



2014
MAIZE CRP

ANNUAL REPORT

for the Consortium
and the Fund
Council



Research
Program on
MAIZE

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Part I – Technical report

A. Key messages

A.1 Synthesis of progress and Challenges

During 2014, MAIZE made strong progress on both of its research strategies, stress resilient and nutritious maize and sustainable intensification of maize-based systems. In total, 70 maize varieties were released through MAIZE partners; 48 in eastern, southern and western Africa; 14 in Mexico, one in Columbia; 7 in Asia (Nepal 4 and Afghanistan 3). Some of the key traits stacked in these varieties include: drought tolerance, nitrogen use efficiency, tar spot resistance, increased Provitamin A content (linked to the CGIAR Research Program on Agriculture for Nutrition and Health - A4NH CRP), ear rot or mycotoxin resistance, and *Turcicum* leaf blight resistance (see Figure 1 below).

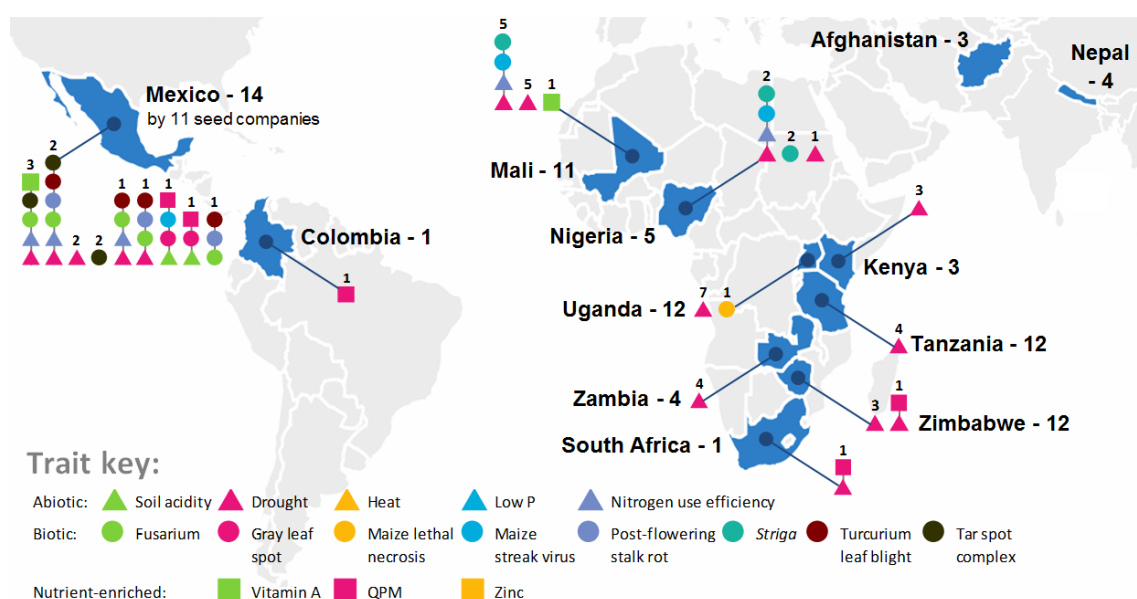


Figure 1: Maize varieties released by MAIZE CRP partners in 2014, with depiction of key traits. Only available information represented.

MAIZE and its partners continued to spearhead efforts to combat the emergence of Maize Lethal Necrosis (MLN) as a major challenge to the maize sector in Eastern Africa since 2011. MAIZE works closely with both public and private sector partners to identify/develop and deliver [new sources of resistance to MLN](#). Among new CGIAR-derived products, UH5354, was released by the National Agricultural Research Organization (NARO) in Uganda, and commercialized via the Nalweyo Seed Company (NASECO). In Kenya, H12ML, an elite hybrid with MLN tolerance was produced by Kenya Seed Company. Three more MLN tolerant elite maize hybrids are scheduled for release in 2015. Large-scale phenotypical screening at [the MLN Screening Facility established with the Kenya Agricultural and Livestock Research Organization \(KALRO\) at Naivasha](#), Kenya and the use of facility by partners gained momentum in 2014.

The Drought Tolerant Maize for Africa (DTMA) project supported the commercial release of 33 new drought-tolerant varieties, totaling 160 new varieties since 2007 and facilitated the production of more than 40,000 metric tons (MT) of certified seed, sufficient to plant 1.6 – 2 million hectares. In two years of the Water Efficient Maize for Africa (WEMA) Deployment Phase II, 36 hybrids have been approved for commercialization through 23 seed companies in Kenya, Uganda, Tanzania and South Africa; 28.4 tons of foundation seed has been produced. The Improved Maize for African Soils (IMAS) project submitted 7 hybrids for release that combine MLN tolerance with performance under low N. In Latin America, three Tar Spot resistant hybrids were released through partners in Mexico in 2014. Three Tar Spot resistant hybrids are scheduled to be released in Guatemala (2) and in Honduras (1) in 2015. In 2014, the Heat Tolerant Maize for Asia (HTMA) project in Asia generated 24 hybrids that were taken forward for large-scale adaptive trials followed by scaling-out in all four partnering countries, including India, Nepal, Pakistan and Bangladesh. At least 5 hybrids in Bangladesh and 4

hybrids in Nepal are identified by national program and seed producers for formal registration and advanced to deployment.

The Sustainable Intensification strategy in MAIZE addresses challenges to maize-based farming systems through an increasing number of innovation platforms (51 in Africa, 40 in South Asia and 41 in Latin America); which aim to strengthen multi-stakeholder collaboration in Latin America, Africa and Asia. To achieve impact at scale and proposing site and farm specific integrated adoptable solutions requires the use of systems research approaches and the development and use of conceptual frameworks. An example of this is MAIZE's partnership with [Wageningen University](#). Given the increased use of Innovation Platforms for iterative learning and scaling-up and scaling out new technologies and approaches, collaboration with the [Royal Tropical Institute](#) (KIT) expanded in 2014 to include capacity strengthening of MAIZE partners in Agricultural Innovation Systems thinking and application. In 2014, a new project was launched that combined the systems work of Wageningen with the Innovation Platform work of KIT. "Enhancing the effectiveness of systems analysis tools to support learning and innovation in multi-stakeholder platforms" will inform the lines of work for up to [four pilot sites](#) in Zambia (Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa - SIMLEZA-Africa Rising), Mexico (Sustainable Modernization of Traditional Agriculture program - MasAgro), Ethiopia (Farm Mechanization and Conservation Agriculture for Sustainable Intensification - FACASI) and South Asia (Cereal Systems Initiative for South Asia - CSISA).

Among sustainable intensification options, [Thierfelder et al.](#) (2014) studied yield response of maize to conservation agriculture (CA) in southern Africa, discovering yield advantages of 1152 kg/ha and 1172 kg/ha in two manual CA systems in Malawi, planted with a dibble stick with sole maize and maize-legume intercropping, respectively. Another [study](#) found that DSSAT crop simulation models can be a useful tool to help project future weather effects of climate change on yield, economic returns and risk in conventional tillage (CT) and CA systems, helping farmers to make better informed adoption decisions.

A study by the International Plant Nutrition Institute ([IPNI](#)), funded by a MAIZE competitive grant initiative, found that the Nutrient Expert® fertilizer decision support tool operated by extension workers improved maize yields by 40 percent, and up to 60 percent for marginalized women farmers.

In Sub-Saharan Africa, trials showed that a bio-herbicide Foxy2 in combination with *Striga*-resistant varieties increased grain yield by 1.4 t/ha in on-farm trials, with a net benefit of US\$722/ha. The bio-herbicide does not produce known mycotoxins that pose health risks to farmers, attacks all growth stages of *Striga*, and is compatible with other complementary technologies for *Striga* control. Molecular detection tools specific to Foxy2 have been developed that unequivocally differentiate the bio-control agent from other pathogenic and mycotoxin-producing fungi.

This year also saw funding commitment to and progress on the [Cross-CRP Global Study on Gender Norms, Agency and Innovation in Agriculture and Natural Resource Management](#). MAIZE and WHEAT contributed over US\$500,000 in 2014 and will invest the same again in 2015, with data collection already complete for more than 19 out of the 70+ case studies.

In October 2014, [the 12th Asian Maize Conference](#) was jointly organized by the Asia-Pacific Association of Agricultural Research Institutions (APAARI), the International Maize and Wheat Improvement Center (CIMMYT), the Food and Agriculture Organization of the United Nations (FAO) and the Department of Agriculture (DOA)-Thailand at Bangkok, Thailand. The conference, co-sponsored by MAIZE, attracted the participation of nearly 300 stakeholders from 30 countries, including researchers, policy makers, service providers, innovative farmers and representatives of various public and private organizations. The discussions led to [15 specific recommendations for MAIZE Phase 2](#), capturing the stakeholder priorities, especially for doubling maize production and productivity in the region and strengthening maize value chains.

Last but not least, the MAIZE Independent Evaluation Arrangement (IEA) has been very positive, with the Evaluation Team considering it "highly plausible that MAIZE and its partners will reach the medium term goal, which is to increase maize productivity in the two MAIZE target groups by 7 percent in 2020 and 33 percent in 2030." Over 4 million farmers are estimated to have benefited from MAIZE research outputs in 2014.¹ MAIZE technologies have been applied by farmers on at least 2.3 million ha of land as direct result of CRP projects².

¹ Evidence based on key bilateral project progress reports and performance information collected in various institutional databases. The key geographic countries in which the adoption has been observed include: Angola, Bangladesh, Benin, Ethiopia, Ghana, India, Kenya, Tanzania, Zambia, Malawi, Mali, Mexico, Mozambique, Nepal, Nigeria, Uganda and Zimbabwe.

² Use of germplasm by third parties has an additional impact not measured in this report.

Major challenges to the CRP include: cost of MLN to maize producers and consumers in eastern Africa; inadequate opportunities to strategically analyze successes and challenges to the adoption of new technologies/innovations within the maize based systems work due to low proportions of W1&W2 funding.

A.2 Synthesis of two most significant achievements

Combating Maize Lethal Necrosis (MLN) in Africa: an update

CIMMYT, KALRO and MAIZE partners continue to spearhead efforts to combat MLN. A recent study by CIMMYT Socioeconomics team in Kenya³ indicated the loss of 23 percent of maize production to MLN in 2014: approximately 2.1 million metric tons. Declining consumer confidence, and the cost of ensuring MLN-free seed, is affecting small and medium enterprise (SME) seed companies.

The [MLN Screening Facility](#) funded by the Bill and Melinda Gates Foundation ([BMGF](#)), the Syngenta Foundation for Sustainable Agriculture ([SFSA](#)) and MAIZE, and established jointly by CIMMYT and [KALRO](#) at Naivasha, Kenya in September 2013 has enabled the screening of over 26,000 inbred lines, 10 mapping populations, 21,000 pre-commercial hybrids and 80 commercial cultivars. The facility is being used by CIMMYT, the International Institute for Tropical Agriculture ([IITA](#)) and an array of public and private sector partners in Sub-Saharan Africa (SSA), including the National Agricultural Research Systems (NARS) partners in Kenya, Malawi, Mozambique Rwanda, Tanzania and Uganda, and seed companies such as Syngenta, Monsanto, DuPont-Pioneer, Kenya Seed Company, NASECO, Western Seed Company, Zamseed, Seedco, East Africa Seeds, Aminata, and many others. Promising inbred lines with MLN tolerance identified over the last three years are being used to improve elite germplasm and CIMMYT Maize Lines (CMLs), combining nutrient-use efficiency (NUE), drought and MLN tolerance. Promising exotic/temperate genetic materials (e.g. from the United States Department of Agriculture - Agricultural Research Service - USDA-ARS/Ohio State University) are also being used to derive new and diverse sources of MLN tolerance. Experiments are being undertaken to understand how the germplasm responds against each of the individual viruses (MCMV/SCMV) as well as in combination (MCMV + SCMV) under artificial inoculation. Such information is valuable for understanding the genetics of resistance to MLN, as well as in breeding strategies to bring in resistance to MCMV and SCMV from diverse sources. CIMMYT team is also in the process of converting about 25 elite Africa-adapted and MLN-susceptible inbred lines (parental lines of some prominent commercial hybrids based on CIMMYT germplasm) into MLN-resistant versions, using eight selected inbred lines as trait donors. This process is being fast-tracked by marker-assisted selection of genomic regions conferring resistance to MCMV/SCMV, coupled with doubled haploid (DH) technology.

