RESEARCH PROGRAM ON Dryland Cereals

CGIAR

A global alliance for improving food security, nutrition and economic growth for the world's most vulnerable poor.

CRP Commissioned External Evaluation of the CGIAR Research Program on Dryland Cereals

Inception Report

July 2015

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List of Acronyms

A4NH	Agriculture for Nutrition and Health (CRP)
AREEO	Agricultural Research, Education and Extension Organization, Iran
ARI	Advanced Research Institute
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
CCAFS	Climate Change Agriculture and Food Security (CRP)
CCEE	CGIAR Research Programme Commissioned External Evaluation
CGIAR	Consultative Group for International Agricultural Research
CORAF/WeCARD	The West and Central African Council for Agricultural Research and Development
CRP	CGIAR Research Programme
CWANA	Central and west Asia and North Africa
Dryland Cereals	CGIAR Research Programme on Dryland Cereals
ESA	East and Southern Africa
ICAR	Indian Council of Agricultural Research
ICARDA	International Center for Agricultural Research in Dry Areas
ICRISAT-	International Crop Research Institute for the Semi-Arid Tropics
IDO	Intermediate Development Outcome
M&E	Monitoring and Evaluation
NARS	National Agricultural Research System
NRI	Natural Resources Institute, University of Greenwich, UK

R4D	Research for Development
SA	South Asia
SLO	System Level Outcome
SRF	Strategy and Results Framework (CGIAR)
WCA	West and Central Africa

Executive Summary

The external evaluation of the **CGIAR Research Programme on Dryland Cereals (Dryland Cereals)** is one of five CRP commissioned evaluations supported by the Independent Evaluation Arrangement (IEA). It is intended to provide accountability for the progress of the programme and to generate lessons and recommendations to enhance management decision making and programme improvement and to feed into the proposal for the second phase of the CRP.

This inception report briefly covers the background, strategic components and structure of the Dryland Cereals, including the governance structure and budget distribution. It lays out the scope and framework of the evaluation and outlines the approach and methods to be used, the stakeholders to be consulted, the selection of countries to visit, the evaluation team and the organisation and timing of the evaluation and delivery of reports.

The Dryland Cereals started in July 2012. It is a global partnership between the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) which is the lead centre, and the International Center for Agricultural Research in Dry Areas (ICARDA), together with other public and private institutes and organisations, governments and farmer organisations.

The Dryland Cereals is targeted at low income, food deficit countries in sub Saharan Africa and South Asia, with spill over potential to other dryland cereal production ecologies. The programme justification cites the relative neglect, inadequate resources and inefficient fragmentation of research on dryland cereal crops as a reason for bringing together a critical mass of international resources and expertise focused on a geography by crop portfolio with important common elements.

The **Dryland Cereals vision** is for improved food security, nutrition, income and resilience of smallholder agriculture in the dryland regions of Africa and Asia, through the collaborative development and deployment of solutions for crop improvement, crop management, seed systems, post-harvest technologies and market access to dryland cereal crops - barley, finger millet, pearl millet and sorghum.

The evaluation will assess the planned outputs and outcomes of the programme, across all funding sources. The scope of the evaluation includes assessing results of research prior to the establishment of the Dryland Cereals and progress since the establishment of the Dryland Cereals. It will evaluate the more recently developed thematic flagship approach and the extent to which it has enhanced the relevance and efficiency of Dryland Cereals.

The evaluation will also examine the governance arrangements and management structure of the Dryland Cereals and the changes made. This includes the institutional structure, culture and management systems of the CRP and ICRISAT, how the CRP is managed across centres and the extent of inter-centre collaboration and cooperation and partnership building.

The evaluation will examine the extent to which the Dryland Cereals addresses the challenges of linking research outputs to development outcomes and of scaling out promising results for greater impact and sustainability. It will examine the validity of the assumptions underlying the program theory of change.

Six **evaluation criteria** are used. *Relevance*, including coherence, comparative advantage and programme design; *quality of science*; *effectiveness* which examines how far the Dryland Cereals has achieved/is likely to achieve the intended results and benefits; *efficiency* which examines how the CRP is being managed and delivered, including questions on management and governance; and *impact and sustainability*, looking at impacts and scaling up of earlier research as well as considering progress towards impact from the Dryland Cereals to date.

The **evaluation questions** have been developed based on the review of programme documentation and discussions with Dryland Cereals management and researchers during the inception phase. Six overarching questions have been developed as a result of discussions during the inception period. These focus particularly on the question of added-value generated by the Dryland Cereals.

Questions on **three cross cutting themes** – gender, partnerships and capacity strengthening were also developed. On gender, the evaluation will explore how far the Dryland Cereals gender strategy is being implemented. Capacity strengthening initiatives will be considered, and how these contribute to research quality. The quality and strategic function of partnerships among the implementing centres and research and development partners will be examined.

An **evaluation matrix** was developed, mapping data sources and methods against the evaluation criteria and questions. Methods include documentation analysis, interviews, on line surveys of scientists and partners, discussions with research teams and partners on country visits. The allocation of the budget, by partner, product line/crop cluster, country and flagship will be analysed to assess this relates to the intended outputs and outcomes. The evaluation process will be participatory in nature in order to capture the diverse range of perspectives and values of partners and stakeholders. The evaluation team will ensure information obtained will be validated and cross-checked through triangulation and comparison of alternative sources, data, methods, and theories.

The evaluation team will maintain confidentiality and views expressed will not be attributed to individuals or used in such a way that the individual source is identifiable. Notes will be kept confidential to the team and shared through drop box accessible to the team members only.

The evaluation will cover the Dryland Cereals crops through visits to at least two countries in different regions. Countries were prioritised where there are activities relating to more than one dryland cereal crop and the presence of flagship and product-line leaders and major partners of the programme. The East and Southern Africa Regional centre in Nairobi was chosen as a convening point for meeting researchers from Kenya, Uganda and Tanzania, and likewise, Dakar Senegal for researchers from Mali, Niger and Senegal. Countries for barley are Morocco, India and Ethiopia. For pearl millet, India, Niger, Kenya (and Tanzania) were selected. For sorghum, the countries chosen are India (post rainy season sorghum), Ethiopia, Kenya (Tanzania) and Mali, and for finger millet, Ethiopia and Kenya (Uganda and Tanzania).

The **timing of the evaluation and reporting** is between May to November 2015. A team meeting was held in early May to develop a common understanding of the evaluation objectives and design and to clarify team roles and responsibilities. The inception visit to India took place in June, with further country visits in July. The team agreed to share preliminary findings with Dryland Cereals management by the 1st August to contribute to pre proposal development for the second phase. Analysis and

drafting of the report will take place in August and September, the draft report produced by mid-October and the final evaluation report by mid-November.

The Evaluation Report will describe the findings, conclusions, and recommendations, based on the evidence collected according to the evaluation matrix. The main findings and recommendations will be summarized in an executive summary. Presentations will be prepared by the evaluation Team Leader for disseminating the Report to targeted audiences as appropriate.

1. Introduction

1.1 Background to the evaluation

The CGIAR has evolved over its history, with a major reform taking place in 2009, designed to unify the system, improve efficiency and increase the potential for development impact. A set of 15 CGIAR Research Programs (CRPs) were designed, each bringing together the work of different centres in a consortium arrangement to address a specific theme in agricultural research for development. The intention was to improve the alignment of research outputs with development impacts by leveraging synergies across the Centres' core competencies and developing effective partnerships.

Research in the CGIAR is guided by the Strategy and Results Framework (SRF), which sets out the System's common goals in terms of development impact (articulated as four System-Level Outcomes [SLOs])[1], strategic objectives and results in terms of outputs and outcomes. The SRF was first approved in 2011. In early 2015 a consultation process was implemented and a draft revised version of the SRF for 2016-2025 was produced. The revised framework identifies three main goals: reduce poverty; improve food and nutrition security for health; and improve natural resource systems and ecosystem services.

According to the decision of the CGIAR Fund Council in November 2013, in agreement with the Consortium Board, all CRPs should go through *some form of external evaluation* in order to generate lessons to feed into the final proposals for the second phase of the programme. To this end, the CGIAR's Independent Evaluation Arrangement (IEA) which is responsible for system-level evaluations[2], have commissioned full evaluations of ten CRPs and are supporting five other CRPs that are not undergoing a full IEA-commissioned CRP evaluation to commission their own evaluations[3]. The IEA is committed to supporting these five CRPs by providing a Common framework document and methodological support. In June 2014, CRP Directors agreed to undertake CRP commissioned evaluations with advice and quality assurance by the IEA. While there is some flexibility for each CRP to design its evaluation, support from the IEA is intended to achieve basic consistency and comparability across the evaluations. The IEA will serve as a main point of contact for the CRPs' evaluation focal points in the development and implementation of the evaluations. This includes advice on the background, timeline, modalities and processes, terms of reference, team selection, the oversight group, evaluation methodology and evaluation standards and guidelines. It is responsible for the quality assurance of the process and deliverables, including the inception and final reports.

This inception report is for the CRP commissioned external evaluation of the **Dryland Cereals**.

The CGIAR's specific niche is characterized by: providing research leadership and international public goods; safeguarding and utilizing genetic resources; strengthening research capacity; partnering for impact; informing global debates and managing open data and sharing knowledge.

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[1] Reducing rural poverty; Improving food security; Improving nutrition and health; Sustainable management of natural resources, A Strategy and Results Framework for the CGIAR, CGIAR, 2011.
[2] http://iea.cgiar.org/
[3] Background, Roles and Responsibilities for CRP Commissioned External evaluations (CCEE) for the following CRPs: A4NH, Grain Legumes, Humid tropics, Dryland Systems, Dryland Cereals. CGIAR, IEA.

The CRP programmes are funded through a pooled funding mechanism. The CGIAR Fund is a multi-donor, multi-year funding mechanism that provides funding to CRPs through three "Windows"; Window 1 allocated across CRPs as per Consortium decision; Window 2 to donor-specified CRPs; and Window 3, to donor-specified centres. In addition, financial resources for specific projects or activities are received directly from donors as bilateral funding[4].

1.2 Evaluation purpose and clients

The primary purpose of the CRP Commissioned External Evaluation (CCEE) is to provide input towards continued enhancement of the programme, specifically:

- To meet funders needs for accountability and provide essential information for decision-making by programme management and its funders with respect to the second phase;
- To consolidate learning to enable continuous improvement in the CRP's capacity to deliver efficiently and effectively on its Intermediate Development Outcomes and contribute to the CGIAR System Level Outcomes, especially with regard to research lines, partnerships, governance and management, skills, and resource requirements.

