,897)**	**(245)**	**(1,115)**	**(36)**	**-**	**(1,396)**	**(95)**	**(422)**	**17**	**-**	**(500)**
Total Net Costs	**9,752**	**4,773**	**12,394**	**-**	**26,919**	**9,329**	**3,666**	**11,360**	**-**	**24,356**	**423**	**1,107**	**1,033**	**-**	**2,563**

ICARDA	POWB Approved Budget					Actual					Unspent/Variance				
Personnel	960	397	2,072	-	3,429	960	177	964	-	2,100	0	220	1,108	-	1,329
Collaborators Costs - CGIAR Centers	-	-	-		-	-	-	-		-	-	-	-	-	-
Collaborator Costs - Partners	28	1,019	1,189		2,236	28	454	553		1,035	-	566	636	-	1,202
Supplies and services	558	862	3,985		5,405	558	383	1,853		2,795	0	478	2,132	-	2,610
Operational Travel	204	317	827		1,348	204	141	385		730	0	176	442	-	618
Depreciation	256	135	566		956	256	60	263		579	0	75	303	-	377
Sub-total of Direct Costs	**2,006**	**2,729**	**8,638**	**-**	**13,374**	**2,006**	**1,215**	**4,017**	**-**	**7,238**	**0**	**1,515**	**4,621**	**-**	**6,136**
Indirect Costs	401	508	716		1,625	401	226	280		908	0	281	436	-	717
Total - All Costs	**2,408**	**3,237**	**9,355**	**-**	**14,999**	**2,408**	**1,441**	**4,297**	**-**	**8,146**	**0**	**1,796**	**5,057**	**-**	**6,853**
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	**2,408**	**3,237**	**9,355**	**-**	**14,999**	**2,408**	**1,441**	**4,297**	**-**	**8,146**	**0**	**1,796**	**5,057**	**-**	**6,853**

CRP : 3.1 CRP on Wheat
Period: 01/01/2013 - 12/31/2013
Amounts in USD 000's

Annual Financial Summary by Themes

CGIAR
Science for a food secure future

Report Description L131

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

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
Summary Report - by Themes			
SI 1 Socioeconomics	1,463	1,371	92
SI 2 Systems	4,100	2,725	1,375
SI 3 NUE & WUE	1,565	808	757
SI 4 Wheat varieties	12,388	9,140	3,248
SI 5 Diseases & pests	5,193	4,271	922
SI 6 Heat & drough	3,134	2,643	491
SI 7 Yield barrier	2,291	2,146	145
SI 8 Seed	3,635	1,782	1,853
SI 9 Seeds of	5,719	5,188	531
SI 10 Capacity building SI1-SI9	672	616	56
Gender Strategies	2,978	2,480	498
CRP Management/Coordination	677	728	(52)
Total - All Costs	**43,815**	**33,898**	**9,916**

CIMMYT			
SI 1 Socioeconomics	1,234	1,168	66
SI 2 Systems	4,100	2,725	1,375
SI 3 NUE & WUE	704	629	74
SI 4 Wheat varieties	4,430	4,754	(324)
SI 5 Diseases & pests	4,364	3,610	754
SI 6 Heat & drough	2,331	2,246	85
SI 7 Yield barrier	2,291	2,146	145
SI 8 Seed	110	107	3
SI 9 Seeds of	5,379	4,961	418
SI 10 Capacity building SI1-SI9	217	197	20
Gender Strategies	2,978	2,480	498
CRP Management/Coordination	677	728	(52)
Total - All Costs	28,815	25,752	3,063

ICARDA			
SI 1 Socioeconomics	229	203	26
SI 2 Systems	-	-	-
SI 3 NUE & WUE	861	178	683
SI 4 Wheat varieties	7,958	4,386	3,573
SI 5 Diseases & pests	829	661	167
SI 6 Heat & drough	803	397	406
SI 7 Yield barrier	-	-	-
SI 8 Seed	3,525	1,675	1,850
SI 9 Seeds of	340	227	113
SI 10 Capacity building SI1-SI9	455	419	36
Gender Strategies	-	-	-
CRP Management/Coordination	-	-	-
Total - All Costs	14,999	8,146	6,853