Based on CIMMYT germplasm, UH5354 (registered by NARO), an MLN-tolerant variety, was released in 2014, and is being commercialized by NASECO. H12M1, another MLN-tolerant maize hybrid, was released in 2014 and is being produced by Kenya Seed Company. Two more MLN-tolerant elite hybrids are in the pipeline for commercialization – H13M2 in Kenya (registered by Kenya Seed Company) and HB607 in Tanzania (registered by Meru-Agro) that were recommended for release in 2014, and UH5558 in Uganda (registered by NARO) that is recommended for release in 2015.

An MLN quarantine facility will be established by CIMMYT in Harare to ensure safe introduction of improved maize germplasm from CIMMYT-Kenya, and for continued germplasm support to public and private institutions in southern Africa. A MAIZE competitive grant project implemented by the International Centre for Insect Physiology and Ecology (ICIPE) is investigating MLN insect vector dynamics. Through another MAIZE project, the Federal University of Technology, Nigeria, supported by IITA, is making proactive efforts to prevent the potential spread of MLN in Western and Central Africa.

³ Geographic distribution and impact of maize lethal necrosis (MLN) disease in Kenya, H. De Groote, S. Tongruksawattana, F. Oloo and B. Das, CIMMYT, to be published

Ramping up MAIZE's investments in Gender

Guided by the [MAIZE Gender Strategy and Gender Audit](#), in 2012 to 2014, MAIZE considerably increased investments in strategic gender research, internal capacity-building and mainstreaming gender-responsiveness into an increasing number of projects.

MAIZE gender experts are co-leading the [Cross-CRP Global Study on Gender Norms, Agency and Innovation in Agriculture and Natural Resource Management](#), in short referred to as 'Gennovate'. MAIZE and WHEAT contributed over US\$500,000 in 2014 and will invest the same again in 2015, with data collection already complete for more than 19 out of the 70+ case studies. MAIZE is helping to secure funds for the critical analysis and write-up phase that lies ahead. In each country a local field team is trained, contributing significantly to local capacity-building in qualitative social research approaches.

Other key investments include the KIT-led "[Gender Matters in Farm Power](#)" project to analyze the opportunities to empower both women and men small-scale farmers through appropriate-scale mechanization in the [FACASI](#) project. A recent assessment of maize varietal preferences of men and women farmers in West Africa explored important similarities and differences among male and female farmers. Cultural Practice LLC was commissioned to design and implement a gender competency framework and modular capacity-strengthening program for MAIZE.

The number of MAIZE bilateral projects with an explicit gender focus has risen from just 4 projects in December 2011, to over 20 projects in 2014, while the number of MAIZE and WHEAT Full Time Equivalent (FTE) gender staff grew from one in December 2011 to 8.5 FTE by early 2015.

A.3 Financial summary

MAIZE W1&W2 budget for 2014 was USD\$ 19.740 million (M) of which US\$ 19.312 M was expended. The total budget for MAIZE was US\$ 61.542 M. Total expenditures were slightly higher at US\$ 63.661 M. MAIZE results were also scaled out through supplementary projects valued at US\$ 25.3M. MAIZE continued to implement the United Nations Development Programme (UNDP) DAC marker in its financial analysis, which estimated a MAIZE gender budget of 14 percent (US\$ 9.130 million - including so far CIMMYT data only).

US\$ millions	POWB approved budget (2014)	Actual Expenditure (2014)
W 1 & 2	19,740	19,312
W3	13,045	16,398
Bilateral	28,757	27,952
Total	61,542	63,661

B. Impact pathway and intermediate development outcomes (IDOs)

Following a standardization of CRP structures, the MAIZE strategy was reorganized around five Flagship Projects (FPs) in 2014 (see Figure 2 in Annex 3). The FPs fall within the three MAIZE Research Strategies (RSs) and contribute to a number of Intermediate Development Outcomes (IDOs) and the four System Level Outcomes (SLOs), as illustrated in Figure 3 in Annex 3. Each FP is constituted of Clusters of Activities, representing an aggregation of projects and work packages. The core/central IDOs of MAIZE include: IDO1-Productivity, IDO2-Food Security, IDO4-Income and IDO9-Environment. The second tier IDOs to which MAIZE directly or indirectly contributes include: IDO3-Nutrition, IDO5-Gender, IDO6-Capacity to Innovate, IDO7-Capacity to Adapt, and IDO 11-Climate.

C. Progress along the impact pathway

C.1 Progress towards outputs

This Annual Report highlights achievements aligned with the three research strategies. Significant progress was made towards the delivery of 2014 outputs, achieving overall more than 89 percent of the outputs planned in the 2014 POWB. The CRP ranged from 79 percent for FP 4 to 90 percent and above for FP 1, FP 2, FP 3 and FP 5. The 79 percent of the FP 4 is due to a slower than expected performance of the competitive partner grants (Annex 1).

Percentage completion was less than 100 percent due to: a) unforeseen circumstances; b) budget insecurities experienced for W1&W2; and c) difficulties experienced by some MAIZE Competitive Grants Initiative (CGI) partners in meeting the exacting schedules for contracted deliverables.

1) Sustainable Intensification of Maize-based Systems

Sustainable Intensification of Maize-based Systems aims to pilot, scale-up and scale-out profitable, resource-efficient maize-based farming systems and value chain innovations to improve system productivity, resilience, sustainability and increase incomes of smallholders. This impact pathway continues to be spearheaded by three key projects in Mexico (funded by the Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación - SAGARPA), eastern and southern Africa (ESA) (Australia, the United States Agency for International Development – USAID - and the International Fund for Agricultural Development - IFAD) and South Asia (Australia, BMGF, USAID and IFAD). MAIZE W1&W2 funding continues to provide critical interventions and analyses in all three regions in support of cross-regional learning. For example, in 2014, a joint project was initiated to leverage the work of Wageningen (Agro-ecosystem Diversity, Trajectories and Trade-Offs for Intensification of Cereal-based systems – ATTIC - Project) and KIT (on Innovation Platforms).

In Mexico, studies in Guanajuato in the frame of the MasAgro project found that GreenSeeker technology saves farmers 50 kg units of nitrogen per hectare without sacrificing yield. MasAgro continues to adapt locally-available machinery to save on inputs through greater precision, such as the “Happy Seeder” technology imported from South Asia. The [MasAgro Móvil](#) project saw a 200 percent increase in users (3,148 current total) of its weather and agricultural recommendation text message service.

In ESA, an IPNI study was funded by the MAIZE CGI, finding that the [Nutrient Expert](#)[®] fertilizer decision support tool operated by extension workers improved maize yields by 40 percent, and up to 60 percent for marginalized women farmers. Using a gender-informed approach, 50 percent of the 102 extension workers trained were women, as were 40 percent of the 1,200 farmer participants in on-farm demonstrations.

In India, weaker and erratic monsoons, patchy irrigation services, depleting water tables and labor demands favor monsoon maize as a food security solution, but the predicted increase of drought and flooding events due to climate change are obstacles. In four successive years, demonstrations at Bihar in the frame of the [CSISA](#) project showed that bed planting of hybrid monsoon maize outperformed other options due to improved soil drainage (4.8 t/ha compared to 4.0 t/ha planted on the flat in 2014), while at Karnal, zero-till maize outperformed rice while using 90 percent less irrigation water. Twenty existing commercial and pipeline elite hybrids with a higher germination rate (80 percent) under drought anaerobic stress have been identified and shared with the private sector. Breeding efforts are also responding to this need: in 2014 a genomic region was identified as being strongly associated with combined drought and waterlogging tolerance for potential marker-assisted selection, along with two others that can be used selectively for each trait.

2) Stress Resilient and Nutritious Maize

MAIZE is market-driven and invests heavily in the development of maize lines and varieties that possess key traits demanded by farmers, their families and the processors and urban consumers of maize. Key biotic and

abiotic threats are prioritized, and 'hidden' nutritional traits are developed and advocated. Private sector collaboration and capacity building is key to this approach.

Developing and deploying climate-resilient maize through PPPs Africa – The [DTMA](#) project facilitated the production of more than 40,000 MT of certified seed in 2014, and supported Ethiopia to replace two hybrids that have dominated the maize sector for over 20 years. Within the first two years of [WEMA](#) Phase II, as many as 36 hybrids have been approved for commercialization through 23 seed companies in Kenya, Uganda, Tanzania and South Africa; 28.4 tons of foundation seed has been produced to help them reach the target of 2,000 tons of certified seed. Monsanto is assisting by bulking pre-foundation seed for 35 lines to jumpstart commercialization, and working with the African Agricultural Technology Foundation ([AATF](#)) to establish the Foundation Seed Crop Plan System. Collaboration between WEMA, DTMA and IMAS has grown through a joint monitoring and evaluation working group as well as coordinated regional on-station and on-farm variety trials. These collaborations culminated in the DTMASS (Drought Tolerant Maize for Africa Seed Scaling) project, funded by USAID, for scaling-up and delivering improved maize seed in seven countries in ESA.⁴

Asia - The Affordable, Accessible, Asian (AAA) Drought Tolerant Maize Project is a partnership between CIMMYT, Syngenta and NARS in Indonesia and Vietnam. In this project, funded by [SFSA](#), CIMMYT's drought-tolerant germplasm adapted to Asia is being combined with Syngenta's elite germplasm for generating drought-tolerant three-way cross hybrids, besides hybrids derived using only CIMMYT's drought tolerant parental lines. The project combines complementary breeding technologies, development of phenotyping facilities, and comparative advantages of partners to develop and deliver improved stress resilient maize varieties for stress-prone smallholder farmers in marginal environments in Asia. A set of five promising AAA three-way cross hybrids will be deployed in the dry belt of Central India, where they outperformed the best check by up to a ton per hectare in terms of grain yield; five potential private sector partners will perform large-scale evaluation of these hybrids in 2015.

The [HTMA](#) project, funded by USAID, is being implemented in Bangladesh, Bhutan, India, Nepal and Pakistan. The project is designed to develop and deploy heat-tolerant elite maize hybrids through public-private partnerships. By the end of the second year (September 2014), a set of 24 first-generation hybrids were identified and taken forward for large-scale adaptive trials, and for potential scaling-out in the partner countries. At least 5 hybrids in Bangladesh and 4 hybrids in Nepal have been identified by the respective national program and seed producers for formal registration and deployment. The project builds on public-private partnerships, including seven public sector partners and three seed companies. New public-private partnerships (involving local seed companies) are also envisioned in each country for effective deployment of heat tolerant maize hybrids. For example: in Bangladesh, four seed companies submitted a request for partnering with Bangladesh Agricultural Research Institute (BARI) and CIMMYT, for hybrid licensing and deployment. Similar partnerships are also being built in India, Nepal and Pakistan.