The evaluation will therefore provide both accountability and learning. It should re-enforce the principle of mutual accountability and responsibility among the programme, donors and partners. The evaluation process will aim to foster common understanding and institutional learning among the CRP and its stakeholders, for improving programme relevance, efficiency and the likelihood of sustainable results. It will provide useful information for decision making by Dryland Cereals management and stakeholders to inform the development of their full proposals for the new CRP funding cycle and inform the appraisal process by the consortium, ISPC, and CGIAR fund council.

The evaluation will examine the extent to which Dryland Cereals is responding within its mandate to the vision and focus of the reformed CGIAR; whether it has a delivery orientation, clear accountability mechanisms and facilitates synergy through building efficient partnerships. It will assess the relevance and validity of the CRP, its planned impact pathways and the likelihood of achieving results and review progress towards achievements on the major research areas since its approval in 2012. It will assess the adequacy of systems in place for good organisational performance.

The main stakeholders and audiences of the evaluation are:

- The CGIAR fund council and the Consortium Board who have an interest in the accountability of the CRP and require information to help prioritise future programmes and resource allocation.
- The management of Dryland Cereals, as part of accountability for performance, learning for improvement and increasing the likelihood of future financial support.
- The CRP governance committee which provides strategic advice to the programme, in particular, lessons about the effectiveness of governance committees.
- Researchers and research partners who have an interest in assessment of research performance and quality and in collaboration mechanisms and capacity development.

[4] http://www.cgiar.org/who-we-are/cgiar-fund/

- Development and boundary partners who are interested in the relevance, effectiveness and impact of research and how this can be enhanced.
- The IEA as part of ensuring overall accountability of the CGIAR and learning from research programmes for sharing across the CRPs.
- The lead centre and its board which has overall financial responsibility and the board and management of participating centres who are interested in the research outcomes and the centre's organisational performance and comparative advantage.
- Donors are interested in accountability and performance and information for decision making on resource allocation.

1.3 Scope and structure of the inception report

This inception report lays out the scope and framework of the evaluation and outlines the approach and methods to be used. Firstly, an outline is given of the context, objectives, strategic components and structure of the Dryland Cereals, including the governance structure and budget distribution. The scope of the evaluation is then discussed, the evaluation criteria and questions, the approach and methods to be used, the stakeholders to be consulted, the country field visits and the organisation and timing.

2. The Dryland Cereals background and context

2.1 Context of CGIAR reform

The CGIAR donors' joint declaration on the main principles of reform (2008) sets out the basis for the transformation of the CGIAR, emphasising harmonisation of approaches to funding and implementation, results based management, effective governance, efficient resource utilisation and broad collaboration:

1) To harmonize our approach to funding and implementing international agricultural research for development through the CGIAR Fund, The Strategy and Results Framework (SRF) and the consortium established by the Centres, respectively;
2) To manage for results in accordance with the agreed SRF and the Mega Programs that derive from the SRF;
3) To ensure effective governance and efficient operations in the provision and use of our resources; and
4) To collaborate and partner with and among funders, implementers, and users of SRF research, as well as other external partners supporting the SRF.

The SRF (2011) sets out the strategic design criteria applicable across the CRPs; (ii) a focus on delivering outcomes and impacts towards the system level outcomes (SLOs); (iii) quality of science; (iv), management of partnerships, including both research and development partners; (v) efficiency of programme management; and (vi) accountability, sound financial planning and efficiency of governance. In relation to the first criteria, the CRPs contribute to achievement of the SLOs (reducing rural poverty; improving food security; improving nutrition and health; sustainable management of natural resources) through the programme level, intermediate development outcomes (IDOs). CRPs were encouraged to develop theories of change and to map the impact pathways connecting research efforts to development outcomes, specifying clear target domains in terms of agro-ecologies and end

user groups and measurable results at outcome level. The Dryland Cereals was developed and approved in 2012, and therefore benefited from the guidance given in the SRF.

2.2 Context of Dryland Cereals Research

The Dryland Cereals CRP proposal, 2012, sets out the justification for a focus on dryland cereals in terms of the size of population living in dryland areas where these crops are important (650 million people with 155 million in target countries), the levels of poverty, hunger and malnutrition, the area of production and the agro ecologies in which there are few, if any, alternative staple food crops. These areas are characterised by high dependency on these cereal crops for human food and nutrition, for livestock feed and fodder and for income to support livelihoods. Improving the productivity and production of dryland cereal crops can provide additional food security benefits to the poorest. Dryland cereals provide important sources of carbohydrates, energy, protein, fibre, calcium, iron, and certain vitamin B complexes, which are especially relevant for poor households that depend on these crops. The Dryland Cereals is targeted at low income, food deficit countries in sub Saharan Africa and South Asia, with spillover potential to other dryland cereal production ecologies.

Data on dryland cereal crop production and demand given in the original proposals and in the CRP's response to Consortium office's comments on the extension proposal, show different trends in different regions. For example, sorghum production is rising in west and central Africa (WCA) and east and southern Africa, (ESA) but declining in south Asia (SA), while millet production is increasing in WCA and ESA, and to a lesser extent in SA. Barley production is increasing in Central and west Asia and North Africa (CWANA), ESA and to a lesser extent in SA. Yields have risen in SA, but not in Africa, yet it is estimated there is potential for two to four fold yield increases in dryland cereals, especially with the use of hybrids. The major constraints to adoption of improved varieties were identified as access to seed, low yield and soil fertility, pest and diseases and stover quality and yield.

There is an increase in the non-food uses of dryland cereals, for livestock feed and fodder and for brewing, especially in India, however, 50-75% is still used for food and the crops are characterised by their multiple uses and users. New markets are emerging especially for barley and finger millet, associated with the health products industry, such as gluten free and other specialised diets. There is scope for collaborative work on processing, equipment and industrial uses.

The programme justification also cites the relative neglect, inadequate resources and inefficient fragmentation of research on these crops as a reason for bringing together a critical mass of international resources and expertise focused on a geography by crop portfolio which has similar breeding and development approaches and common researchable issues and concerns (e.g. role of women, production risks and climate change, genetic tolerance for drought, high temperature and soil salinity and resistance to pests and diseases, seed delivery systems) and capacity development. The evaluation team will review the additional information on demand and research priorities generated by the country baseline studies and value chain analyses conducted within the programme. They will also examine the rationale for the inclusion of the four specifically targeted dryland cereal crops – sorghum, pearl millet, finger millet and barley.

2.3 The Dryland Cereals

The CGIAR Research Program (CRP) on Dryland Cereals (CRP-3.1) which officially started in July 2012, is a global partnership between the International Crop Research Institute for the Semi-Arid Tropics

(ICRISAT) which is the lead centre, and the International Center for Agricultural Research in Dry Areas (ICARDA), together with other public and private institutes and organisations[5], governments and farmer organisations.

Vision, strategy and structure

The strategic dimensions of the CRP are the following:

Vision: Improved food security, nutrition, income and resilience of smallholder agriculture in the dryland regions of Africa and Asia, through the collaborative development and deployment of solutions for crop improvement, crop management, seed systems, post-harvest technologies and market access to dryland cereal crops - barley, finger millet, pearl millet and sorghum.

The Dryland Cereal's **mission** is to Identify and implement necessary R4D interventions to strengthen the value chains of the dryland cereal crops in the target region, utilising assembled gender-disaggregated baseline information, demand analysis, gap/constraint analysis, priority setting, and foresight planning and technology generation.

The Dryland Cereals has five Intermediate Development Outcomes (IDOs) that are linked to the CGIAR Strategic Level Outcomes of increased food security, income, nutrition and environmental sustainability:

1. Improved productivity of dryland cereals in smallholder farming systems in Africa and Asia
2. Increased and stable access to dryland cereal food, feed and fodder by the poor, especially rural women and children
3. Increased consumption of nutritious dryland cereals by the poor, especially among nutritionally vulnerable women and children
4. Increased and more equitable income from marketing dryland cereal grain, fodder and products by low income value chain actors, especially smallholder women farmers
5. Increased capacity to adapt to environmental variability and longer terms changes in low income communities in Africa and Asia

The programme is targeting 20% of the total area of dryland cereals of 60.1 million ha (11.8 million ha) and 5.8 million farm households, affecting a total population of 34 million. The aim over a ten year period is achieve a sustainable 16% increase in dryland cereal farm level crop productivity and in total crop production. This is estimated to allow an additional 39 million households in the countries of the target regions to meet at least 30% of their energy requirements from dryland cereals[6].

The primary beneficiaries are sorghum and millet growing households in WCA (44%) and South Asia (41%), with more modest improvements in food security in ESA (12%) and CWANA (3%). Two broad target beneficiary groups were identified, subsistence and market oriented farmers. These categories were seen as part of a continuum rather than distinct separate groups, but the distinction led to

[5] Advanced Public and Private Research Institutes, e.g. CIRAD, the University of Queensland, EMBRAPA, Cornell University, the University of Georgia and the University of Hohenheim, the University of California. **University of California,** Davis. Also USDA-ARS, North Dakota on barley genomics research, brewing industry companies and USAID on the development of malt barley. Dryland Cereals Proposal for Extension, 2015-16 p 12.

[6] Dryland Cereals CRP Proposal, August 2012, p14

recognition of their different constraints, production objectives and hence different research needs. For subsistence farmers, the emphasis was put on improved food security, preferred qualities for food consumption, yield stability and risk reduction, with limited additional investment, while for market oriented farmers, the focus was hybrids with traits and quality required by the market, technologies which require additional investment. These considerations informed the development and delivery of the program's seven 'product lines' or clusters, defined around geographical regions, crop, beneficiary type and market orientation (table 1). They were based on analysis of the major constraints for the different dryland cereal crops in five target regions and differentiation of the needs of subsistence oriented and market oriented farmers (figure 1).