CRP : 3.1 CRP on Wheat
Period: 01/01/2013 - 12/31/2013

Amounts in USD 000's

Report Description Report L211

CRP Partnership Report

CGIAR
Science for a food secure future

Name of Report: CRP Partnerships Report

Frequency/Period: Annual
Deadline:
Every April 15th

TOTAL FOR CRP "X.X"

Item	Institute Acronym	Institute Name	Country	Actual Expenses - This Year: Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	ICARDA	ICARDA-CAC (CENTRAL ASIA AND THE CAUCASUS ASSOCIATION OF AGRICULTURAL RESEARCH INSTITUTIONS)	Lebanon	205	-	-	-	**205**
2	IRRI	International Livestock Research Institute	Philippines	-	711	36	-	**747**
3	IDE	INTERNATIONAL DEVELOPMENT ENTERPRISES	Bangladesh	-	547	-	-	**547**
4	DAT	DIVERSITY ARRAYS TECHNOLOGY, PTY LTD.	Australia	-	-	419	-	**419**
5	IFPRI	INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE	USA	40	283	-	-	**323**
6	INIFAP	INSTITUTO NACIONAL DE INVESTIGACIONES FORESTALES AGRICOLAS Y PECUARIAS	Mexico	-	1	316	-	**316**
7	LU	LANCASTER UNIVERSITY	UK	270	-	-	-	**270**
8	ICAR	INDIAN COUNCIL FOR AGRICULTURAL RESEARCH	India	137	(15)	91	-	**212**
9	IAS	INSTITUTO DE AGRICULTURA SOSTENIBLE	Spain	208	-	-	-	**208**
10	IPKG	IPK GATERSLEBEN	Germany	-	-	145	-	**145**
11	BDIARI	BAHRI DAGDAS INTERNATIONAL AGRICULTURAL RESEARCH INSTITUTE	Turkey	143	-	-	-	**143**
12	IISEARK	INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH KOLKATA	India	130	-	-	-	**130**
13	UCOGCU	THE UNIVERSITY COURT OF GLASGOW CALEDONIAN UNIVERSITY	Escocia	130	-	-	-	**130**
14	ILRI	INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE.	Ethiopia	-	121	-	-	**121**
15	OSU	OREGON STATE UNIVERSITY	USA	120	-	-	-	**120**
16	KRIGBASPK	KASHKADARYA RESEARCH INSTITUE OF GRAIN BREEDING AND SEED PRODUCTION KRIGBSP	Qarshi	111	-	-	-	**111**
17	BHU	BANARAS HINDU UNIVERSITY	India	80	16	15	-	**110**
18	ROUM	REGENTS OF THE UNIVERSITY OF MINNESOTA	USA	-	105	-	-	**105**
19	EIAR	ETHIOPIAN INSTITUTE OF AGRICULTURAL RESEARCH	(blank)	-	-	100	-	**100**
20	AUL	ADAS UK LTD	UK	60	-	-	-	**60**
21	WU	WAGENINGEN UNIVERSITY	Holanda	56	-	-	-	**56**
22	IWWIP	International Winter Wheat Improvement Program	Turkey	-	53	-	-	**53**
23	AUFAS	AARHUS UNIVERSITY FACULTY OF AGRICULTURAL SCIENCES	Denmark	40	-	10	-	**50**
24	BARI	BANGLADESH AGRICULTURAL RESEARCH INSTITUTE	Bangladesh	16	12	22	-	**49**
25	SDSU	SOUTH DAKOTA STATE UNIVERSITY	USA	-	-	49	-	**49**
26	CCAS	CENTER CHINESE ACADEMY OF	china	48	-	-	-	**48**