Nitrogen Use Efficiency (NUE) - The IMAS phenotyping network expanded to over 120,000 research plots at 25 locations in 10 countries in Sub-Saharan Africa; 20 percent of these phenotyping locations are at private sector research stations. A large population of DH lines derived through IMAS project has greatly accelerated breeding progress. In 2014, three confined field trial (CFT) sites for testing NUE transgenics were in advanced stage of certification by regulatory agencies. Forty-one new three-way cross hybrids were submitted for release in partnership with private sector seed companies in 10 ESA countries, along with 7 hybrids combining MLN tolerance with low N tolerance. Closer alignment with DTMA and WEMA projects is enabling more

⁴ DTMASS aims to facilitate the production of close to 12,000 MT of certified seed of drought tolerant maize varieties in the seven countries by end of the fifth year from the start of the project, benefiting approximately 400,000 households or 2.5 million people through increased production and productivity of maize and increased adoption of improved seed. The project has established strong partnerships with private and public seed companies, community-based organizations, NGOs and national extension systems to achieve its mission; a total of 53 seed companies have signed up to scale up 71 drought tolerant varieties.

efficient identification and dissemination of elite products with improved grain yield under water deficit and nitrogen limiting conditions.

Tar Spot Complex (TSC) – In response to the growing threat of [TSC](#) infection, resistance screening began in 2010 in several hotspots in Mexico, Honduras, El Salvador and Guatemala, identifying several promising experimental hybrids. In 2014, MAIZE partners released three TSC-resistant maize hybrids in Mexico, with a further three resistant hybrids (two in Guatemala and one in Honduras) scheduled for release in 2015.

DH technology has fast-tracked the development of breeding populations from the TSC-resistant variety CLWN247 in Mexico. Genotyping-by-sequencing was conducted at Cornell University through the Genomic Diversity Facility; genome-wide association study (GWAS) analysis led to the identification of SNP variants responsible for Tar Spot resistance, and *a priori* candidate gene mining via enrichment analysis was also conducted. Two highly-resistant Maize Germplasm Bank accessions identified in the phenotypic trials have been crossed and backcrossed with appropriate CML lines to both improve them for root lodging, a major defect in these resistant open pollinated populations; and in parallel to enhance disease resistance of elite CML lines. Select open pollinated germplasm produced via this process will be provided to farmers in Tar Spot disease endemic areas after evaluation for disease resistance, agronomic performance and client acceptability. Early generation lines with upward of 75 percent CML background will be made available to breeders to use to enhance Tar Spot Resistance of both elite breeding lines for variety development.

MAIZE and partners are also developing integrated tar spot management strategies for farmers, and are investigating the interplay between TSC and conservation agriculture.

Quality Protein Maize (QPM) - The Nutritious Maize for Ethiopia (NuME) project works to bring QPM to rural maize producers in Ethiopia, holding 1000 field days and QPM demonstration activities in 2014 and presenting two QPM hybrids, QHYB-1 and T QHYB-2, to the variety release committee. Their work has been greatly supported by the [Ethiopian government's decision](#) to plant at least 10 percent of all maize fields in Ethiopia with QPM in the next three years, an initiative created to demonstrate, popularize and promote QPM varieties as well as the potential of QPM as part of a balanced diet for smallholder farmers and urban dwellers, and for use in the food processing industry, livestock sector and export market.

3) Inclusive and profitable maize futures

A total of 36 studies to assess maize adoption and impact pathways in Africa, Mexico, Nepal and India were published in 2014, providing crucial information for project planning, targeting and evaluation.

Adoption of modern maize varieties: [Bezu et al. \(2014\)](#) in Malawi found that improved maize variety adoption is positively correlated with maize consumption, income and assets; has a greater welfare impact on poorer households; and is also related to food security. [Kassie et al. \(2014\)](#) found that adoption increases food security and quantified the impact of adoption scale. [Lyimo et al. \(2014\)](#) found in Tanzania that improved seed and production input availability were the two major constraints reducing maize productivity, whereas unpredictable prices in the local market were the major market constraint. [Beshir et al. \(2014\)](#) found a 30 percent adoption rate for hybrid maize among smallholders in Ethiopia's Central Rift Valley, positively related to farmer education, farm size, proportion of land dedicated to maize and elevation, and negatively to farmer age, extension visits (due to open-pollinated variety – OPV – promotion) and distance to market.

Drought/Stress tolerance: [La Rovere et al. \(2014\)](#) predicted that drought tolerant maize can conservatively generate US\$ 0.53 billion from increased harvests and reduced risk in project countries, and up to US\$0.88 billion – reducing poverty for over 4 million producers and consumers.

Gender: [Fisher and Kandiwa \(2014\)](#) found that women farmers were 11 percent less likely to adopt modern maize varieties than their male counterparts. The receipt of a seed and fertilizer subsidy increased the probability of adoption by 222 percent for female heads of household, suggesting that programs such as the Malawian Farm Input Subsidy Program had reduced the gender gap in improved variety adoption. [Kassie et al.](#)

(2014b) demonstrated a gap between male- and female-headed households in food security, with female headed households less food-secure than male headed households due to unobservable characteristics.

Aflatoxin mitigation: In 2014, more than 135 tons of the aflatoxin bio-control agent [Aflasafe™](#) were produced in IITA's Nigeria-based production unit, enough for deployment in 13,540 hectares. Of this, 118 tons were destined for Nigeria, 11 for Senegal, 3.4 for Zambia, and 1 each for Gambia, Ghana and Mozambique. Initial data from a separate study in Nigeria showed that farmers will receive a return of from 20 to 60 percent on investment in Aflasafe™. Currently, MAIZE supports *Aspergillus* strain identification/collection in Burkina Faso, Burundi, Rwanda, Tanzania and Malawi. The number of countries requesting Aflasafe™ continues to expand, and in Kenya a new Aflasafe™ production plant is scheduled to be constructed in 2015.

C. 2 Progress towards the achievement of outcomes

Integrated *Striga* Management

During 2014, the Integrated *Striga* Management for Africa ([ISMA](#)) Project directly reached over 270,000 smallholder farmers in northern Nigeria, and 120,000 in western Kenya, with maize varieties that produce grain yields up to 126 percent higher under *Striga* infestation, as compared to vulnerable commercial checks. A total of 112 tons of certified Imizapyr resistant (IR)-maize seed was produced by two seed companies in Kenya in 2014. IR-maize is conventionally bred herbicide resistant maize varieties combined with Imizapyr, an herbicidal seed coating. Also, in partnership with community based seed producers and private sector seed companies, about 1,243 tons of seed of *Striga*-resistant maize and 300 tons of *Striga*-resistant cowpea have been produced and disseminated to farmers in Nigeria through community, government, and commercial channels. Trials in the last three years showed that the bio-herbicide *Fusarium oxysporum* f. sp. *strigae* (Foxy2) in combination with *Striga*-resistant varieties increased grain yield by 1.4 t/ha in on-farm trials, with a net benefit of US\$722/ha. This bio-herbicide does not produce known mycotoxins that pose health risks to farmers, attacks all growth stages of *Striga*, and is compatible with other complementary technologies for *Striga* control. Molecular detection tools specific to Foxy2 have been developed that unequivocally differentiate the bio-control agent from other pathogenic and mycotoxin-producing fungi.

Big Business in Mechanizing Small Farms

The CSISA project supports a network of more than 1,700 mechanized service providers (or 'change agent intermediary') across India. Service Providers offer agricultural custom-hire services to farmers at affordable rates; for example, charging \$14.35 (Rs. 910) per hour for the tiller and \$15.78 (Rs. 1,000) per hour for the Mould Board plow. These service providers bring the benefits of modern agricultural mechanization even to the smallest farmers.

MasAgro in Mexico

In 2014, [MasAgro](#) reached over 200,000 farmers directly and benefitted more than 600,000 people. Farmers witnessed a 17 percent average increase in maize yields; increasing farm incomes by up to 30 percent. The program is now present in 30 states of Mexico. Data on 36,000 maize farmers was collected to improve targeting and technical support, and a survey of 24 local seed companies selling MasAgro hybrids found that they had sold enough hybrid seed to cultivate over 760,000 hectares in 2014, increasing sales 46 percent from 2011 to 2014. From 14.5 tons of basic seed and 26 tons of pre/commercial seed distributed by MasAgro, its network of 33 small- and medium-sized seed companies produced over 1.92 million kg of 26 new hybrids.

D. Gender research achievements

D.1 Selected gender research achievements

In addition to the research achievements highlighted in A.2 and C.1 ('Gennovate', KIT study into gender and mechanization), efforts to integrate gender considerations in participatory varietal selection continued in 2014 and as part of the seed system portfolio, a special study on gender as a customer attribute was implemented and a draft gender strategy for maize seed system development developed. Initiatives to integrate gender considerations in advisory service provision, small-scale entrepreneurship and conservation agriculture have continued.

In 2014, a study on gender and post-harvest management technologies was carried out in four countries of SSA, while MAIZE and WHEAT carried out a study to identify avenues to improve gender equality and empower women professionals in research. The write-ups for both studies are expected in 2015.

D. 2 Success and challenges in mainstreaming gender research

A revised version of the MAIZE gender strategy was developed and endorsed by the MAIZE management committee in November 2014. Scientists and research teams are increasingly demanding gender inputs and attempting to integrate gender considerations in maize research-for-development (R4D). Nevertheless, numerous challenges remain, particularly in relation to bilateral funding and insecurity in W1&2 funding, which significantly limits the basis to increase number of CRP gender staff and consultants.

Gender performance self-assessment as per Annex 2: approaching requirements.

E. Partnership building achievements

E. 1 Selected partnership building achievements

Given the strength of downstream partnerships funded predominantly via bilateral projects, MAIZE continues to strengthen strategic upstream partnerships. MAIZE invested in Wageningen University through the [ATTIC](#) project and KIT's work on Agricultural Innovation Systems. A new project involving both organizations (Effectiveness of System Analysis tools in Platforms -ESAP) was initiated in 2014. MAIZE's collaboration with IPNI was extended through the "Enhancing the capacity for dissemination of site-specific maize production intensification technologies under variable farm, climatic and soil fertility conditions in Kenya and Zimbabwe" project. And, Zimbabwe's Crop Breeding Institute's National Maize Breeding Programme received a [Presidential Award in Recognition of Critical Breakthrough in Maize Breeding in Zimbabwe](#), especially through new varieties developed (with funding support from MAIZE) excelling in tolerance to diseases and drought, as well as nitrogen use efficiency. The award recognized outstanding research in the production and release of the maize variety ZS265.

E.2 Strategic partnership issues

We continue to get a very strong and positive response to MAIZE competitive grants and allocate them on an annual basis, based on mid-year announcements. Allocation towards the end of the year allows better management of fluctuating W&W2 budgets offering substantial opportunities to invest in promising partner collaborations both within and outside the CGIAR.

E. 3 Interactions with other CRPs

MAIZE works closely with a number of CRPs. Some of the strategic collaborations are outlined here. MAIZE continues to fund the CGIAR Research Program on Livestock and Fish (L&F) for work on Dual Purpose Maize and works with WHEAT, the Global Rice Science Partnership (GRiSP), L&F, and the CGIAR Research Program on Water, Land and Ecosystems (WLE) in the CSISA Project. MAIZE and Humid Tropics co-fund a joint gender post

doc based at IITA in Ibadan. MAIZE, Humid Tropics and Roots, Tubers and Bananas (RTB) collaborate on maize/cassava intercropping in the Democratic Republic of Congo. MAIZE/ CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFs)/WLE co-funded “La Panamericana”, a systems characterization project in Nicaragua. MAIZE continues to collaborate with A4NH CRP on breeding provitamin A-enriched maize and the deployment of Aflasafe™. MAIZE is working closely with the commodity-focused CRPs (WHEAT, GRIISP, CGIAR Research Program on Grain Legumes - GL, Dryland Cereals and RTB) to develop a standard monitoring, evaluation and learning approach. MAIZE continues to work closely with the CGIAR Research Program on Policies, Institutions, and Markets (PIM) on foresight and targeting.