Table 1 Product lines/crop clusters and regions

	Crop/region	Objective	Countries
PL1	SORGHUM West Africa	Supporting farmers' transition from subsistence to market orientation with productive, nutritious, photoperiod-sensitive sorghum production packages for multiple uses in West Africa	Burkina Faso, Mali, Niger and Nigeria
PL2	PEARL MILLET East & West Africa	Improving food security for subsistence smallholder farmers in East and West Africa with productive and nutritious pearl millet food and fodder production technologies	Burkina Faso, Mali, Niger, Nigeria, Senegal, Sudan
PL3	SORGUM, East Africa	Drought tolerant, highly productive multi-use sorghum varieties for food and processing uses in the dry lowlands of East Africa	Ethiopia, Sudan Tanzania, Mozambique
PL4	FINGER MILLET East and Southern Africa	Improving nutritional security with productive and nutritious finger millet production technologies for East and Southern Africa	Ethiopia, Kenya, Tanzania, Uganda
Pl5	BARLEY, Central and West Asia & North Africa, South Asia	Multi-purpose barley production technologies to meet food, feed and fodder demands in the driest regions of Africa and Asia	Ethiopia, India, Iran, Kazakhstan, Morocco and Syria
PL6	PEARL MILLET, East Africa & South Asia	Improving food security and incomes with productive and nutritious multi-purpose pearl millet hybrid production technologies for East Africa and South Asia	India
PL7	POST RAINY SEASON SORGHUM, South Asia	Multi-purpose post-rainy season sorghum hybrid production technologies for improving food and fodder availability in the driest regions of South Asia	India

Source: Dryland Cereals CRP Proposal, August 2012

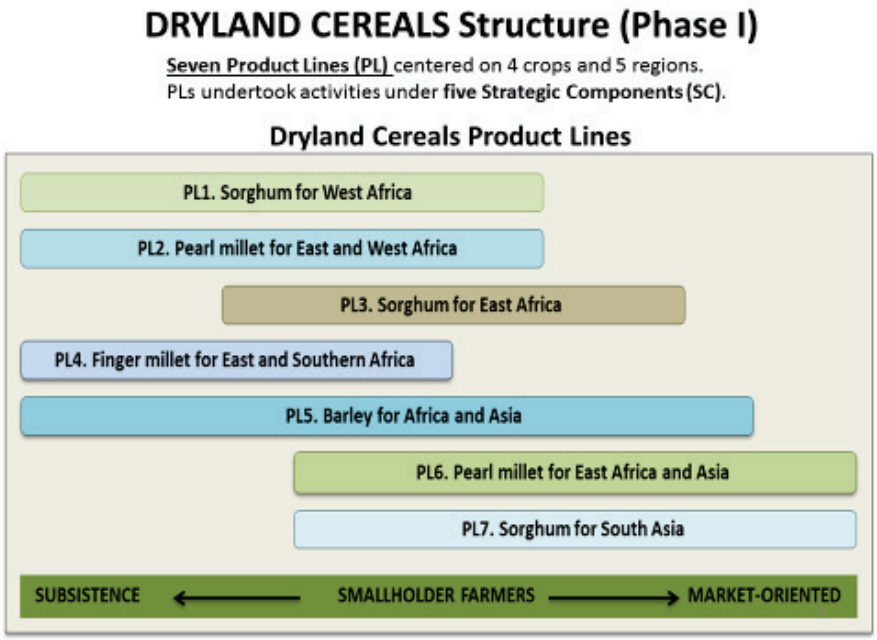

Figure 1: Dryland Cereals Product lines on subsistence to market continuum.

The IDOs have associated indicators and targets which are vary according to crop and region; for example in WCA and ESA, the target for IDO 1, Improved productivity, is an increase in grain yield is 30-40% for sorghum and 20-30% for pearl millet, with 50% of the increase coming from women farmers' fields. For pearl millet and sorghum in India, the target is 15-40% increase in grain yield and 5-10% in stover yield and 5-10% increase in stover digestibility. For barley overall, the targeted yield increase is 20-30%. For finger millet in ECA it is 30-50% increase in yield and 20% in premium quality marketable grain. Indicators and targets for the other IDOs are similarly differentiated.

In addition to a strong crop improvement focus, the product lines were intended to develop entire production packages addressing five strategic components (SCs) (figure 2). These reflected a more integrated value chain perspective, from understanding needs and context, through interventions to improve crop productivity, develop seed systems, new products and market access. The five Strategic Components addressed are (1) demand and constraint analysis, (2) crop improvement, (3) crop management, (4) seed systems, and (5) post-harvest processing.

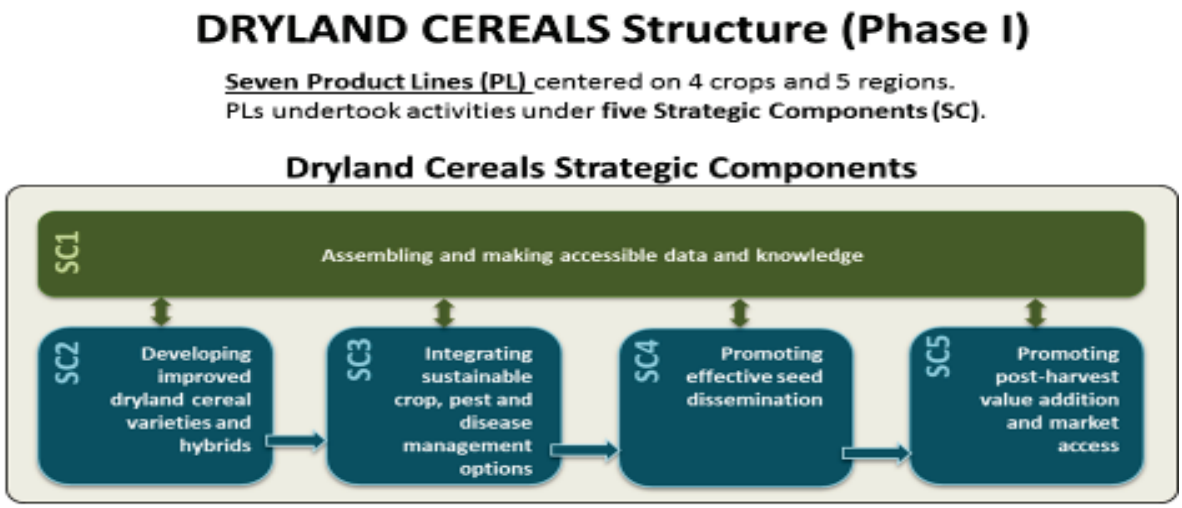

Figure 2: Dryland Cereals Strategic components.

The first 3 year phase of the Dryland Cereals was intended to run from 1 June 2012 until 30 June 2015, but as part of the Consortium effort to synchronize all CRPs to start Phase II in January 2017, Dryland Cereals Phase 1 ended in December 2014 and an extension phase was designed to run from 1 January 2015 until the end of December 2016.

The structure of the Dryland Cereals has evolved since the original proposal in 2012. The design of the phase 1 extension modified the phase 1 structure by designating the strategic components as **flagship projects**, and the product lines as clusters of activities to address these. The intention was to enhance integration of implementation along the delivery pipeline from demand analysis to product delivery, to scaling up and out, in order to deliver the intermediate development outcomes (IDOs) and the system level outcomes (SLOs). Increased emphasis was placed on understanding the nature of demand and adoption constraints, crop management, seed systems and input services and post-harvest processing technologies and output markets. It was anticipated that these areas would open up broader opportunities for collaboration with other CRPs.

Impact pathway and theory of change

As the programme has evolved, so has the conceptualisation of the impact pathway and the underlying theory of change. The impact pathway (figure 3) is portrayed as a sequential linking of the five flagship projects, from assessing demands and constraints, to informing planning and priority setting in flagship 1, through the crop improvement and crop management research, to developing seed and input systems and analysis to contribute to an enabling policy environment, to facilitating output market access. This simplified impact pathway diagram does not show the actors or institutions needed to ensure the components are delivered and the connections made between them. Key to the 'delivery mechanism' to farmers are the development partners. For example, farmer organisations and NGOs play an important role in the impact pathway for 'subsistence' farmers, while market oriented smallholders require linkages to traders, contractual relationships with private seed companies and animal industries.

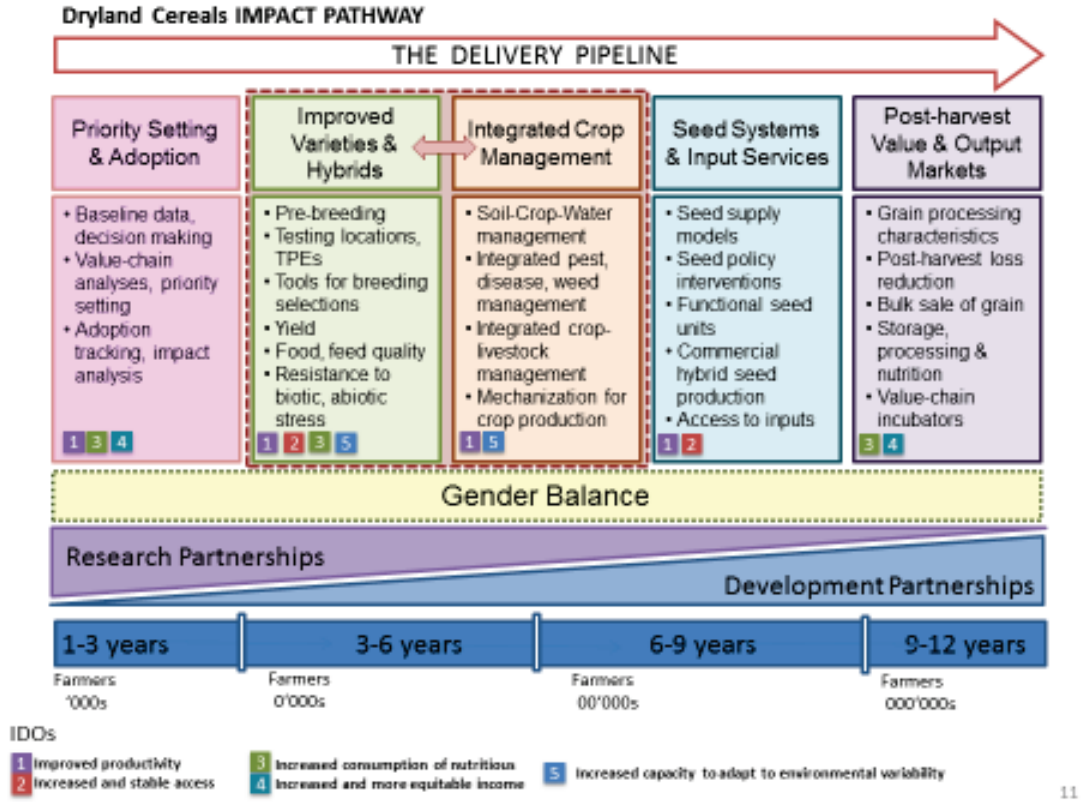

Figure 3: Impact pathway

(Source: Dryland Cereals extension proposal)

The theory of change diagram from the Dryland Cereals extension proposal (figure 4) depicts the broad logical pathway from research activities across the flagships linked to different crops and regions, to a series of research outputs, to research outcomes, to intermediate development outcomes and finally strategic level outcomes (or impacts). It shows the cross-cutting areas of partnerships and gender informing the research process, the behavioural change and capacity changes at outcome level and the assumptions that link outputs to outcomes. This is a somewhat stronger depiction of how the Dryland Cereals is to bring about change and the intended results, but it lacks an accompanying narrative explaining the specific linkages and causalities and differentiating the roles of different types of partners. The extension proposal does not elaborate the mechanism whereby the programme engages with development partners and farmers, nor at what point in the research process such engagement should start.