		SCIENCES						
27	PAU	PUNJAB AGRICULTURAL UNIVERSITY	India	-	27	16	-	**43**
28	CIEAIPN	CENTRO DE INVESTIGACION Y DE ESTUDIOS AVANZADOS DEL INSTITUTO POLITECNICO NACIONAL	Mexico	15	27	-	-	**42**
29	UONT	UNIVERSITY OF NOTTINGHAM	UK	30	-	10	-	**39**
30	JIC	JOHN INNES CENTRE	UK	30	-	5	-	**35**
31	TB	TURCO-BRITISH	Turkey	-	31	-	-	**31**
32	CASP	CREATIVE AGRI SOLUTIONS PVT. LTD.	India	30	-	-	-	**30**
33	UASK	UNIVERSITY OF AGRICULTURE SCIENCES KRISHINAGAR	India	-	27	-	-	**27**
34	DWR	DIRECTORATE OF WHEAT RESEARCH	India	-	27	-	-	**27**
35	NMRP	NATIONAL MAIZE RESEARCH PROGRAM	Nepal	-	27	-	-	**27**
36	UBKV	UTTAR BANGA KRISHI VISWAVIDYALAYA	India	17	-	10	-	**27**
37	CSIRO	Commonwealth Scientific and Industrial Research Organisation	Australia	25	-	-	-	**25**
38	Others < $25	other	(blank)	127	7	226	-	**361**
39	ARIGLCI	Galla-aral Branch of the Andijan Research Institute of Grain and Legume Crops	Uzbekistan	1	-	-	-	**1**
40	GAPIARTC	GAP INTERNATIONAL ARI AND TRAINING DIRECTORATE,DIYARBAKIR	Turkey	-	3	-	-	**3**
41	GAP ARI	GAP ARI,SANLIURFA	Turkey	-	6	-	-	**6**
42	TARI	TRAKYA AGRICULTURAL RESEARCH INSTITUTE	Turkey	-	8	-	-	**8**
43	AARI	AEGEAN AGRICULTURAL RESEARCH INSTITUTE	Turkey	-	5	-	-	**5**
44	BDIARI	BAHRI DAGDAS INTERNATIONAl Agricultural Research Institute	Turkey	-	15	-	-	**15**
45	EAARI	East Anatolia Agricultural Research Institute	Turkey	-	4	-	-	**4**
46	EIAR	Ethiopian Institute of Agricultural Research	Ethiopia	-	250	-	-	**250**
47	ARC	Agricultural Research Center	Sudan	-	-	72	-	**72**
48	INRA	Institut National de la Recherche Agronomique	Morocco	-	30	-	-	**30**
49	INRAA	Institut National de la Recherche Agronomique d'Algerie	Algeria	-	-	4	-	**4**
50	INRAT	The Institute of Agronomic Research in Tunisia	Tunisia	-	3	-	-	**3**
51	ARC	Agricultural Research Center	Egypt	-	63	139	-	**202**
52	GAPTAEM	GAP TARIMSAL ARASTIRMA ENSTITUSU MUDURLUGU	Turkey	-	6	-	-	**6**
53	AREA	Agricultural Research and Extension Authority	Yemen	-	-	39	-	**39**
54	INGC	Institut National des Grandes Cultures	Tunisia	-	-	5	-	**5**
55	IAGS	Institute of Agricultural Sciences	Pakistan	-	-	26	-	**26**
56	NCARE	National Center for Agricultural Research and Extension	Jordan	-	1	8	-	**8**
57	NIBGE	National Institute of Biotechnology & Genetic Engineering	Pakistan	-	-	26	-	**26**
58	OAR	Office of Agricultural Research	Iraq	-	-	11	-	**11**
59	NARS	National Agricultural Research Systems	Turkey	-	11	-	-	**11**
60	NARC	National Agriculture Research Center	Pakistan	-	-	4	-	**4**
61	Uni Bonn	Universitat Kassel Bonn	Bonn	-	-	68	-	**68**
62	CRI	Central Research Institute, Konya	Turkey	-	15	-	-	**15**
63	IWWIP	IWWIP Material Havest Activities.	Turkey	-	2	-	-	**2**
64	SRIG	Scientific Research Institute of Grain	Turkmenistan	-	-	3	-	**3**
65	ARS	Agricultural Research Station, Bahawalpur	Pakistan	-	-	2	-	**2**
66	GCSAR	General Commission for	Syria	-	-	7	-	**7**

67	CCRI	Scientific Agricultural Research Central Cotton Research Institute, Multan	Pakistan	-	-	36	-	**36**
68	CEMB	Centre for Excellence Molecular Biology Punjab University	Pakistan	-	-	29	-	**29**
69	KRIGBSP	Kashkadarya RI of Grain Breedind and Seed Production	Uzbekistan	-	-	13	-	**13**
70	KRASS	Khorezm Rural Advisory Support Service	Uzbekistan	-	-	4	-	**4**
71	Others	Others		27	32	58	-	**118**
Total for CRP				**2,094**	**2,459**	**2,023**	**-**	**6,576**