E.4 Partner usages of CRP’s outputs and outcomes

This is outlined in Sections C1 and C2.

F. Capacity Building

MAIZE CRP provides a large range of services related to the maize product development chain and conservation agriculture practices to its partners at all levels, promoting individual and organizational empowerment. In 2014, over 30,000 individuals (33 percent female) received technical backstopping and capacity-building. Technical backstopping includes: breeding support, variety testing and registration, and guidance on production of breeders’ seed, pre-basic, basic and certified seed, farmers’ field days, inter-community exchanges and events on product deployment and production. Over 3,800 individuals (45 percent women) were involved in capacity-development activities on germplasm development and production in 2014 alone.

MAIZE works through an extensive network of private companies. In 2014, the International Maize Improvement Consortium (IMIC)-Asia worked with over 35 SME seed companies. In Mexico, 68 SME partners contribute to over 155 testing sites under MasAgro. In Africa, 72 small, 12 medium and 1 large national enterprises, 3 regional and 1 international companies partner under MAIZE across 13 countries. As a result of capacity-building, 24 SMEs in Mexico increased their sales by 46 percent in 2011-2014, while some SMEs in Tanzania and Uganda have tripled seed production and delivery of improved maize varieties in the last 2 years.

G. Risk management

In 2014, a risk management matrix was created to regularly assess and manage risks related to the delivery of results by the CRP. The three major risks identified were: (1) W1&W2 budget insecurity and delayed transfer of W1&2 funds, which directly affects CRP research and development operations; (2) unfulfilled obligations by the partners for commissioned and competitive grants; (3) lack of a systematic and integrated approach for monitoring and evaluation at the outcome level.

To mitigate risk (1), the CRP Management Committee gives priority to multi-year investments of centers and partners, and uses the issuing of new partner grants as the most flexible component of the budget. MAIZE continues to sign only one-year partner grant contracts, to manage partner expectations and minimize any delays of payments to them. For risk (2), MAIZE regularly monitors the fulfillment of obligations by partners and intervenes when necessary to ensure proper completion of grant requirements. As for risk (3), the MAIZE and WHEAT have hired a shared Senior Monitoring, Evaluation and Learning Specialist to strengthen the CRP monitoring and evaluation system. A number of CIMMYT initiatives were also identified to contribute to minimizing risk, including the implementation of the Research Management System.

H. Lessons learned

H.1 Level of confidence of the response to the key performance indicators

The information reported in Annex 1 is obtained from detailed data found in a variety of sources, including project technical reports and institutional databases. The program is confident in the quality of the indicator information supplied. However, the program will continue to improve the systematic approach to collecting the quantitative evidence and other types of performance indicators from across the program to improve the process and time required to collect and analyze the information.

MAIZE reorganized its strategy around five Flagship Projects in 2014, following a standardization of CRP structure, reflected in Table 1 under indicators 1, 2 and 3. MAIZE endorses the positions of other CRPs on the need for clarified definitions of some indicators to support consistent and reliable reporting across CRPs.

H.2 Lessons from monitoring progress of the CRP

Notwithstanding the many positive outcomes achieved by the CRP, additional efforts are needed to improve project management, monitoring and evaluation quality at both the project and program levels.

MAIZE developed a standardized process and associated tools for project planning and design in 2014, including clear roles and responsibilities for each step and decision. It has also identified key steps where inputs from specialists (e.g. gender, monitoring and evaluation, communications) are effectively integrated in CRP management.

The CRP foresees a number of future efforts to support project and program management, including capacity building in the development of theories of change, impact pathways and monitoring and evaluation plans, and development and implementation of a monitoring, evaluation and learning strategy.

CRP Financial Reporting

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 activities⁵
6. Report XXX – CRP expenditure on gender research by Theme/Flagship Project and by Cluster of activities⁶
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

⁵ An explanatory note for this item is forthcoming

⁶ An explanatory note for this item is being prepared

Annex 1: MAIZE Indicator of progress in 2014

The traffic light indicator sums up the progress achieved of projects under MAIZE, per flagship project in 2014, regardless of their funding (Windows 1& 2 or bilateral funded). It monitors the progress per FP output, per FP and for the CRP as a whole.



Overall MAIZE performance was 85% on annual milestones/deliverables associated with FP outputs based on projects reported. Despite a number of smaller delays, which are being tracked, no significant issues were reported.

2014 Activities Progress by Flagship	Windows 1 and 2 for Programs	Competitive Partner grants	Bilaterals and windows 3	Total weighed (bilateral/Window 3: 85%; Windows 1 and 2 for programs 11.5%; Competitive grants 3.5%)
1-Sustainable intensification and income opportunities of maize-based cropping system	82.9	61.0	93	91
2-Novel tools, technologies and traits for improving genetic gains and breeding efficiency	83.1	83.0	100	97
3-Stress resilient and nutritious maize	93.8	66.0	92.5	92
4-Aligning with and strengthening maize seed systems for effective product delivery.		56.0	91	79
5-Inclusive and profitable maize futures	89.1	89.0	90	90
Overall	87.2	71.0	93.3	89.6

Annex 2: Performance indicators for gender mainstreaming with targets defined

Performance Indicator	CRP performance approaches requirements	CRP performance meets requirements	CRP performance exceeds requirements
1. Gender inequality targets defined	Sex-disaggregated social data is being collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	Sex-disaggregated social data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main target populations relevant to its expected outcomes (IDOs)	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 3: Flagship Projects and Intermediate Development Outcomes

Figure 2: MAIZE Strategy by Flagship Projects

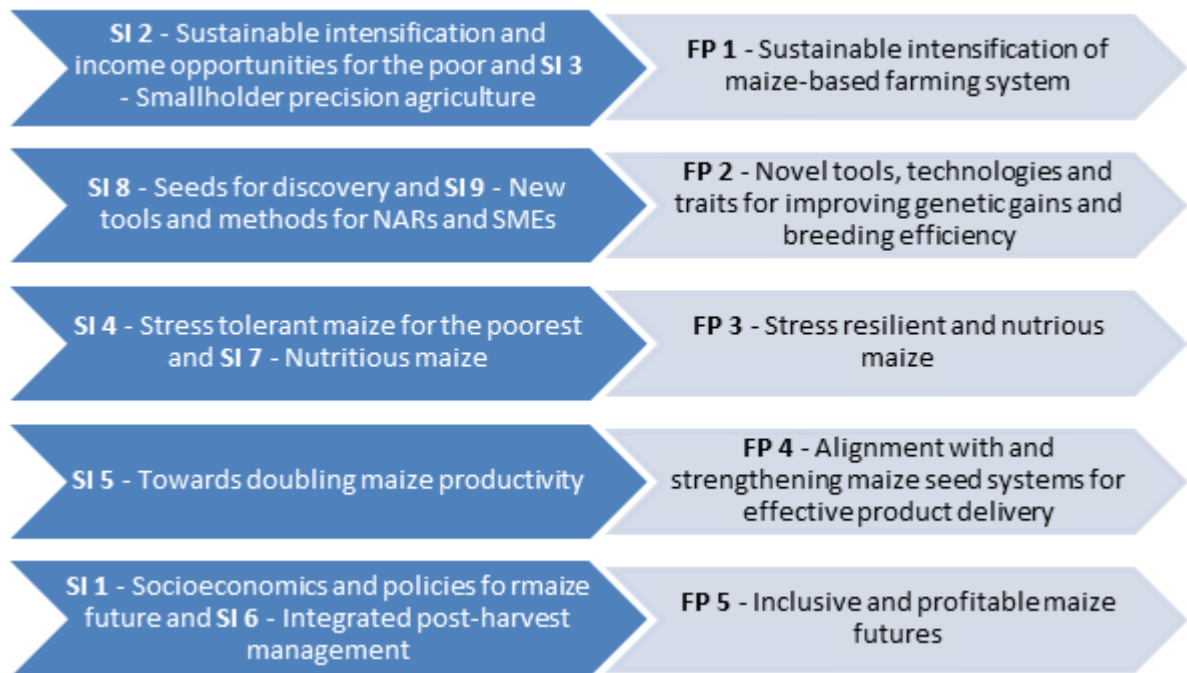
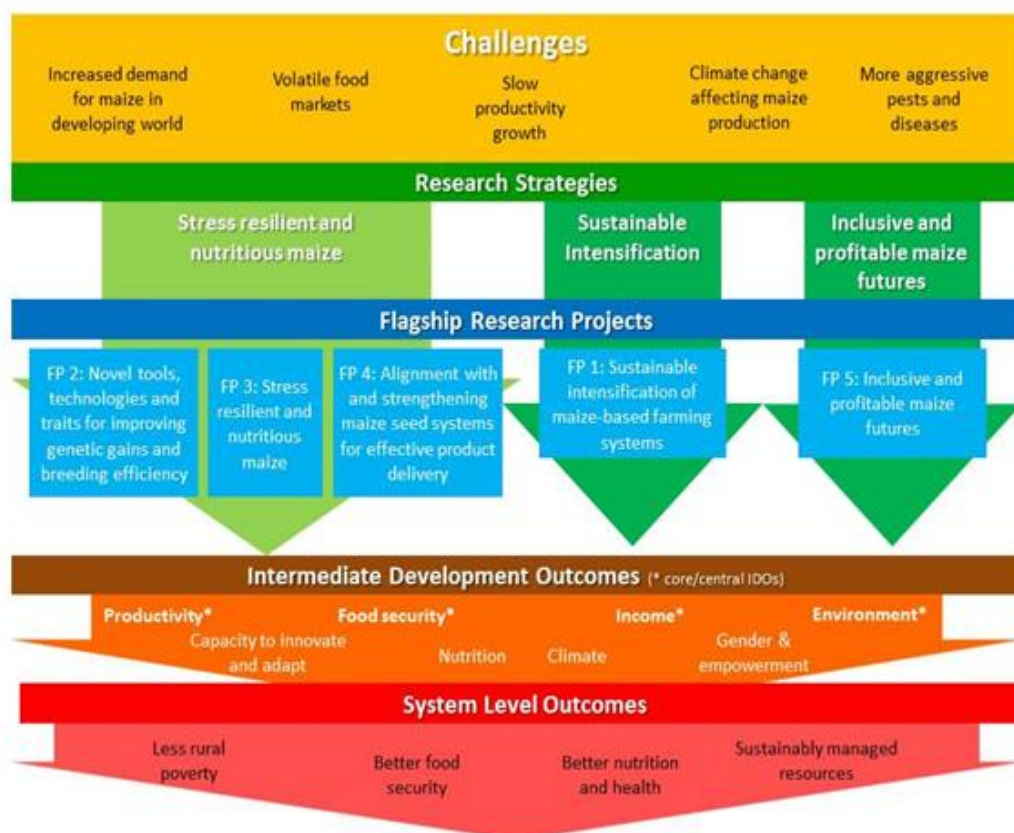


Figure 3: Intermediate Development Outcomes



Annex 4a: Progress towards Impact (external reviews)