The status of the assumptions is rather ambiguous. It is not clear which are considered to be external conditions outside the control of the CRP but which affect delivery, and which are the necessary conditions achieved by the program in order to deliver results at the next stage. For example, 'Appropriate partners want to and are engaged in the process' and 'technologies are appropriate for target users' – are both areas where Dryland Cereals researchers would be expected to make efforts to identify and engage with appropriate and willing partners and through gender sensitive needs assessment and priority setting, on-farm testing and farmer feedback, have established which technologies are appropriate for target users. In this case, the assumption indicates that in order for the next stages to be reached, this has to be successful. In contrast, 'Governments want to enable

appropriate policy (for dryland cereals)' and 'Institutional support exists for researchers to employ new technology' do not appear to link with areas of activity and output shown in the theory of change diagram, although policy makers and public institutions are included in the 'reach' box and seed policy and institutional capacity are important constraints to uptake. The list of stakeholders that are reached by the project is not linked with particular outcomes and are not well differentiated, including in terms of gender. The two impact pathways for subsistence and market oriented farmers which were highlighted in the original programme proposal narrative are not indicated in the impact pathway diagram or the theory of change in the extension proposal.

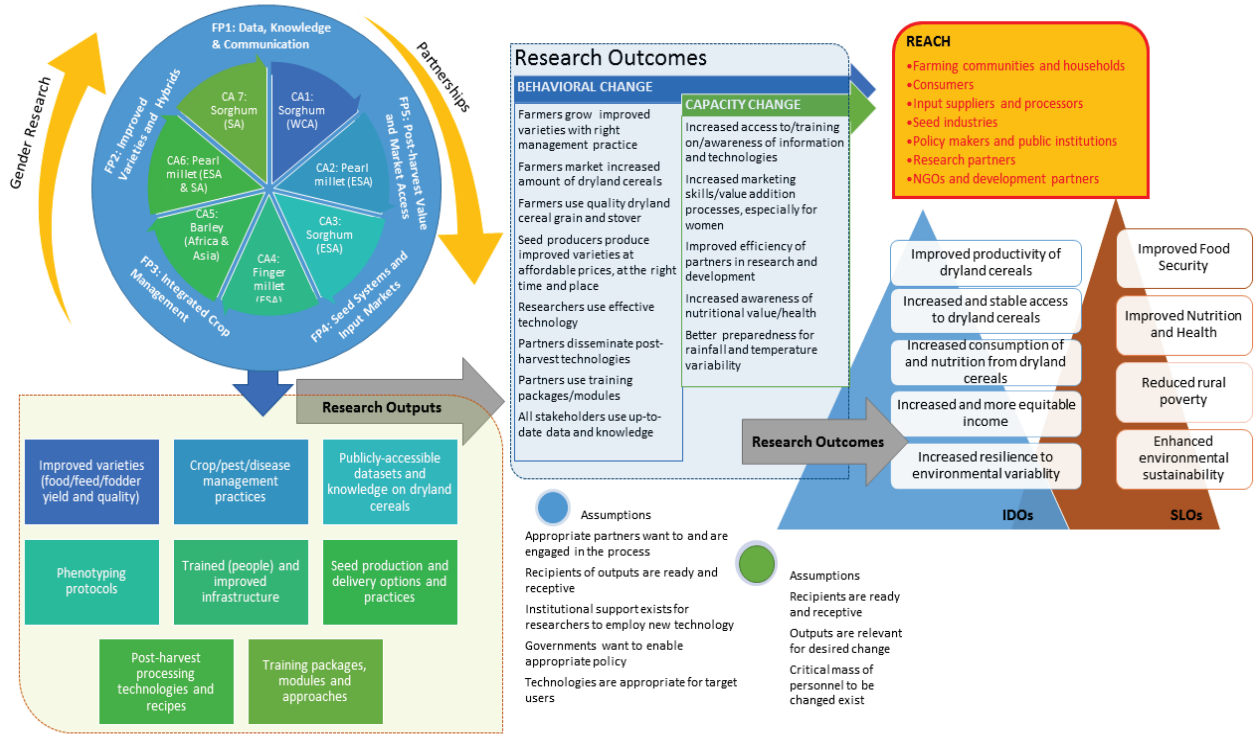

Figure 4: Dryland Cereals CRP Theory of change
Source: Dryland Cereals Extension proposal.

In terms of its function in the Dryland Cereals, the theory of change does not appear to be used as the basis for a monitoring framework or reflection on what is being delivered, or on what more is needed to activate more effective progress towards outcomes. It shows the dimensions of the intervention and broad causal pathways leading to impacts, but it does not indicate how specific connections at different stages of the impact pathway will help to deliver these changes. These potentially weak areas of institutional (as opposed to individual) capacity, partner engagement and incentives and the extent of commitment to policy influence will be investigated in more detail in the course of the evaluation.

Gender

The key roles of women in crop and livestock production, processing and use are recognised in the Dryland Cereals proposal and women farmers are indicated as a primary focus of the work, particularly with respect to 'identifying appropriate quality traits, suitable agronomic practices and profitable post-harvest processing and market access options'. The importance of equitable inclusion of women

along the value chain was highlighted. The Dryland Cereals produced a gender research strategy[7] in 2013. The document highlights the need for the programme to address the gaps in information on gender roles and gender disparities across the different regions and countries, in order to adapt and target technologies more appropriately.

The overall goal of the gender strategy is to reduce gender inequality in the production, processing and marketing of dryland cereals to drive an increase in whole family benefits in income, nutrition and food security. The strategy is intended to promote the integration of gender across the Dryland Cereals as an essential element of its overall agenda and its research and training activities. Strategic gender research to orient planning and priority setting was conducted, with gender studies completed in South Asia, East and Central Africa, West and Central Africa, and North Africa in 2013. Gender related outputs, outcomes and impacts related to the Flagship projects were articulated in the programme extension proposal. Other aspects of the programme addressed were the gender balance of staffing, recruitment of a senior scientist for gender research and a designation of 10% of flagships budgets to be for gender relevant R4D interventions, as well as an overarching budget for strategic gender research. It also includes support for gender related capacity building for programme participants. The evaluation will examine the extent to which the different aspects of the gender strategy are being implemented across the programme.

Partnerships

In addition to ICRISAT and ICARDA as partners in the Dryland Cereals CRP, other important national and international partners collaborate in the programme. Those indicated as partners on the programme web site are the Generation Challenge Programme (now ended), ICAR (India), AREEO (Iran) and IRD and CIRAD (France). Other stakeholders mentioned are USAID (International Sorghum, millet and other grains collaborative research support program), NARS, ARIs, NGOs, civil society organisation/farmer organisations and private sector companies. Linkages with advanced research institutions are seen as facilitating access to modern breeding methods for crop improvement, for example, linkages with the Breeding Management System (BMS) the successor to the Integrated Breeding Platform under the Generation Challenge Program. NARS, NGOs and civil society partners are important in terms of farm level integration and adaptation, communication, extension and seed distribution.

Specified links with other CRPs are indicated in the programme documentation - with Dryland Systems CRP to integrate genetic and management options within dryland systems and catalyse the interest of the private sector; with Climate change, agriculture and food security (CCAFS), on models of change and climate change ready crop options; with Policies Institutions and Markets (PIM) to address market issues and influence policy; with wheat, maize and rice on genetics and breeding methodologies; with Grain Legumes on cereal-legume systems; with Livestock and Fish for feed and fodder varieties; with

[7]Gender strategy. Feeding the forgotten Poor. Research program on Dryland Cereals. https://onedrive.live.com/view.aspx?resid=42697C9EAEF5F373!269&ithint=file%2c.pdf&app=WordPdf&authkey=!AFH2fE7fS1LYpWM

Agriculture for nutrition and health (A4NH) to improve nutritional traits of cereals and with Water, land and ecosystems (WLE) to improve sustainable water use.

There are also linkages with regional fora and SROs - ASARECA, CORAF, WeCARD on Striga resistance in sorghum, seed system development and soil fertility management and with the West Africa Agricultural Productivity Program WAAPP, Dry land cereals component. The extent to which these partnerships and linkages have been established, and the quality of the relationships will be assessed during the evaluation.

Governance and management structures

Figures 5 and 6 show the governance arrangements and management structure of the programme at the beginning of the Dryland Cereals and the revised structure from April 2015.

The changes are in the amalgamation of the Independent advisory committee and the Steering committee and the reporting line of the CRP Director through this committee to the lead centre governing board, while reporting administratively to the lead centre Director. The Program management unit and research management committee are separately identified. A new layer of management - the flagship project leaders is responsible for managing and reporting on the research areas, consolidating information from the product line leaders/activity cluster coordinators.