1. AFRICA RICE

Item	Institute Acronym	Institute Name	Country	Actual Expenses - This Year: Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1								-
2								-
		Total for CRP		-	-	-	-	-

2. BIOVERSITY

Item	Institute Acronym	Institute Name	Country	Actual Expenses - This Year: Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1								-
2								-
3								-
4								-
5								-
6								-
7								-
8								-
9								-
10								-
11								-
12								-
13								-
14								-
15								-
16								-
17								-
18								-
		Total for CRP		-	-	-	-	-

3. CIAT				Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1								-
2								-
3								-
4								-
5								-
6								-
7								-
8								-
9								-
10								-
11								-
12								-
13								-
14								-
15								-
16								-
		Total for CRP		-	-	-	-	-

4. CIFOR				Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	-	-	-					-
		Total for CRP		-	-	-	-	-

5. CIMMYT				Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	ICARDA	ICARDA-CAC (CENTRAL ASIA AND THE CAUCASUS ASSOCIATION OF AGRICULTURAL RESEARCH INSTITUTIONS)	Lebanon	205	-	-		**205**
2	IRRI	International Livestock Research Institute	Philippines	-	711	36		**747**
3	IDE	INTERNATIONAL DEVELOPMENT ENTERPRISES	Bangladesh	-	547	-		**547**
4	DAT	DIVERSITY ARRAYS TECHNOLOGY, PTY LTD.	Australia	-	-	419		**419**
5	IFPRI	INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE	USA	40	283	-		**323**
6	INIFAP	INSTITUTO NACIONAL DE INVESTIGACIONES FORESTALES AGRICOLAS Y PECUARIAS	Mexico	-	1	316		**316**
7	LU	LANCASTER UNIVERSITY	UK	270	-	-		**270**
8	ICAR	INDIAN COUNCIL FOR AGRICULTURAL RESEARCH	India	137	(15)	91		**212**
9	IAS	INSTITUTO DE AGRICULTURA SOSTENIBLE	Spain	208	-	-		**208**
10	IPKG	IPK GATERSLEBEN	Germany	-	-	145		**145**
11	BDIARI	BAHRI DAGDAS INTERNATIONAL AGRICULTURAL RESEARCH INSTITUTE	Turkey	143	-	-		**143**
12	IISEARK	INDIAN INSTITUTE OF	India	130	-	-		**130**

13	UCOGCU	SCIENCE EDUCATION AND RESEARCH KOLKATA THE UNIVERSITY COURT OF GLASGOW CALEDONIAN UNIVERSITY	Escocia	130	-	-		**130**
14	ILRI	INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE.	Ethiopia	-	121	-		**121**
15	OSU	OREGON STATE UNIVERSITY	USA	120	-	-		**120**
16	KRIGBASPK	KASHKADARYA RESEARCH INSTITUE OF GRAIN BREEDING AND SEED PRODUCTION KRIGBSP	Qarshi	111	-	-		**111**
17	BHU	BANARAS HINDU UNIVERSITY	India	80	16	15		**110**
18	ROUM	REGENTS OF THE UNIVERSITY OF MINNESOTA	USA	-	105	-		**105**
19	EIAR	ETHIOPIAN INSTITUTE OF AGRICULTURAL RESEARCH	(blank)	-	-	100		**100**
20	AUL	ADAS UK LTD	UK	60	-	-		**60**
21	WU	WAGENINGEN UNIVERSITY	Holanda	56	-	-		**56**
22	IWWIP	International Winter Wheat Improvement Program	Turkey	-	53	-		**53**
23	AUFAS	AARHUS UNIVERSITY FACULTY OF AGRICULTURAL SCIENCES	Denmark	40	-	10		**50**
24	BARI	BANGLADESH AGRICULTURAL RESEARCH INSTITUTE	Bangladesh	16	12	22		**49**
25	SDSU	SOUTH DAKOTA STATE UNIVERSITY	USA	-	-	49		**49**
26	CCAS	CENTER CHINESE ACADEMY OF SCIENCES	china	48	-	-		**48**
27	PAU	PUNJAB AGRICULTURAL UNIVERSITY	India	-	27	16		**43**
28	CIEAIPN	CENTRO DE INVESTIGACION Y DE ESTUDIOS AVANZADOS DEL INSTITUTO POLITECNICO NACIONAL	Mexico	15	27	-		**42**
29	UONT	UNIVERSITY OF NOTTINGHAM	UK	30	-	10		**39**
30	JIC	JOHN INNES CENTRE	UK	30	-	5		**35**
31	TB	TURCO-BRITISH	Turkey	-	31	-		**31**
32	CASP	CREATIVE AGRI SOLUTIONS PVT. LTD.	India	30	-	-		**30**
33	UASK	UNIVERSITY OF AGRICULTURE SCIENCES KRISHINAGAR	India	-	27	-		**27**
34	DWR	DIRECTORATE OF WHEAT RESEARCH	India	-	27	-		**27**
35	NMRP	NATIONAL MAIZE RESEARCH PROGRAM	Nepal	-	27	-		**27**
36	UBKV	UTTAR BANGA KRISHI VISWAVIDYALAYA	India	17	-	10		**27**
37	CSIRO	Commonwealth Scientific and Industrial Research Organisation	Australia	25	-	-		**25**
38	Others < $25	other	(blank)	127	7	226	-	**361**
39								
40								
		Total for CRP		**2,065**	**2,005**	**1,470**	**-**	**5,541**