2009	<ol style="list-style-type: none"> 1. CGIAR Social Science Stripe Review (MAIZE SI1) 2. Hill maize research in Nepal (MAIZE SI4, bilateral) 3. CGIAR Harvest Plus Review (MAIZE SI7) 4. Genotyping at CIMMYT (MAIZE SI9)
2010	<ol style="list-style-type: none"> 1. Water efficient maize for Africa (MAIZE SI4, bilateral) 2. Conservation Agriculture in Southern Africa (MAIZE SI2, bilateral)
2011	<ol style="list-style-type: none"> 1. Cereal Systems Initiative South Asia (MAIZE SI2 &SI3, bilateral) 2. New Seed Initiative for Southern Africa (MAIZE SI4, bilateral) 3. Drought tolerant maize for Africa (MAIZE SI4, bilateral) 4. MycoRed (MAIZE SI6, bilateral)
2012	<ol style="list-style-type: none"> 1. CA and smallholder farmers in E&S Africa-Leveraging institutional innovations and policies (MAIZE SI1, bilateral) 2. NRM research in the CGIAR (MAIZE SI2, SI3) 3. Maize-rice systems in Bangladesh (MAIZE SI2, SI3 bilateral) 4. Enhancing total farm productivity in smallholder CA based systems in Eastern Africa (MAIZE SI2, bilateral) 5. SIMLESA mid-term review (MAIZE SI2, bilateral) 6. Governance & Management of the Cereal Systems Initiative South Asia (MAIZE SI2 &SI3, bilateral) 7. Mechanization in Bangladesh (MAIZE SI2, bilateral) 8. Alignment of MAIZE SI2 with CRP1.2 (internal between two CRPs involved) 9. Water efficient maize for Africa (MAIZE SI4, bilateral) 10. Review of the integrated breeding platform (MAIZE, SI9, bilateral)
2013	<ol style="list-style-type: none"> 1. Gender Audit of MAIZE (MAIZE) 2. Innovation system thinking for improved research impact (MAIZE SI2) 3. New Seed Initiative for Southern Africa (MAIZE SI4, bilateral) 4. International Maize Improvement Consortium (MAIZE SI5) 5. Transgenic strategy (MAIZE SI9) 6. Plant breeding support in the CGIAR (MAIZE SI4-9; BMGF) 7. Biotechnology research in the CGIAR (MAIZE SI4, SI8, SI9, ISPC)
2014	<ol style="list-style-type: none"> 1. Review of Capacity building & Partnerships (MAIZE) 2. Global Gender norms study (FP 5) 3. MLN studies (FP 3) 4. Three countries MAIZE Adoption and Impact Studies (Nepal, Ethiopia and Malawi) (FP5) 5. Trait preferences for Heat Tolerant Maize (FP5) 6. More than 20 value chain studies 7. More than 10 policy analysis

Annex 4b: Progress towards Impact (Adoption and Impact Assessments)

2010	A meta-analysis of community-based studies on quality protein maize (MAIZE SI7)
	Adoption and continued use of improved maize seeds: Case study of Central Ethiopia (MAIZE SI4, SI5)
	Determinants of Agricultural Technology adoption: the Case of Improved Pigeonpea Varieties in Tanzania. (MAIZE SI2)
	How cost-effective is Biofortification in combating micronutrient malnutrition? An Ex ante assessment (MAIZE SI7)
	Potential for herbicide resistant maize seed for Striga control in Africa (MAIZE SI4)
	Quality Protein Maize: progress, impact, and prospects (MAIZE SI7)
	The effectiveness of quality protein maize in improving the nutritional status of young children in the Ethiopian highlands (MAIZE SI7)
	DTMA ex ante analysis - Potential impact of investments in drought tolerant maize in Africa (MAIZE SI4)
2011	Agricultural technology adoption, seed access constraints and commercialization in Ethiopia (MAIZE SI4, SI5)
	Agricultural Technology, Crop Income, and Poverty Alleviation in Uganda (MAIZE SI1)
	Are soil conservation technologies "win-win?" A case study of Anjeni in the north-western Ethiopian highlands (MAIZE SI2)
	Assessing the influence of neighbourhood effects on the adoption of improved agricultural technologies in developing agriculture (MAIZE)
	Assessing the potential economic impact of Bacillus thuringiensis (Bt) maize in Kenya (MAIZE SI4)
	Determinants of improved maize seed and fertilizer adoption in Kenya (MAIZE SI2)
2012	Adoption and impact of DT maize in Zimbabwe (MAIZE SI4)
	Adoption of Agricultural Technologies in Kenya: How Does Gender Matter (MAIZE)
	Adoption of bio-diversification, conservation tillage and modern seed: Welfare and environmental implications. (MAIZE SI1)
	Adoption of interrelated sustainable agricultural practices in smallholder system: Evidence from rural Tanzania. Technological forecast and social change (MAIZE SI2))
	Adoption of Multiple Sustainable Agricultural Practices in Rural Ethiopia (MAIZE SI2)
	Analysis of Adoption and Diffusion of Improved maize Varieties in Ethiopia (MAIZE SI4, SI5)
	Can Metal Silo Technology Offer Solution to Grain Storage and Food Security Problem in Developing Countries? An Impact Evaluation From Kenya (MAIZE SI6)
	Could farmer interest in a diversity of seed attributes explain adoption plateaus for modern maize varieties in Malawi? (MAIZE SI4)
	Estimating consumer willingness to pay for food quality with experimental auctions: the case of yellow versus fortified maize meal in Kenya (MAIZE SI7)
	Identifying recommendation domains for targeting dual-purpose maize-based interventions in crop-livestock systems in East Africa (MAIZE SI1)

	Impact of modern agricultural technologies on smallholder welfare: Evidence from Tanzania and Ethiopia (MAIZE SI1)
	Improved Maize Technologies and Welfare Outcomes In Smallholder Systems: Evidence From Application of Parametric and Non-Parametric Approaches (MAIZE SI1)
	Maize impact in Zambia (MAIZE SI4, SI5)
	Poverty Reduction Effects of Agricultural Technology Adoption: A Micro-evidence from Rural Tanzania. MAIZE SI1)
	The choice of spatial and temporal cropping systems diversification in Malawi: impacts on crop income and agro-chemicals use. (MAIZE SI2)
	Welfare Effects of Agricultural Technology Adoption: The Case of Improved Groundnut Varieties in Rural Malawi. (MAIZE SI2)
	Welfare impact of farm input subsidy and improved maize in Malawi (MAIZE SI1)
	Welfare impacts of maize-pigeon pea intensification in Tanzania (MAIZE SI2)
	What determines gender inequality in household food security in Kenya? Application of exogenous switching treatment regression. (MAIZE SI1)
2013	What Determines Gender Inequality in Household Food Security in Kenya? Application of Exogenous Switching Treatment Regression (MAIZE SI1)
	What are the farm-level impacts of Malawi's farm input subsidy program? A critical review (MAIZE SI1)
	Food security as a gender issue: Why are female-headed households worse off compared to similar male-headed counterparts? (MAIZE SI1)
	Household, community, and policy determinants of food insecurity in rural Malawi (MAIZE SI1)
	Mapping the effect of market liberalisation policies on the maize seed systems in Kenya based on micro-evidence from 1992 to 2010 (MAIZE SI1)
	Maize stover use and sustainable crop production in mixed crop-livestock systems in Mexico (MAIZE SI2)
	Gender and Innovation in Agriculture: A Case Study of Farmers' Varietal Preference of Drought Tolerant Maize in Southern Guinea Savannah Region of Nigeria (MAIZE SI4)
	On-farm evaluation of maize varieties in the transitional and savannah zones of Ghana: Determinants of farmer preferences (MAIZE SI4)
	Potential impacts of increasing average yields and reducing maize yield variability in Africa (MAIZE SI4)
	Smallholder Farmers' Perceptions of Drought Risk and Adoption of Modern Maize in Southern Malawi (MAIZE SI4)
	Economic Analysis of Modern Maize Varieties in Malawi (MAIZE SI4)
	Maize for food and feed in East Africa—The farmers' perspective (MAIZE SI7)
	Potential for dual-purpose maize varieties to meet changing maize demands: Overview (MAIZE SI7)
	Potential for dual-purpose maize varieties to meet changing maize demands: Synthesis (MAIZE SI7)
	Assessing the potential of dual-purpose maize in southern Africa: A multi-level approach (MAIZE SI7)
	Identifying recommendation domains for targeting dual-purpose maize-based interventions in crop-livestock systems in East Africa (MAIZE SI7)

2014	The role of farming experience on the adoption of agricultural technologies: evidence from smallholder farmers in Uganda
	From adoption claims to understanding farmers and contexts: A literature review of Conservation Agriculture (CA) adoption among smallholder farmers in southern Africa
	Determinants of smallholder farmers' hybrid maize adoption in the drought prone Central Rift Valley of Ethiopia.
	Impact of Improved Maize Adoption on Welfare of Farm Households in Malawi: A Panel Data Analysis
	Measuring the impacts of Malawi's farm input subsidy program
	Understanding the impact and adoption of conservation agriculture in Africa: A multi-scale analysis.
	Consumer acceptance of quality protein maize (QPM) in East Africa
	Can agricultural input subsidies reduce the gender gap in modern maize adoption? Evidence from Malawi
	Improved maize varieties and household food security: Achieving impact in Tanzania.
	Sustainable Agricultural Intensification in Ethiopia: Achieving maximum impact through adoption of suites of technologies.
	Evaluating the impact of improved maize varieties on food security in Rural Tanzania: Evidence from a continuous treatment approach.
	What determines gender inequality in household food security in Kenya? Application of exogenous switching treatment regression
	Economic, production and poverty impacts of investing in maize tolerant to drought in Africa
	The use of improved maize varieties in Tanzania.
	Exploration of farmers' preferences and perceptions of maize varieties: implications on development and adoption of quality protein maize (QPM) varieties in Zimbabwe.
	Adoption potential of Conservation Agriculture practices in Sub-Saharan Africa: Results from five case studies.
	Adoption and extent of conservation agriculture practices among smallholder farmers in Malawi
Quantifying the impact of weather extremes on global food security: A spatial bio-economic approach	
Measuring the Effectiveness of Crop Improvement Research in Sub-Saharan Africa from the Perspective of Varietal Output, Adoption, and Change: 20 Crops, 30 Countries, and 1150 Cultivars in Farmers' Fields	

Annex 5: Key performance indicators

MAIZE CRP													
#	CRPs concerned by this indicator	Indicators	Glossary & Comments	Deviation narrative (if actual is more than 10% away from target)	2012		2013		2014		2015		
					Target (if available)	Actual	Target	Actual	Target	Actual	Target	Actual	
KNOWLEDGE, TOOLS, DATA													
1	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. For the CRP MAIZE, each Flagship Project is a flagship "product."	Following a standardization of CRP structures, the MAIZE strategy was reorganized around five Flagship Projects (FPs) in 2014, encompassing the nine Strategic Initiatives of the original MAIZE proposal		9	9	9	5	5	5		
2	All	2. % of flagship products produced that have explicit target of women farmers/NRM managers	Included in FPs: FP1 - Sustainable Intensification FP3 - Stress resilient and nutritious maize FP4 - Alignment with and strengthening maize seed systems for effective product delivery FP5 - Inclusive and profitable maize futures	Following a standardization of CRP structures, the MAIZE strategy was reorganized around five Flagship Projects (FPs) in 2014, encompassing the nine Strategic Initiatives of the original MAIZE proposal		4	5	6	5	4	4		