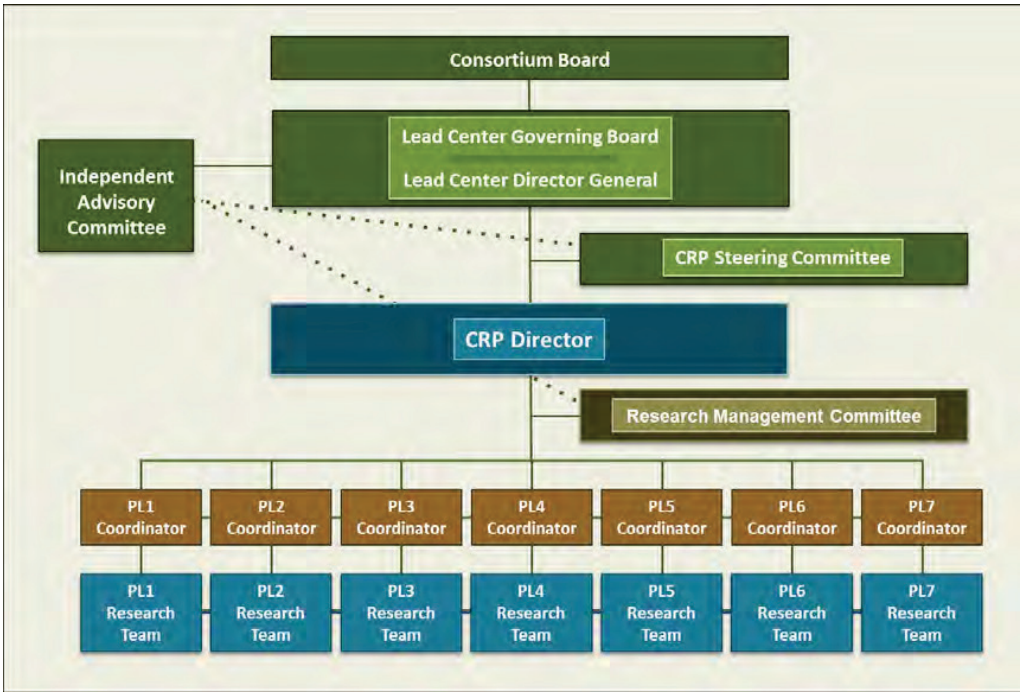

Figure 5: Governance & Management Structure (Phase 1)

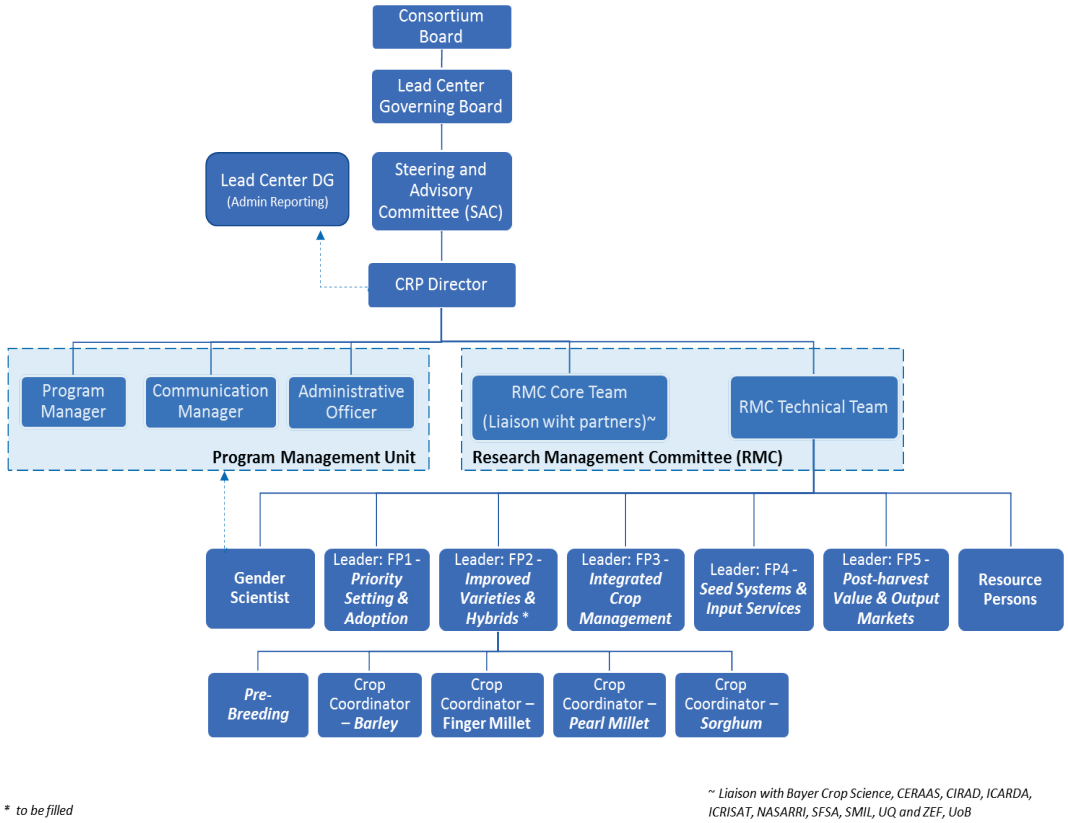

Figure 6: Governance & Management Structure (Extension phase)

During the inception visit to India, some important questions relating to effectiveness and efficiency of the programme were identified for further exploration; firstly, how the management structure of the CRP articulates with the management structure of the lead centre, particularly with the Centre research programmes and their Directors and secondly, how the CRP is managed across centres and the extent of inter-centre collaboration and cooperation and partnership building, particularly since the target crops had previously been the mandate of a single centre (ICRISAT – sorghum, finger millet and pearl millet; ICARDA – Barley).

Also during the inception visit, the evaluation team was told of an important change for phase 2 of the CRPs – the formal decision to merge the Dryland Cereals, the Dryland Systems and the Grain Legumes CRPs. They were also made aware of on-going discussions concerning the future role of the Dryland Cereals Director. This provides both challenges and opportunities for further reflection on the governance structure of the CRP.

Budget and expenditure

Dryland Cereals is the smallest of the 15 CRPs in terms of funding. Table 2 shows the expenditure for the Dryland Cereals for 2012-2014 indicating the sources of funding. Window 3/bilateral funding as a

proportion of the total is over 50% in all years. Actual expenditure[8] from 2012 to December 2014, was 44% on windows 1 and 2, 16% on window 3 and 41% from bilateral funding. Figure 7 shows the budget allocations from these different sources for 2012 to 2016. The implications of this will be explored during the evaluation.

Table 2: Overall expenditure summary (USD '000)

Year	W1 & W2	Window 3	Bilateral	Total	% Window 3/Bilateral
2012	3,215	140	4,076	7,431	57%
2013	7,890	1,293	7,066	16,249	51%
2014	8,526	5,589	7,180	21,296	60%
Total	**19,631**	**7,022**	**18,322**	**44,976**	**60%**

Source: Dryland Cereals Annual Reports 2012- 2014.

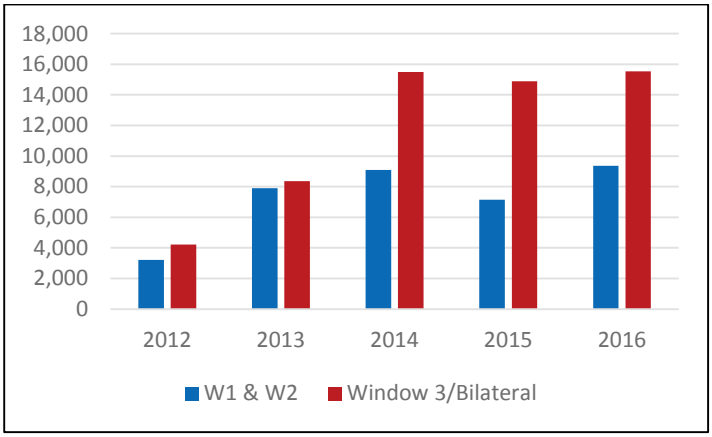

Figure 7: Comparison of Windows 1 & 2 funding to Window 3. Source: Dryland Cereals CRP Extension Proposal

The budget allocation by flagship project for 2014-2016, assigns the largest amount to FP 2 Improved varieties and hybrids, followed by FP3 Integrated crop management, FP1 Priority setting and adoption, FP4 Seed systems and input services and FP 5 Post–harvest value and output markets (figure 8). The dominance of crop improvement reflects the inherited historical pre CRP allocations.

[8] Dryland Cereals, Cumulative Financial Summary report.

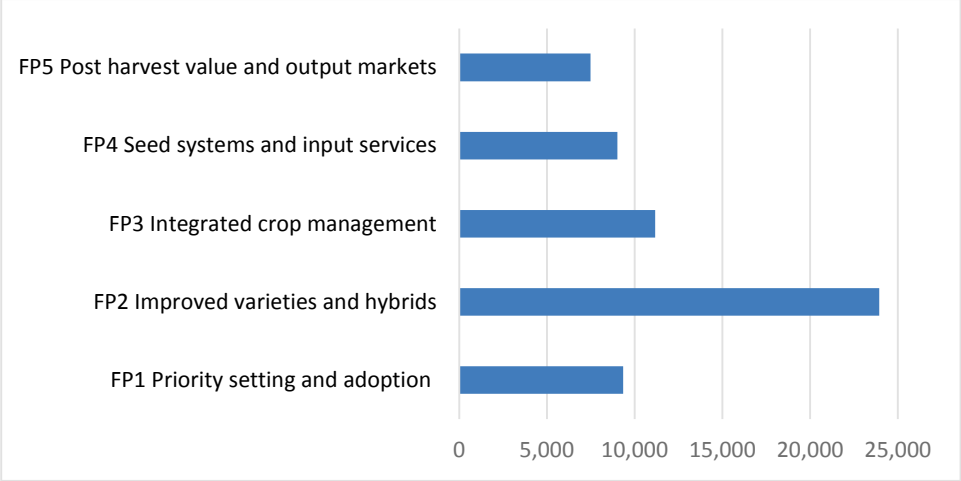

Figure 8: Budget for 2014- 2016 by Flagship project '000 USD (source: Programme data)

Allocation by Intermediate Development outcome is related to this; 29% is associated with IDO 1, improved productivity and 23% with IDO2, Increased and stable access to dryland cereal food, feed and fodder and IDO 4, Increased and more equitable income (figure 9). Gender research is funded separately.