7. ICARDA				Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country	Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	ARIGLCI	Galla-aral Branch of the Andijan Research Institute of Grain and Legume Crops	Uzbekistan	1				**1**
2	GAPIARTC	GAP INTERNATIONAL ARI AND TRAINING DIRECTORATE,DIYARBAKIR	Turkey		3			**3**
3	GAP ARI	GAP ARI,SANLIURFA	Turkey		6			**6**
4	TARI	TRAKYA AGRICULTURAL RESEARCH INSTITUTE	Turkey		8			**8**
5	AARI	AEGEAN AGRICULTURAL RESEARCH INSTITUTE	Turkey		5			**5**
6	BDIARI	BAHRI DAGDAS INTERNATIONAl Agricultural Research Institute	Turkey		15			**15**
7	EAARI	East Anatolia Agricultural Research Institute	Turkey		4			**4**
8	EIAR	Ethiopian Institute of Agricultural Research	Ethiopia		250			**250**
9	ARC	Agricultural Research Center	Sudan			72		**72**
10	INRA	Institut National de la Recherche Agronomique	Morocco		30			**30**
11	INRAA	Institut National de la Recherche Agronomique d'Algerie	Algeria			4		**4**
12	INRAT	The Institute of Agronomic Research in Tunisia	Tunisia		3			**3**
13	ARC	Agricultural Research Center	Egypt		63	139		**202**
14	GAPTAEM	GAP TARIMSAL ARASTIRMA ENSTITUSU MUDURLUGU	Turkey		6			**6**
15	AREA	Agricultural Research and Extension Authority	Yemen			39		**39**
16	INGC	Institut National des Grandes Cultures	Tunisia			5		**5**
17	IAGS	Institute of Agricultural Sciences	Pakistan			26		**26**
18	NCARE	National Center for Agricultural Research and Extension	Jordan		1	8		**8**
19	NIBGE	National Institute of Biotechnology & Genetic Engineering	Pakistan			26		**26**
20	OAR	Office of Agricultural Research	Iraq			11		**11**
21	NARS	National Agricultural Research Systems	Turkey		11			**11**
22	NARC	National Agriculture Research Center	Pakistan			4		**4**
23	Uni Bonn	Universitat Kassel Bonn	Bonn			68		**68**
24	CRI	Central Research Institute, Konya	Turkey		15			**15**
25	IWWIP	IWWIP Material Havest Activities.	Turkey		2			**2**
26	SRIG	Scientific Research Institute of Grain	Turkmenistan			3		**3**
27	ARS	Agricultural Research Station, Bahawalpur	Pakistan			2		**2**
28	GCSAR	General Commission for Scientific Agricultural Research	Syria			7		**7**
29	CCRI	Central Cotton Research Institute, Multan	Pakistan			36		**36**
30	CEMB	Centre for Excellence Molecular Biology Punjab University	Pakistan			29		**29**
31	KRIGBSP	Kashkadarya RI of Grain Breedind and Seed Production	Uzbekistan			13		**13**
32	KRASS	Khorezm Rural Advisory Support Service	Uzbekistan			4		**4**
33		Others		27	32	58		**118**
34								
		Total for CRP		**28**	**454**	**553**	**-**	**1,035**