3	All	3. % of flagship products produced that have been assessed for likely gender-disaggregated impact	Included in FPs: FP1 - Sustainable Intensification FP3 - Stress resilient and nutritious maize FP4 - Alignment with and strengthening maize seed systems for effective product delivery FP5 - Inclusive and profitable maize futures	Following a standardization of CRP structures, the MAIZE strategy was reorganized around five Flagship Projects (FPs) in 2014, encompassing the nine Strategic Initiatives of the original MAIZE proposal			9	9 of which 2 more in-depth	4	4	4	
4	All	4. Number of "tools" produced by CRP	Glossary: These are significant decision-support tools, guidelines, training manuals, software, and/or videos that are significant in that they should be likely to change the way stakeholders along the impact pathway allocate resources and/or implement activities			28 (16 co-developed with other CRPs)	25	27 (17 co-developed with other CRPs)	25	37	25	
5	All	5. % of tools with explicit target of women farmers	Tools target men and women users equally					n/a				
6	All	6. % of tools assessed for likely gender-disaggregated impact	Tools target men and women users equally					55				
7	All	7. Number of open access databases maintained by CRP	Cereal Knowledge Bank Institutional DSpace Repository Germinate maize IMIS Maize Doctor			1	1	12	12	5		
8	All	8. Total number of users of these open access databases				592	600	3,370	4,000	185,331	200,000	

9	All	9. Number of publications in ISI journals produced by CRP	From KPI database			84 (18 with other CRPs)	84	137	120	64	120	
10	1,2,3, 4, 6	10. Number of strategic value chains analyzed by CRP	Follow hyperlink for the specific titles					27		24	24	
11	1,5,6,7	11. Number of targeted agro-ecosystems analyzed/characterized by CRP										
12	1,5,6,7	12. Estimated population of above-mentioned agro-ecosystems										
CAPACITY ENHANCEMENT AND INNOVATION PLATFORMS												
13	All	13. Number of trainees in short-term programs facilitated by CRP (male)	From CIMMYT Training database, plus Competitive Partner Grants and IITA Short-term = < 90 days			22,428 (15,144 with other CRPs)	20,000	36,588 (151 with other CRPs)	20,000	18,058	20,000	
14	All	14. Number of trainees in short-term programs facilitated by CRP (female)	From CIMMYT Training database, plus Competitive Partner Grants and IITA Short-term = < 90 days			5,941 (73 with other CRPs) (IITA 15)	6,000	13,592 (73 with other CRPs)	6,000	10,056	6,000	

15	All	15. Number of trainees in long-term programs facilitated by CRP (male)	From CIMMYT Training database, plus Competitive Partner Grants and IITA Long-term = > 90 days			37 (5 with other CRPs)	60	149 (7 with other CRPs)	60	181	60	
16	All	16. Number of trainees in long-term programs facilitated by CRP (female)	From CIMMYT Training database, plus Competitive Partner Grants and IITA Long-term = >90 days			16 (1 shared other CRPs)	36	80 (4 with other CRPs)	30	86	30	
17	1,5,6,7	17. Number of multi-stakeholder R4D innovation platforms established for the targeted agro-ecosystems by the CRPs	Ethiopia - 19 IPs Kenya - 8 IPs Tanzania - 10 IPs Malawi - 6 IPs Mozambique - 4 IPs Rwanda - 4 Ips South Asia: 40; Latin America (Mexico and Guatemala): 41			75	75	87	80	132	80	
TECHNOLOGIES/PRACTICES IN VARIOUS STAGES OF DEVELOPMENT												
18	All	18. Number of technologies/NRM practices under research in the CRP (Phase I)	Germplasm: 33,583 Agronomy: 540 From KPI database			32,300	30,000	30,122	30,000	34,123	30,000	
19	All	19. % of technologies under research that have an explicit target of women farmers										

20	All	20. % of technologies under research that have been assessed for likely gender-disaggregated impact				55%						
21	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					3	5				
22	1,5,6,7	22. Number of people who will potentially benefit from plans, once finalized, for the scaling up of strategies										
23	All, except 2	23. Number of technologies /NRM practices field tested (phase II)	Germplasm: 2046 Agronomy: 17 From KPI database			1,180	1,200	1,554	1,200	2,063	1,200	

24	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)				3	3	4	3			
25	1,5,6,7	25. % of above innovations/approaches/ options targeted at decreasing inequality between men and women				3	3		3			
26	1,5,6,7	26. Number of published research outputs from CRP utilized in targeted agro-ecosystems				32						
27	All, except 2	27. Number of technologies/NRM practices released by public and private sector partners globally (phase III)	Agronomy: 34 From KPI database			48	53	77	50	34	50	

POLICIES IN VARIOUS STAGES OF DEVELOPMENT

28	All	28. Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)	Follow hyperlink for the specific titles		3	3	1	1	1	12	5	
29	All	29. Number of policies / regulations / administrative procedures drafted and presented for public/stakeholder consultation (Stage 2)	Farm Input subsidies The Economic and Environmental Benefits of Sustainable Intensification Practices Resource-conserving practices for smallholder farmers in Africa		1	1	1	1	1	3	1	
30	All	30. Number of policies / regulations / administrative procedures presented for legislation (Stage 3)	Underwent the third stage of the policy reform process (policies were presented for legislation/decre to improve the policy environment for smallholder-based agriculture.)					0	0	0	1	
31	All	31. Number of policies / regulations / administrative procedures prepared passed/approved (Stage 4)	Clearly identify in this cell the type of policy and the country/region concerned: underwent the fourth stage of the policy reform process (official approval (legislation/decre) of new or revised policy / regulation / administrative procedure by relevant authority).					0	0	0	1	

32	All	32. Number of policies / regulations / administrative procedures passed for which implementation has begun (Stage 5)	Completed the policy reform process (implementation of new or revised policy / regulation / administrative procedure by relevant authority)					0	0	0	1	
OUTCOMES ON THE GROUND												
33	All	33. Number of hectares under improved technologies or management practices as a result of CRP research	Given the lack of a comprehensive system that track global adoption, we synthesized available evidence based on key bilateral project progress reports and performance information collected in various institutional databases. The key geographic countries in which the adoption has been observed include: Ethiopia, Uganda, Kenya, Tanzania, Angola, Zambia, Malawi, Zimbabwe, Mozambique, Mexico, Nigeria, Benin, Ghana, Mali, India, Nepal, Bangladesh.			313,120		417,000	500,000	2,305,462.00	700,000	

34	All	34. Number of farmers and others who have applied new technologies or management practices as a result of CRP research	Given the lack of a comprehensive system that tracks global adoption, we synthesized available evidence based on key bilateral project progress reports and performance information collected in various institutional databases. The key geographic countries in which the adoption has been observed include: Ethiopia, Uganda, Kenya, Tanzania, Angola, Zambia, Malawi, Zimbabwe, Mozambique, Mexico, Nigeria, Benin, Ghana, Mali, India, Nepal, Bangladesh.			869,778		1,100,000	1,200,000	4,088,967.00	2,000,000	
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Annex 6: List of acronyms

A4NH:	CGIAR Research Program on Agriculture for Nutrition and Health
AAA:	Affordable, Accessible, Asian Drought Tolerant Maize Project
ATTIC:	Agro-ecosystem Diversity, Trajectories and Trade-Offs for Intensification of Cereal-based systems
BMGF:	Bill and Melinda Gates Foundation
CCAFS:	CGIAR Research Program on Climate Change, Agriculture and Food Security
CGI:	Competitive Grants Initiative
CGIAR:	Consultative Group for International Agricultural Research
CIMMYT:	International Maize and Wheat Improvement Center
CML:	CIMMYT maize lines
CSISA:	Cereal Systems Initiative for South Asia
DH:	Double-Haploid
DTMA:	Drought-Tolerant Maize for Africa project
DTMASS:	Drought Tolerant Maize for Africa Seed Scaling project
ESA:	Eastern and Southern Africa
FACASI:	Farm Mechanization and Conservation Agriculture for Sustainable Intensification
FP:	Flagship Project
GL:	CGIAR Research Program on Grain Legumes
GRiSP:	Global Rice Science Partnership
HTMA:	Heat Tolerant Maize for Asia
ICIPE:	International Centre for Insect Physiology and Ecology
IDO:	Intermediate Development Outcomes
IEA:	Independent Evaluation Arrangement
IITA:	International Institute for Tropical Agriculture
IMAS:	Improved Maize for African Soils
IMIC:	International Maize Improvement Consortium
IPNI:	International Plant Nutrition Institute
ISMA:	Integrated Striga Management Project
KALRO:	Kenya Agricultural and Livestock Research Organization
KIT:	Royal Tropical Institute
L&F:	CGIAR Research Program on Livestock and Fish
MasAgro:	Sustainable Modernization of Traditional Agriculture program
MLN:	Maize Lethal Necrosis disease
NARO:	National Agricultural Research Organisation (Uganda)
NASECO:	Nalweyo Seed Company
PIM:	CGIAR Research Program on Policies, Institutions, and Markets
QPM:	Quality Protein Maize
RS:	Research Strategy
RTB:	CGIAR Research Program on Roots, Tubers and Bananas
SAGARPA:	Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación
SFSA:	Syngenta Foundation for Sustainable Agriculture
SIMLESA:	Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa
SME:	small and medium enterprise
TSC:	Tar Spot Complex
USDA-ARS:	United States Department of Agriculture - Agricultural Research Service
USAID:	United States Agency for International Development
WEMA:	Water Efficient Maize for Africa
WLE:	CGIAR Research Program on Water, Land and Ecosystems

Annex 7: CRP Financial Reporting (LSeries)

Ref	Description	Comments
Budget and Financial Reports		
L101	CRP Cumulative Financial Summary	
L106	CRP Annual Funding Summary	
L111	CRP Annual Financial Summary	Total spending for the year by Center, including Gender expenditure
L121	CRP - Expenditure by Natural Classification Report	Included mainly for reconciliation purposes and to eliminate double counting of CGIAR collaboration costs; note that it is the <i>net</i> amount (i.e. expenses excluding CGIAR collaboration costs) which should be used as the total for L111 and L131
L131	CRP - Flagship Projects Report	Simplified - Source of funding no longer required; note that this report is still titled "Themes"; transition is underway and some CRPs are already recording costs by Flagship Project. If that is the case for your CRP, please change the title of the report.
L136	Gender Expenditure by Theme	
L141	CRP - Cluster of Activities Report	
Analytical Financial Reports		
L211	CRP Partnerships Report	

Notes

Most reports are for current year only. Exceptions are L101 which is multi-year (cumulative).

All reports shown here are for individual CRP's. The Consortium Office will prepare consolidated CRP reports.

Budget figures in all of the attached forms should be the annual confirmed budget (POWB) for the year. W1/2 total will be as the Financing Plan notified by the Consortium Office, and W3/Bilateral the forecast prepared internally.

Actual events since the signing of the PIAs result in the budget per PIA no longer being a meaningful measure of performance.