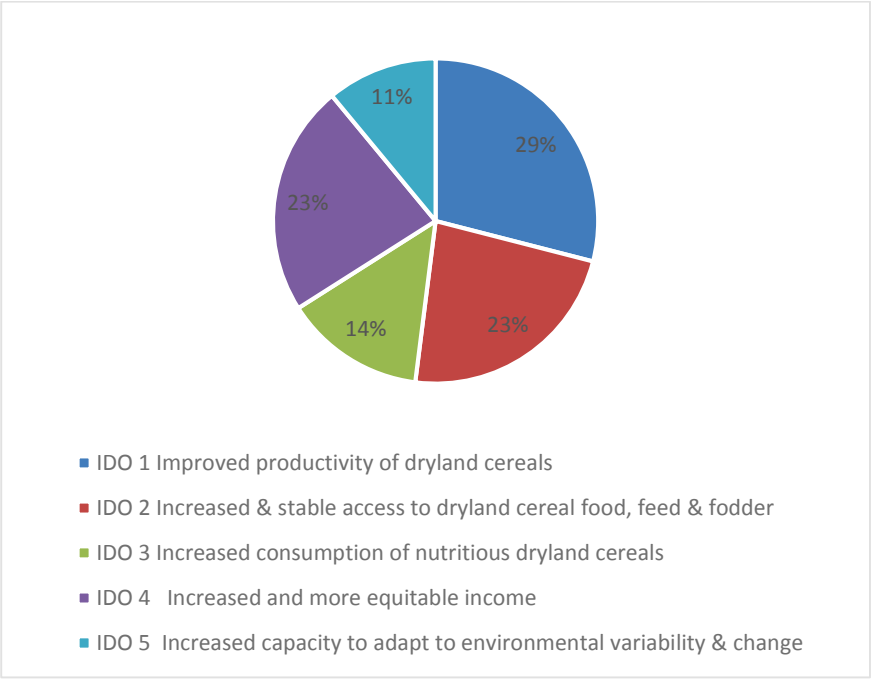

Figure 9 Proportion of the budget by IDO 2014-2016 (Dryland Cereals Extension proposal 2014)

Questions to explore further are the mechanisms of funding allocation to flagship projects and product lines, including the distribution of the budget among partner institutions and countries, and in relation to budget cuts, how these were distributed across the portfolio.

3. Scope of the evaluation

The evaluation covers the four crops of the Dryland Cereals, across different countries and regions. It covers the research activities of Dryland Cereals as defined in the research proposal dated August 2012 and the extension proposal dated 26th April 2014. It will assess the planned outputs and outcomes of the programme, across all funding sources (windows 1, 2 and bilateral).

The scope of the evaluation includes assessing results of research prior to the establishment of the DC CRP, which have emerged, or are now emerging and contribute to its current activities. This **summative dimension** will determine to what extent results at outcome and impact-level have been achieved from research continuing from the past.

The evaluation will also assess progress under the Dryland Cereals since its establishment in July 2012, during which time the Dryland Cereals has continued to evolve with a newly defined structure, targets and impact pathways. The **formative dimension** will evaluate the more recently developed thematic flagship approach and the extent to which it has enhanced the relevance and efficiency of Dryland Cereals, examining the likelihood of its effectiveness to contribute to the CGIAR and CRP vision, SLOs and outcomes as defined in the theory of change. Furthermore research will be evaluated for relevance, quality of science, efficiency, likely effectiveness and sustainability.

The evaluation will also examine the institutional context of the Dryland Cereals and its relation to ICRISAT, ICARDA and other Centres, National Agriculture Research Systems (NARS), private sector and civil society etc. This includes examining the effectiveness and efficiency of the institutional structure, culture and management systems of the CRP and ICRISAT and the extent to which they create incentives among scientists and partners for high quality research oriented towards tangible outcomes. Cross-cutting issues will be considered at programme, thematic and activity cluster level.

The evaluation questions and strategic issues for consideration by the CCEE team relate to the two dimensions of research/programmatic performance and organisational performance.

The evaluation will examine the extent to which the CRP addresses the challenges of linking research outputs to development outcomes and of scaling out promising results for greater impact and sustainability. It will also assess the nature and magnitude of impact from past research, with particular relevance to the current program.

The evaluation will give emphasis to three **cross-cutting topics** particularly as they pertain to program relevance and performance: gender, capacity-building and partnerships. Specific evaluation questions will address these cross-cutting topics. The evaluation will assess Dryland Cereals' **gender strategy**, particularly in terms of integrating gender in research design and targeting (theories of change and impact pathways), strategic research on gender and gender aspects across the research portfolio. Integration of **capacity building needs** assessment and funding into program design and research activities will be assessed, particularly regarding assumptions and risks in the impact pathways related to capacity; sustainability of research results and outcomes; equity and gender; and the comparative advantage of the Drylands Cereals CRP. Regarding **partnerships**, the evaluation will consider both of the following: i) the partnerships which have been established among the implementing centres (ICRISAT and ICARDA) of the CRP and linkages with other CRPs, and the extent to which research has been integrated and, ii) partnerships with both research and development partners; iii) other

boundary partners upon whom the development outcomes depend. It will assess the strategic relevance and management of partnerships for efficiency and effectiveness of generating results and achieving program objectives including relationships between the lead centre and other CGIAR participants, ARIs, national research institutes, government, civil society and farmer organisations. Partnerships, capacity strengthening and communication strategies will be examined regarding their efficiency for overcoming constraints to adoption, the sustainability of results and the likelihood of impact.

The evaluation will look at the **quality of science**, both in terms of what can be expected from a leading international research program and as a prerequisite for effectiveness. It will look at factors in the program design and implementation that determine the **relevance** of Dryland Cereals within the CGIAR strategic framework and in the context of research opportunities and beneficiary needs. It will examine the CRP's **efficiency** in terms of its management and delivery and its likely **effectiveness**, as characterized by the logic and analytical rigor of CRP's impact pathways, including the plausibility of linkages between outputs and outcomes, as well as the nature of the process to develop this theory of change.

The evaluation will also examine Dryland Cereals assumptions, especially those that relate to external factors crucial for the planned outcomes and impact. It will look at the **validity of the assumptions** underlying the program theory of change—and the research hypotheses related to those assumptions.

The evaluation will explore the extent to which the designated impact pathways continue to be relevant and are likely to be realised.

4. Evaluation criteria and key evaluation questions

The evaluation criteria and questions have been refined based on the review of programme documentation and discussions with Dryland Cereals management and researchers at ICRISAT HQ in India during the inception phase. These discussions were an excellent introduction to the Dryland Cereals and helped to further focus the evaluation questions.

The evaluation will assess progress towards achievements in the major research areas of the Dryland Cereals since its date of approval and assess the adequacy of the systems in place for good organisational performance.

A number of overarching questions will explore the extent of added value generated by the Dryland Cereals.

1. Does the Dryland Cereals provide an effective framework and procedures for prioritizing research? Is research becoming strategically better focussed on development outcomes as well as delivering the long-term high quality scientific research achievements which underpin these?
2. Is the Dryland Cereals generating synergy among centres and improving integration among disciplines and teams? Is knowledge being shared, technologies exchanged and capacity being built across countries and partners?

3. Is Dryland Cereals research becoming better aligned to the needs of smallholder farmers, consumers and other beneficiaries? Are gender and diversity issues being integrated into research planning and implementation and in the articulation of uptake pathways?
4. Is the Dryland Cereals developing a broader range of partnerships which contribute to research outputs and realisation of outcomes? Is this adding value and likely to enhance the global benefits from Dryland Cereals research for poor producers and consumers?
5. How has Dryland Cereals managed resources to realise the new vision of the CRP; how have the multiple sources, levels and allocation of funding influenced incentives for bringing about change?
6. Are the governance and management structures, practices and reporting lines of the CRP efficient and effective? Is there clarity and a common understanding of the roles and operational procedures of different components of CRP management within the lead and partner institutions?

In line with the evaluation objectives and intended uses, we will use the **six evaluation** criteria relevance, efficiency, effectiveness, quality of science, impact and sustainability. These are listed below together with associate evaluation questions. Questions on management and governance are included under the broad heading of 'efficiency'. Three cross cutting themes – gender, partnerships and capacity strengthening are separately indicated below for visibility, although these will be explored as part of the discussions on the other criteria.

RELEVANCE: What degree of relevance has the CRP design and implementation achieved?

1. **Coherence**:

- Is the Dryland Cereals strategically coherent and consistent with the main goals and SLOs presented in the CGIAR's Strategy and Results Framework?
- Is there a clear rationale for, and coherence among the Dryland Cereals flagship projects?
- What is the rationale for inclusion of the four crops in the Dryland Cereals (pearl millet, sorghum, barley and finger millet) and is there added value from this crop combination?
- To what extent has the Dryland Cereals used unrestricted programmatic funding (W1, W2) for leveraging complementary bilateral funding and alignment of bilateral projects within the program strategy?

2. **Comparative advantage:**

- Is there a comparative advantage of the Dryland Cereals with respect to CGIAR's mandate of delivering international public goods and its obligations towards outcomes, compared to other international initiatives and research efforts, including the private sector, national research institutions or development agencies?
- In the different areas of research (flagship projects, Product lines/clusters of activity) does Dryland Cereals CRP play an appropriate role as global leader, facilitator or user of research compared to partners and other research suppliers?

3. **Programme design**:

- Does the programme target an appropriate set of Intermediate Development Outcomes (IDOs) and do the activities cover and/or make reasonable assumptions about the results of other actors' work for achievement of program objectives?

- Do the impact pathways logically link the principal clusters of activities to the IDOs and are the IDOs linked to the SLOs through plausible theories of change that take into account trade-offs between multiple objectives?
- Have constraints to outcomes and impacts been considered in the programme design, for example through assessment of the assumptions and risks in reliance on policies, actions of national institutions, capacity and partnerships and the effects of climate change.
- Have the Dryland Cereals research activities been adequately prioritised in line with beneficiary needs, resource availability and partner needs and with respect to climate change?

EFFECTIVENESS: How far has the Dryland Cereals achieved/is likely to achieve the intended results and benefits?

1. To what extent have the planned **Outputs and Outcomes** been achieved or are likely to be achieved within the planned time frame?
2. Is the **theory of change** being realised in practice and how valid are the assumptions?
3. How effective are the connections between the 5 flagships along the product line impact pathway? Have the flagships enhanced integration across the delivery pipeline?
4. Are research outputs reaching their intended target groups?
5. Is knowledge being shared, technologies exchanged and capacity being built across countries and partners? What outcomes demonstrate positive synergy among various centres and partners and regions in the Dryland Cereals? To what extent is the Dryland Cereals creating communities of practice?
6. Is the Dryland Cereals more than the sum of its parts? Has there been value added to research brought about by the Dryland Cereals collaboration of the two Centers compared to the previous programmes?
7. To what extent has Dryland Cereals achieved the right balance between research efforts and activities more directly designed to contribute to outcomes? What would assist the Dryland Cereals to enhance the delivery of outcomes'? Are the range and type of partnerships secured sufficient for that purpose?
8. Have sufficient efforts been made to document outcomes and impact from past research and with what coverage over research areas? How have results been shared with different audiences at local, regional and international levels, including policy makers?

QUALITY OF SCIENCE: What level of scientific robustness (including associated economic, social and gender research) has the Dryland Cereals achieved in delivering its mandate?

1. Does the research design, problem setting and choice of approaches reflect high quality and up-to-date scientific thinking, state of the art knowledge and innovative implementation?
2. Are the internal processes, conditions and incentives sufficient to ensure high quality research and timely delivery of outputs across the programme?
3. Are the quality of research staff and research leadership adequate for assuring science quality and synthesis at flagship and programme level?
4. Are the research outputs, such as publications and genetic material, of high quality and quantity commensurate with the program investment?
5. Are negative as well as positive findings documented and disseminated?

EFFICIENCY: How efficiently is the CRP is being managed and delivered? With respect to:

Institutional arrangements and governance and management mechanisms

1. Are the institutional arrangements and governance and management mechanisms of the Dryland Cereals efficient? Do they achieve greater organisational performance and efficiency compared to previously?
2. Is there clarity and a common understanding of the roles, operational procedures and reporting lines of different components of the Dryland Cereals management structure within the lead and partner institutions?
3. To what extent have the reformed CGIAR organizational structures and processes increased (or decreased) efficiency and successful program implementation?

Resource use

4. Are the facilities and services used efficiently and are there areas where efficiency could be improved, for instance through outsourcing?
5. Is there transparent allocation of resources to researchers and partners for specific activities and outputs and are the resources adequate for their expected role?

Collaboration and coordination

6. Is the level of collaboration and coordination with other CRPs and partners appropriate and efficient for reaching maximum synergies and enhancing partner capacity? What are partners' contributions to research and management processes?
7. Are the respective roles of the CRP and national programmes clearly understood and appropriate?

Monitoring and evaluation

8. Is the M&E system adequate and efficient for recording, tracking and enhancing Dryland Cereals' processes, progress, and achievements?

Management of risk

9. Is the programme able to adapt flexibly in response to changes in circumstances?

Communication and cross learning

10. How efficient is interaction and communication between CRP-DC management and researchers, and cross regionally among researchers and partners?
11. Has the Dryland Cereals a clear identity and platform for sharing and promoting the programme outputs and achievements?

IMPACT & SUSTAINABILITY: What differences have the outputs and outcomes of past research made to productivity, food security, consumption and nutrition and livelihoods?

1. What evidence is there on the magnitude of impact in different geographical regions in terms of increased dryland cereal production and consumption; more resilient farming systems in the face of climate change; improved livelihoods and nutrition of vulnerable women and children and enhanced income?
2. How inclusive and equitable have research outcomes been in terms of benefits for different end users (men, women, youth, low income communities)?
3. Have adequate constraint analyses and lessons from *ex post* studies informed program design for enhancing the likelihood of impact?
4. What evidence is there on the sustainability of past benefits and the extent to which positive outcomes demonstrated at pilot or small-scale level are likely to be sustained and out-scalable?

5. Are the capacity building efforts and incentives among partners adequate for enhancing the long-term sustainability of program effects?
6. How effectively is the Dryland Cereals work being scaled up? Is it achieving the right balance between farmer level impact and policy level influence arising from its work?
7. What are the prospects for sustaining financing, for example, for long-term research programs and key partnerships?
8. How should the future sustainability of the combined Dryland Cereals and Legumes Agrifood Systems CRP be addressed?

CROSS CUTTING ISSUES

Capacity strengthening

1. How are capacity building needs assessed?
2. To what extent do capacity building efforts address partners' needs? Are capacity building efforts integrated with the research mandate and delivery of the programme
3. To what extent are capacity issues taken into account in the impact pathway analysis? Have capacity related assumptions and risks been identified?
4. Have there been efforts to build capacity in gender for scientist sand partners?
5. Are there demonstrable outputs and outcomes of capacity building? e.g. enhanced research capacity in partner organisations, capacity for innovation and learning, capacity to work along the value chain etc.
6. Overall capacity in Dryland Cereals to move along R4D process.

Gender and diversity

1. Have the respective roles and needs of men, women and youth been adequately identified through gender analysis and have these informed the setting of research objectives and priorities?
2. Have the intended users of research outputs and different categories of beneficiaries of research - men and women farmers, consumers, agro enterprises, researchers (national and international), policy makers etc. been clearly identified along the impact pathway?
3. Have research processes involved women's participation in technology testing, evaluation and selection.
4. Has research resulted in benefits for men and women, enhancing the livelihoods and nutrition of women and children and increasing income from market sales?
5. Have capacity-building needs for men and women been adequately identified and their differential needs taken into account in targeting and designing capacity building activities? Has information on capacity building opportunities incorporated specific encouragement for women applicants? With what outcomes?
6. Are scientists and partners throughout the Dryland Cereals aware of the gender strategy and have they incorporated gender awareness in their research design and practice (including collection of gender disaggregated data) and technology uptake?
7. What are the respective proportions of men and women scientists in the Dryland Cereals as researchers, managers and in governance roles?

Partnerships

1. Are the range of partners required to achieve the programme objectives present

2. To what extent are the Dryland Cereals partnerships relevant and target critical roles and linkages in the impact pathways.
3. Are partnerships managed so as to maximise efficiency for results?

The evaluation will assess the extent of achievement against the intended, expected outcomes and impacts, but will also seek to capture unintended outcomes or impacts (positive or negative). Overall the evaluation will provide insights as to how Dryland Cereals is poised to achieve its 10-year vision.

The evaluation questions above will be modified or elaborated where appropriate in the course of the evaluation.

5. Evaluation approach and methods:

The Dryland Cereals CRP builds on a long history and strong foundation of past related research. At the same time, as a result of CGIAR reform, the CRP is in an early phase of implementation. Thus it is rather early for finding long-term impact. Therefore, the forward-looking, formative component and the accountability-oriented, summative component are of equal importance.

The summative component will draw on existing studies, adoption and impact assessments, records and other data for conducting meta-analysis of available evaluative information, and estimating the achievements from past research. This approach will be complemented by other means, such as field observations during site visits and analysis of responses during structured interviews with program participants and stakeholders. The formative component will review progress made so far towards results; Gender mainstreaming, governance and partnership aspects; and other innovative modalities of work introduced with the reform of the CGIAR.

The evaluation process will be participatory in nature in order to capture the diverse range of perspectives and values of partners and stakeholders. The evaluation team will develop findings, draw conclusions, and make recommendations, during and after broad consultation with key stakeholders.

The evaluation team will ensure that the findings are informed by evidence. This implies that all perceptions, hypotheses and assertions obtained in interviews will be validated and cross-checked through triangulation and comparison of alternative sources, data, methods, and theories

5.1 Country selection for field visits

The evaluation will address all the crops covered by the CRP and aim for regional coverage. Country selection for field visits is based on ensuring sufficient coverage of the dryland cereal crops across different regions. The original seven product lines in the programme together with the flagship themes provide the matrix for selection of focus countries for the evaluation. Each of the product lines will be covered in the evaluation, with visits to (or interaction with scientists from) at least two countries for each. Countries where there are activities relating to more than one dryland cereal crop are prioritised for the visits. Other considerations for country selection include the location of flagship project leaders and leaders of research clusters/product lines and the locations of the major partners of the programme.

Table 3: Dryland Cereals Evaluation - sample of countries to visit

Region	South Asia	East and Southern Africa:		CWANA:	West & Central Africa:
Focal countries covered by Dryland cereals CRP	India	Ethiopia, (Kenya), Sudan, Uganda, Tanzania, Mozambique		Morocco, Kazakhstan, Iran, Turkey	Burkina Faso, Mali Nigeria, Niger, Senegal
Selected country/s to visit	**India**	**Kenya (Uganda/ Tanzania)**	**Ethiopia**	**Morocco**	**Senegal (Mali/ Niger)**
Crops/product line	Barley Pearl millet Post rainy season sorghum	Finger millet, Pearl millet Sorghum	Barley Finger millet Sorghum	Barley	Pearl millet, Sorghum
Programme management/ Flagship/ cluster leaders	CRP Director Dryland Cereals CRP lead center, ICRISAT. Flagship leaders 2, 3, 5 crop improvement, crop management, post-harvest. Pearl millet South Asia and East & Southern Africa coordinator. Sorghum South Asia coordinator HOPE project	ICRISAT Regional Director East & Southern Africa Flagship 1 leader. Priority setting & adoption Flagship 4 leader. Seed systems Finger millet East & Southern Africa cluster coordinator Sorghum East & Southern Africa cluster coordinator HOPE Project		ICARDA Barley cluster coordinator	Coordinators pearl millet West & Central Africa; sorghum WCA Country Representative Niger HOPE Project Manager

The East and Southern Africa Regional centre in Nairobi was chosen as a convening point for researchers from Kenya, Uganda and Tanzania. Security concerns prevent the evaluation team from travelling to Mali and Niger, but researchers from those countries are invited to convene in Senegal. The final country selection for field visits has been done in consultation with CRP management. The proposed evaluation sample countries are given in table 3. The first line shows the focal countries for each region; the second the selected countries for visits, and the third and fourth lines, the crops and managers/research leaders in those countries.

Three countries were chosen where barley is a focus crop - Morocco, India and Ethiopia. For pearl millet, India, Niger, Kenya (Tanzania) were selected. For sorghum, the countries were India (post rainy season sorghum), Ethiopia, Kenya (Tanzania) and Mali, and for finger millet, Ethiopia and Kenya (Uganda, Tanzania).