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

CRP No.3.2 - CRP on MAIZE		Cumulative Financial Summary													
Period: 01/01/2014-12/31/2014															
Amounts in USD (000's)															
Report Description: L101															
Name of Report: Cumulative Financial Summary															
Frequency/Period: Annual															
Deadline: Every April 15th															
Summary Report - by CG Partners	(a) Total POWB budget since inception					(b) Actual cumulative Expenses					(c) Variance / Balance				
	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding	Windows 1 & 2	Window 3	Bilateral Funding	Center funds	Total Funding
5. CIMMYT	43,645	36,344	123,367	-	203,355	43,216	39,912	113,392	-	196,520	428	(3,568)	9,975	-	6,835
11. IITA	6,160	6,740	19,696	-	32,596	6,160	6,737	19,518	-	32,415	-	3	178	-	181
Total for CRP	49,805	43,084	143,063	-	235,951	49,376	46,649	132,910	-	228,935	428	(3,565)	10,153	-	7,016
	21%	18%	61%	0%	100%	22%	20%	58%	0%	100%	6%	-51%	145%	0%	100%

CRP No.3.2 - CRP on MAIZE
Period: 01/01/2014- 12/31/2014
 Amounts in USD (000's)

Annual Funding Summary

Report Description L106

Name of Report: Annual Funding
 Summary

Frequency/Period: Annual

Deadlin

e: 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

2014 Actual Funding

		Windows 1&2	Window 3	Bilateral Funding	Total Funding
CIMMYT :					
1	CGIAR Fund	17,058			17,058
2	ACIAR	-	230	1,482	1,713
3	BMGF	-	9,943	3,388	13,331
4	Cornell	-	-	99	99
5	GIZ	-	-	273	273
6	ICRISAT	-	-	56	56
7	IFAD	-	587	5	591
8	IITA	-	-	521	521
9	OFID	-	-	54	54
10	SAGARPA	-	-	8,716	8,716
11	SDC	-	-	1,882	1,882
12	SFSA	-	-	983	983
13	U of Hohenheim	-	-	67	67
14	UOT	-	-	58	58
15	USAID	-	3,874	10	3,884
16	Others < \$50k	-	68	17	85

IITA :					
17	CGIAR Fund (CIMMYT)	2,254	1,658	244	4,156
18	AFDB	-	-	8,317	8,317
19	AGRA	-	-	56	56
20	AWF	-	-	185	185
21	BMGF	-	-	618	618
22	CORAF	-	-	155	155
23	Netherlands	-	-	83	83
24	NIGERIA	-	-	169	169
25	SYNGENTA	-	-	188	188
26	USAID	-	3	160	163
27	Others < \$50k	-	34	167	200
Total for CRP "X.X"		19,312	16,398	27,952	63,661

CRP No.3.2 - CRP on MAIZE
 Period: 01/01/2014-
 12/31/2014
 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 2014 POWB approved budget					(b) CRP 2014 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
5. CIMMYT	17,486	11,358	20,046	-	48,890	17,058	14,703	17,611	-	49,371	428	(3,344)	2,435	-	(482)
11. IITA	2,254	1,687	8,711	-	12,652	2,254	1,695	10,341	-	14,290	(0)	(8)	(1,630)	-	(1,638)
Total for CRP	19,740	13,045	28,757	-	61,542	19,312	16,398	27,952	-	63,661	428	(3,352)	805	-	(2,119)
	32%	21%	47%	0%	100%	30%	26%	44%	0%	100%	-20%	158%	-38%	0%	100%

Annual Financial Summary by Natural Classification

CRP
No.3.2 -
CRP on
MAIZE

Period: 01/01/2014- 12/31/2014

Amounts in USD 000's

Report
Description

L121

Name of Report:
Frequency/Period:
Deadline
:

Financial Summary by
Natural Classification
lines

Annual

Every April 15th

	Wind ows 1 & 2	Wind ow 3	Bilat eral Fund ing	Cent er Fund s	Total Fund ing	Wind ows 1 & 2	Wind ow 3	Bilate ral Fund ing	Cent er Fund s	Total Fund ing	Windo ws 1 & 2	Wind ow 3	Bilat eral Fund ing	Cent er Fund s	Total Fund ing
Total CRP"X.X"	POWB Approved Budget					Actual					Unspent/Variance				
Personnel Collaborators Costs - CGIAR	4,465	2,830	8,836	-	16,131	4,834	4,540	8,133	-	17,507	(370)	(1,710)	703	-	(1,377)
	89	2,686	104	-	2,879	175	3,115	53	-	3,342	(85)	(429)	51	-	(464)

Centers															
Collaborator Costs - Partners	3,376	2,104	9,646	-	15,126	6,486	2,401	8,467	-	17,354	(3,110)	(297)	1,179	-	(2,228)
Operational Travel	9,203	3,541	5,506	-	18,251	4,070	4,065	7,077	-	15,212	5,134	(524)	(1,571)	-	3,039
Depreciation	581	217	1,272	-	2,070	587	747	1,135	-	2,470	(6)	(531)	138	-	(399)
	111	664	607	-	1,382	885	283	660	-	1,828	(774)	381	(53)	-	(446)
Sub-total of Direct Costs	17,825	12,042	25,971	-	55,838	17,036	15,152	25,525	-	57,713	788	(3,110)	446	-	(1,875)
Indirect Costs	1,915	1,003	2,786	-	5,704	2,275	1,245	2,427	-	5,948	(360)	(242)	359	-	(244)
Total - All Costs	19,740	13,045	28,757	-	61,542	19,312	16,398	27,952	-	63,661	428	(3,352)	805	-	(2,119)
LESS Coll Costs CGIAR Centers	(89.3)	(2,686)	(104)	-	(2,879)	(174.7)	(3,115)	(53)	-	(3,342)	85	429	(51)	-	464
Total Net Costs	19,650	10,360	28,653	-	58,663	19,137	13,283	27,899	-	60,319	513	(2,923)	754	-	(1,655)

Amounts for each participating center below:

CIMMYT	POWB Approved Budget				Actual				Unspent/Variance				
Personnel	3,482	2,088	7,431	13,000	3,851	3,794	6,466	14,111	(369)	(1,706)	965	-	(1,110)

Collaborators Costs - CGIAR Centers	89	2,686	104		2,879	175	3,115	53		3,342	(85)	(429)	51	-	(464)
Collaborator Costs - Partners	3,252	1,853	4,399		9,505	6,362	2,150	2,239		10,751	(3,110)	(296)	2,161	-	(1,246)
Supplies and services	8,555	3,168	4,399		16,121	3,421	3,690	5,763		12,874	5,134	(522)	(1,364)	-	3,248
Operational Travel	432	93	884		1,410	438	623	674		1,736	(6)	(530)	210	-	(326)
Depreciation	83	624	196		903	857	243	173		1,273	(774)	381	24	-	(369)
Sub-total of Direct Costs	15,893	10,511	17,414	-	43,819	15,105	13,614	15,367	-	44,086	789	(3,103)	2,047	-	(267)
Indirect Costs	1,593	847	2,632		5,071	1,953	1,088	2,244		5,285	(360)	(242)	388	-	(214)
Total - All Costs	17,486	11,358	20,046	-	48,890	17,058	14,703	17,611	-	49,371	428	(3,344)	2,435	-	(482)
LESS Coll Costs CGIAR Centers	(89)	(2,686)	(104)	-	(2,879)	(175)	(3,115)	(53)	-	(3,342)	85	429	(51)	-	464
Total Net Costs	17,397	8,673	19,942	-	46,011	16,883	11,588	17,558	-	46,029	514	(2,915)	2,384	-	(18)

IITA	POWB Approved Budget					Actual					Unspent/Variance				
Personnel	983	743	1,405	-	3,130	983	746	1,667	-	3,397	(0)	(3)	(263)	-	(266)
Collaborators Costs -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CGIAR Centers Collaborat or Costs - Partners Supplies and services	123	251	5,247	-	5,621	123	252	6,228	-	6,603	(0)	(1)	(982)	-	(983)
Operationa l Travel	648	374	1,107	-	2,129	649	375	1,314	-	2,338	(0)	(2)	(207)	-	(209)
Depreciati on	149	124	388	-	661	149	124	461	-	734	(0)	(1)	(73)	-	(73)
	27	41	410	-	478	27	41	487	-	555	(0)	(0)	(77)	-	(77)
Sub-total of Direct Costs	1,931	1,531	8,557	-	12,019	1,931	1,538	10,158	-	13,628	(0)	(7)	(1,601)	-	(1,608)
Indirect Costs	322	156	154	-	633	322	157	183	-	662	(0)	(1)	(29)	-	(30)
Total - All Costs	2,254	1,687	8,711	-	12,652	2,254	1,695	10,341	-	14,290	(0)	(8)	(1,630)	-	(1,638)
LESS Coll Costs CGIAR Centers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Net Costs	2,254	1,687	8,711	-	12,652	2,254	1,695	10,341	-	14,290	(0)	(8)	(1,630)	-	(1,638)

CRP No.3.2 - CRP on MAIZE

Period: 01/01/2014-

12/31/2014

Amounts in USD 000's

Annual Financial Summary by Flagship Project

Report Description: L131

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

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
Summary Report - by Flagship Project			
Flagship 1 - Sustainable intensification of maize-based cropping systems.	13,717	11,955	1,762
Flagship 2 - Novel tools, technologies and traits for improving genetic gains and breeding efficiency.	11,418	10,217	1,200
	13,087	17,911	(4,824)
Flagship 4 - Aligning with and strengthening maize seed systems for effective product delivery.	9,397	8,737	661
Flagship 5 - Inclusive and profitable maize futures.	9,332	10,679	(1,347)
CRP Management/Coordination	4,591	4,162	428
Total - All Costs	61,542	63,661	(2,119)

CIMMYT			
Flagship 1 - Sustainable intensification of maize-based cropping systems.	9,437	7,062	2,375
Flagship 2 - Novel tools, technologies and traits for improving genetic gains and breeding efficiency.	10,746	9,467	1,279
Flagship 3 - Stress resilient and nutritious maize.	11,355	16,014	(4,659)

Flagship 4 - Aligning with and strengthening maize seed systems for effective product delivery.	6,343	5,249	1,094
Flagship 5 - Inclusive and profitable maize futures.	6,592	7,591	(999)
CRP Management/Coordination	4,417	3,989	428
Total - All Costs	48,890	49,371	(482)

IITA			
Flagship 1 - Sustainable intensification of maize-based cropping systems.	4,280	4,893	(613)
Flagship 2 - Novel tools, technologies and traits for improving genetic gains and breeding efficiency.	671	750	(79)
Flagship 3 - Stress resilient and nutritious maize.	1,732	1,897	(165)
Flagship 4 - Aligning with and strengthening maize seed systems for effective product delivery.	3,055	3,488	(433)
Flagship 5 - Inclusive and profitable maize futures.	2,740	3,088	(348)
CRP Management/Coordination	173	173	(0)
Total - All Costs	12,652	14,290	(1,638)

CRP No.3.2 - CRP on MAIZE

Period: 01/01/2014-

12/31/2014

Amounts in USD 000's

Annual Financial Summary of Gender by Flagship Project

Report Description L136

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

	POWB Approved	Current Year Actual Expenditures	Unspent Budget
Summary Gender Report - by Flagship Project			
Flagship 1 - Sustainable intensification of maize-based cropping systems.	2,274	1,829	445
Flagship 2 - Novel tools, technologies and traits for improving genetic gains and breeding efficiency.	315	446	(131)
Flagship 3 - Stress resilient and nutritious maize.	1,575	2,812	(1,237)
Flagship 4 - Aligning with and strengthening maize seed systems for effective product delivery.	1,238	1,095	144
Flagship 5 - Inclusive and profitable maize futures.	2,467	2,764	(297)
CRP Management/Coordination	185	185	(0)
Total - All Costs	8,054	9,130	(1,076)

CIMMYT			
Flagship 1 - Sustainable intensification of maize-based cropping systems.	1,717	1,195	521
Flagship 2 - Novel tools, technologies and traits for improving genetic gains and breeding efficiency.	231	352	(121)
Flagship 3 - Stress resilient and nutritious maize.	1,359	2,575	(1,216)

Flagship 4 - Aligning with and strengthening maize seed systems for effective product delivery.	857	659	198
Flagship 5 - Inclusive and profitable maize futures.	2,125	2,378	(253)
CRP Management/Coordination	185	185	(0)
Total - All Costs	6,473	7,344	(871)

IITA			
Flagship 1 - Sustainable intensification of maize-based cropping systems.	557	633	(77)
Flagship 2 - Novel tools, technologies and traits for improving genetic gains and breeding efficiency.	84	94	(10)
Flagship 3 - Stress resilient and nutritious maize.	217	237	(21)
Flagship 4 - Aligning with and strengthening maize seed systems for effective product delivery.	382	436	(54)
Flagship 5 - Inclusive and profitable maize futures.	343	386	(43)
CRP Management/Coordination	-	-	-
Total - All Costs	1,582	1,786	(205)

CRP No.3.2 - CRP on MAIZE		<h1>CRP Partnership Report</h1>							
Period: 01/01/2014- 12/31/2014									
Amounts in USD 000's									
Report Description		L211							
Name of Report: CRP Partnerships Report									
Frequency/ Period:		Annual							
Deadline: Every April 15th									
TOTAL FOR CRP "X.X"					Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country	Window 1 & 2	Window 3	Bilateral	Center Funds	TOTAL	
		CIMMYT :							
1	AATF	AFRICAN AGRICULTURE TECHNOLOGY FOUNDATION	ZIMBABWE	-	-	121		121	
2	ACIAR	AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH	AUSTRALIA	-	-	138		138	
3	ARC	AGRICULTURAL RESEARCH COUNCIL	ZIMBABWE	-	238	51		289	
4	ARS	SERVICIO DE INVESTIGACION AGRICOLA	USA	11	32	10		53	
5	BARI	Bangladesh Agriculture Research Institute	BANGLADESH	-	184	(2)		182	
6	CAS	CREATIVE AGRI SOLUTIONS PVT. LTD.	CHINA	25	6	27		57	
7	CPL	CULTURAL PRACTICE LLC	USA	129	-	-		129	
8	DATECH	DIVERSITY ARRAYS TECHNOLOGY, PTY LTD.	AUSTRALIA	678	-	-		678	
	EIAR	ETHIOPIAN	ETHIOPIA						

9		INSTITUTE OF AGRICULTURAL RESEARCH			1	136	10		147
10	ERTE	ENERGIN .R TECHNOLOGIES 2009 LTD	ISRAEL		200	-	-		200
11	ICRISAT	INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI ARID TROPICS	INDIA		0	29	29		59
12	IDE	INTERNATIONAL DEVELOPMENT ENTERPRISES	BANGLADESH		-	173	-		173
13	IFPRI	INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE	USA		-	54	-		54
14	IIAM	INSTITUTE OF ARICULTURAL RESEARCH OF MOZAMBIQUE	MOZAMBIQUE		187	58	2		247
15	IITA	INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE	NIGERIA		75	2,079	1		2,155
16	ILRI	INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE	KENYA		100	94	-		194
17	INIFAP	INSTITUTO NACIONAL DE INVESTIGACIONES FORESTALES, AGRICOLAS Y PECUARIAS	MEXICO		69	-	422		491
18	IPGRI	INTERNATIONAL PLANT GENETIC RESOURCES INSTITUTE	Italy		100	-	-		100
19	IPNI	INTERNATIONAL PLANT NUTRITION INSTITUTE	INDIA		606	-	-		606
20	IRRI	INTERNATIONAL RICE RESEARCH INSTITUTE	PHILIPPINES		-	822	-		822
21	JHI	THE JAMES HUTTON INSTITUTE	SCOTLAND		180	-	-		180
22	KARI	KENYA AGRICULTURAL RESEARCH INSTITUTE	KENYA		-	228	9		238

23	LGC	LGC GENOMICS LLC	UK			-	-	60		60
24	LI-BIRD	Local Initiatives for Biodiversity, Research and Development	NEPAL			51	-	-		51
25	MATC	Meru Agro-Tours & Consultants Co. Ltd	TANZANIA			28	25	-		53
26	MSU	MICHIGAN STATE UNIVERSITY	USA			85	6	-		91
27	NMRP	NATIONAL MAIZE RESEARCH PROGRAM, NEPAL AGRICULTURAL RESEARCH COUNCIL	NEPAL			70	-	-		70
28	OTHER	OTHER	other			439	307	94		840
29	PHBI	PIONEER HI BRED INTERNATIONAL INC	USA			-	-	800		800
30	PU	PURDUE UNIVERSITY	USA			-	243	-		243
31	RTI	ROYAL TROPICAL INSTITUTE	NETHERLANDS			737	-	-		737
32	RUM	REGENTS OF THE UNIVERSITY OF MINNESOTA	USA			250	-	-		250
33	SADC	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION	Swizz			-	-	68		68
34	SFFSA	SYNGENTA FOUNDATION FOR SUSTAINABLE AGRICULTURAL	SWITZERLAND			400	-	-		400
35	STA	SEED TRADE ASSOCIATION	BANGLADESH			-	49	2		51
36	UACH	UNIVERSIDAD AUTONOMA DE CHAPINGO	MEXICO			252	-	85		337
37	UGAN	DEPT. OF SOIL SCIENCE, UNIVERSITY OF GHANA	GHANA			50	-	-		50
38	UOB	UNIVERSITY OF BARCELONA	SPAIN			155	-	-		155
39	UON	UNIVERSITY OF NAIROBI	KENYA			74	-	-		74
40	UOP	UNIVERSITY OF PRETORIA	SOUTH AFRICA			100	-	-		100
41	URA	UNITE DE RECHERCHE AIDA CIRAD PERSYST	FRANCE			50	-	-		50

42	WAU	WAGENINGEN UNIVERSITY	NETHERLANDS		640	-	-		640
43	WAUR	WAGENINGEN UR	NETHERLANDS		300	-	-		300
44	Others less than 50k				496	502	366	-	1,364
		IITA :							
45	AFRICARICE	AFRICARICE	BENIN REPUBLIC		-	-	2,564	-	2,564
46	AFRICARICE	AFRICARICE	SENEGAL		-	-	63	-	63
47	CRI	CRI	GHANA		51	23	31	-	104
48	IAR	IAR	NIGERIA		-	31	21	-	52
48	ICARDA	ICARDA	TUNISIA		-	-	3,092	-	3,092
50	ICIPE	ICIPE	KENYA		-	-	131	-	131
51	IER	IER	MALI		-	56	109	-	165
52	Others less than 50k				72	142	217		430
Total for CRP					6,659	5,516	8,520	-	20,696
5. CIMMYT					Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country		Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	AATF	AFRICAN AGRICULTURE TECHNOLOGY FOUNDATION	ZIMBABWE		-	-	121		121
2	ACIAR	AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH	AUSTRALIA		-	-	138		138
3	ARC	AGRICULTURAL RESEARCH COUNCIL	ZIMBABWE		-	238	51		289
4	ARS	SERVICIO DE INVESTIGACION AGRICOLA	USA		11	32	10		53
5	BARI	Bangladesh Agriculture Research Institute	BANGLADESH		-	184	(2)		182
	CAS	CREATIVE AGRI	CHINA						

6		SOLUTIONS PVT. LTD.			25	6	27		57
7	CPL	CULTURAL PRACTICE LLC	USA		129	-	-		129
8	DATECH	DIVERSITY ARRAYS TECHNOLOGY, PTY LTD.	AUSTRALIA		678	-	-		678
9	EIAR	ETHIOPIAN INSTITUTE OF AGRICULTURAL RESEARCH	ETHIOPIA		1	136	10		147
10	ERTE	ENERGIN .R TECHNOLOGIES 2009 LTD	ISRAEL		200	-	-		200
11	ICRISAT	INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI ARID TROPICS	INDIA		0	29	29		59
12	IDE	INTERNATIONAL DEVELOPMENT ENTERPRISES	BANGLADESH		-	173	-		173
13	IFPRI	INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE	USA		-	54	-		54
14	IIAM	INSTITUTE OF ARICULTURAL RESEARCH OF MOZAMBIQUE	MOZAMBIQUE		187	58	2		247
15	IITA	INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE	NIGERIA		75	2,079	1		2,155
16	ILRI	INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE	KENYA		100	94	-		194
17	INIFAP	INSTITUTO NACIONAL DE INVESTIGACIONES FORESTALES, AGRICOLAS Y PECUARIAS	MEXICO		69	-	422		491
18	IPGRI	INTERNATIONAL PLANT GENETIC RESOURCES INSTITUTE	Italy		100	-	-		100
19	IPNI	INTERNATIONAL PLANT NUTRITION INSTITUTE	INDIA		606	-	-		606
	IRRI	INTERNATIONAL	PHILIPPINES						

20		RICE RESEARCH INSTITUTE			-	822	-		822
21	JHI	THE JAMES HUTTON INSTITUTE	SCOTLAND		180	-	-		180
22	KARI	KENYA AGRICULTURAL RESEARCH INSTITUTE	KENYA		-	228	9		238
23	LGC	LGC GENOMICS LLC	UK		-	-	60		60
24	LI-BIRD	Local Initiatives for Biodiversity, Research and Development	NEPAL		51	-	-		51
25	MATC	Meru Agro-Tours & Consultants Co. Ltd	TANZANIA		28	25	-		53
26	MSU	MICHIGAN STATE UNIVERSITY	USA		85	6	-		91
27	NMRP	NATIONAL MAIZE RESEARCH PROGRAM, NEPAL AGRICULTURAL RESEARCH COUNCIL	NEPAL		70	-	-		70
28	OTHER	OTHER	other		439	307	94		840
29	PHBI	PIONEER HI BREB INTERNATIONAL INC	USA		-	-	800		800
30	PU	PURDUE UNIVERSITY	USA		-	243	-		243
31	RTI	ROYAL TROPICAL INSTITUTE	NETHERLANDS		737	-	-		737
32	RUM	REGENTS OF THE UNIVERSITY OF MINNESOTA	USA		250	-	-		250
33	SADC	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION	Swizz		-	-	68		68
34	SFFSA	SYNGENTA FOUNDATION FOR SUSTAINABLE AGRICULTURAL	SWITZERLAND		400	-	-		400
35	STA	SEED TRADE ASSOCIATION	BANGLADESH		-	49	2		51
36	UACH	UNIVERSIDAD AUTONOMA DE CHAPINGO	MEXICO		252	-	85		337
37	UGAN	DEPT. OF SOIL SCIENCE, UNIVERSITY OF GHANA	GHANA		50	-	-		50
	UOB	UNIVERSITY OF	SPAIN						

38		BARCELONA			155	-	-		155
39	UON	UNIVERSITY OF NAIROBI	KENYA		74	-	-		74
40	UOP	UNIVERSITY OF PRETORIA	SOUTH AFRICA		100	-	-		100
41	URA	UNITE DE RECHERCHE AIDA CIRAD PERSYST	FRANCE		50	-	-		50
42	WAU	WAGENINGEN UNIVERSITY	NETHERLANDS		640	-	-		640
43	WAUR	WAGENINGEN UR	NETHERLANDS		300	-	-		300
44	Others less than 50k				496	502	366	-	1,364
Total for CRP					6,537	5,264	2,292	-	14,093
11. IITA					Actual Expenses - This Year				
Item	Institute Acronym	Institute Name	Country		Windows 1 & 2	Window 3	Bilateral	Center Funds	TOTAL
1	AFRICARICE	AFRICARICE	BENIN REPUBLIC		-	-	2,564	-	2,564
2	AFRICARICE	AFRICARICE	SENEGAL		-	-	63	-	63
3	CRI	CRI	GHANA		51	23	31	-	104
4	IAR	IAR	NIGERIA		-	31	21	-	52
5	ICARDA	ICARDA	TUNISIA		-	-	3,092	-	3,092
6	ICIPE	ICIPE	KENYA		-	-	131	-	131
7	IER	IER	MALI		-	56	109	-	165
8	Others less than 50k				72	142	217	-	431
Total for CRP					123	252	6,228	-	6,603