5.2 Evaluation matrix – data sources and methods

The **evaluation matrix** in annex 1 identifies the main data sources, methods and tools that will be used for answering the evaluation questions. The inception visit to the lead Centre ICRISAT headquarters in India revealed that other than work plans, budget and expenditure information, there is little consolidated monitoring information and no dedicated programme monitoring system. The main methods and data sources for the evaluation will therefore be:

1. **Documentation analysis –**
    a. Programme documents - the final programme proposal (August 2012), the extension proposal (2014) and communications from the Consortium office relating to these documents and the Dryland Cereals responses
    b. Programme annual reports, flagship and product line annual reports, annual work plans and budgets, spread sheets used by the Dryland Cereals programme management, and power point presentations by research staff.
    c. Project reports and reviews from bilateral funded projects (e.g. HOPE)
    d. Scientific publications
    e. Publicity and news items

2. **Interviews**
    a. In-depth interviews across different categories of Dryland Cereals stakeholders, researchers, partners and value chain actors in sampled countries and sites. Interviews will be conducted during country visits, or by Skype.
        - Dryland Cereals Director, lead centre Directors, regional directors, members of governance structures and research committee
        - Lead centres (ICRISAT & ICARDA) management and board
        - Flagship and product line leaders
        - Individual researchers and research teams in different regions
        - NARS (collaborators from national agricultural research institutions, universities, Ministries, extension departments, NGOs and civil society organisations etc.
        - Farmer Organisations representatives
        - Private sector companies e.g. seed companies.
        - Other linked CRPs (e.g. Dryland cereals, Grain legumes)
        - Other collaborating research institutions Advanced Research Institutes.

Interviews will follow a basic checklist with variations for different research areas/flagships. This will facilitate consolidation. For issues where opinions are expressed, such as the Dryland Cereals structure and management, the responses will be tabulated and coded.

3. **Online surveys**

Two on-line surveys (using survey monkey) have been designed. A questionnaire will be sent to all scientists working with the programme and another shorter survey questionnaire will be sent to programme partners (see annex 5). It will cover the main areas under the evaluation criteria, particularly exploring scientists and partners' perceptions and experience with the DC CRP. The survey will generate descriptive statistics to be presented in tables and open fields will be coded and summarised.

4. **Country and field visits**

In addition to individual interviews, the country visits to India, Morocco, Ethiopia, Kenya and Senegal will provide opportunities to meet lead researchers and research teams and to listen to and discuss presentations on their research. This will cover both researchers from ICRISAT and ICARDA and also national research partners. Country visits will also allow further collection of information on program activities and partner relations— including the quality of cooperation and leadership. Where possible,

meetings will be held with other partners active in the value chain, for example, seed producers, seed companies, farmer seed producers associations and manufacturers of food products, beer etc.

The timing of the evaluation is not ideal in terms of field observation and discussion of crops research, falling after the harvest period for barley in all countries and sorghum and pearl millet in India, and before or at planting time in East and West Africa. Nevertheless, efforts will be made where possible to view crops in the field, including experimental plots, and to meet a range of stakeholders.

5. **Financial and budget analysis**

The allocation of the budget, by partner, product line/crop cluster, country and flagship will be analysed to assess how the distribution and level of resources matches with the intended outputs and outcomes.

5.3 Data analysis

The data generated through the methods and tools outlined above will be analysed to answer the evaluation questions associated with the five main evaluation criteria and the three cross cutting areas.

Relevance:
Questions on coherence, comparative advantage and programme design will be addressed drawing on the analysis of documentation, budgets and information from interviews with managers, scientists and advisers and from the scientists' survey. Linkages between the activities, outputs and research and development outcomes will be analysed utilising (but not limited to) the frameworks provided in the impact pathway diagram and theory of change (figures 3 and 4 above). For example, the theory of change does not identify groups with particular needs *within* the stakeholder categories given, for example, women farmers, nutritionally vulnerable, pregnant women and children etc. The question of whether the program design is based on a clear assessment of needs and priorities will be answered by examining information leading to priority setting and targeting together with evidence of the extent to which this was demand-led.

Effectiveness:
The extent to which the programme is delivering on its planned outputs and outcomes will be analysed drawing on the annual reports and discussions with scientists to produce an overview of achievements against plans, by flagship and crop cluster. The outputs and outcomes defined in the gender strategy will also be examined. The analysis will gather evidence on how effectively outputs from any particular product line or flagship have been made available to the next users and resulted in behavioural change including adoption of technologies, use of and demand for products, increased market sales, viable seed production enterprises etc. Dryland Cereal's reporting against the program outputs and milestones will show what has been produced, but the interview material will give more insight into the extent to which the necessary connections are being met along the impact pathway. At the same time, this will allow reflection on the theory of change and the validity or otherwise of the assumptions. It will help to identify areas which are in need of strengthening or areas where the logic of delivery is not supported in practice and different approaches are required. The analysis will identify whether there have been any unplanned outcomes from the research – whether positive or negative. A further area, not well represented in the theory of change, concerns the extent to which there has been synergy and knowledge exchange among the Dryland Cereals partners.

Quality of science:
The quality of science analysis will answer the evaluation questions by consolidating the feedback from interviews with scientists and with tables compiled from the scientists' on-line survey. The resources allocated for the Dryland Cereals CCEE do not allow time for in-depth analysis of publications. However, in so far as resources allow there will be a qualitative review of a selection of publications in the various fields of research, considering scientific quality, hypotheses/research questions, methodological rigour, use of current techniques and innovativeness. Views on institutional incentives to enhance the quality of science and assessment of how effectively quality of science has been ensured (scored on 6 point scale) will be analysed from the scientists' survey complemented by material from interviews.

Efficiency
Analysis of management issues and organisational performance will draw interviews with managers, scientists and partners, the scientists' and partners' on-line survey and minutes of management committee meetings. This will be a qualitative analysis derived from detailed interview notes, identifying recurring themes. It will make use of the additional analytical categories used in the Review of CGIAR Research Programs Governance and Management (March 2014); legitimacy, accountability, fairness, transparency, independence. Information from different sources and stakeholders will be triangulated. Assessment of efficiency will involve financial analysis of the Dryland Cereals resource allocation to researchers and partners and crop cluster and flagship over time. Data collection and information management for monitoring will be considered and the overall efficiency of Dryland Cereals communications and public outreach.

Impact and sustainability
Evidence in this area will be scarcer, given the relatively short time frame of the project. However, where ex post studies have taken place the lessons will be synthesised. Interviews with scientists and partners will provide insights into the areas where they consider they have made the most contribution. Views of scientists and partners on sustainability and prospects for scaling out will be sought, particularly in light of the budget cuts.

Cross cutting
Capacity strengthening in the form of training and improved infrastructure appears as an important link in the theory of change. The assessment will consider how capacity strengthening needs have been assessed in the Dryland Cereals and how they have been addressed in practice. This includes technical training needs and other skills such as gender mainstreaming, research for development, understanding innovation systems and value chain development etc. Data on exposure to training will be collected through the scientists' and partners' surveys and face to face interviews will give feedback on its value.

Gender and diversity will be explored using the framework in the DRYLAND CEREALS gender strategy. The assessment will include review of reports and presentations from crop clusters and flagships, and interviews with scientists, partners, managers, and the Dryland Cereals gender specialists. There are a series of questions on gender in the scientists' survey, including ranking of satisfaction with gender as area of research, awareness of gender strategies, actual responses to gender in Dryland Cereals work, whether gender training has been received and whether the gender strategy is well

communicated. Gender case studies will be reviewed if they become available within the CCEE timescale.

Analysis of partnerships will be given considerable attention since the role of partnerships is not elaborated in the theory of change or impact pathway diagrams. Types of partnerships associated with the different flagships will be analysed and their roles explored. Resources allocated to partners will be analysed from the expenditure summaries in the annual reports and budgets for successful competitive grant proposals. Qualitative assessment of partnerships will be conducted through partners' interviews, the partners and scientists' on line surveys which explores satisfaction with collaboration, partnerships and coordination.

5.4 Research ethics

The evaluation will be conducted in line with University of Greenwich Research ethics policy and NRI's Code of Practice on Research with People (Category B). This requires the research team to obtain 'informed consent' for interviews and to make it clear how we will deal with confidentiality. The purpose of meetings and surveys will be explained and participation in interviews, discussions and response to the surveys is voluntary. The evaluation team will maintain confidentiality and views expressed will not be attributed to individuals or used in such a way that the individual source is identifiable. Notes on interviews and working drafts will be kept confidential to the team and shared through 'Drop box' accessible to the team members only.

5.5 Potential limitations and constraints of the evaluation

Some potential limitations of the evaluation have been identified which are clarified here in order establish realistic expectations of what can be achieved by the evaluation team in the timescale and with the resources available. The coverage of countries, regions and flagship areas is considered sufficient for a good understanding of the programme, provided that additional interviews and responses to surveys are forthcoming. The analysis of quality of science will, for reasons of limited time and resources, be relatively light touch, focusing on selected outputs and drawing on other bibliographic analyses. Assessment of achievement of outputs and outcomes will depend on annual reports, scientists own presentations and self-assessments against the work plan targets. There will may be some gaps in this information which we will seek to fill as far as possible.

6. Organisation and Timing of Evaluation

6.1 Team composition, roles and responsibilities

The evaluation team is led by Adrienne Martin, and advised by NRI Emeritus Professor George Rothschild. The team members are NRI staff Ravinder Kumar and Rory Hillocks, together with two highly experienced consultants, Jonathan Robinson and Paul Thangata. Profiles of the team are in annex 4.

The team held an initial meeting at NRI in Chatham UK on 5th and 6th May 2015. The objective was to develop a common understanding of the evaluation objectives and design, including the key questions to explore for each aspect of the evaluation and to share current understanding and experience of CRPs. The team benefited from a briefing from the Dryland Cereals Director, covering the history, structure and governance, funding and development of the CRP.

The meeting was an opportunity to discuss and refine the allocation of roles and responsibilities across the team and plan the country field visits. It was agreed that each team member would have primary responsibility for one or more strategic components of the Dryland Cereals(flagships or major issues) however, the evaluation will be conducted as a team, sharing information and contributing to each other's' areas and supporting the assessment in sampled countries from the different regions. Details of respective roles and responsibilities of team members are shown in table 4.

Table 4: Team Members Roles and Responsibilities

Team member	Main areas of responsibility
Adrienne Martin	Team leadership – overall responsibility for evaluation design, delivery and reporting. Flagship 4, Seed systems. Flagship 5 Post-Harvest. Cross-cutting gender synthesis. Support on governance issues
Jonathan Robinson	Flagship 2 Crop Improvement, Quality of science and support to Crop management and institutional assessment
Rory Hillocks	Flagship 3 Crop Management. Support to Crop improvement and Seed systems
Ravinder Kumar	Flagship 1 Priority setting, adoption and uptake, M&E systems, communications, data management. Support to partnerships and capacity building.
Paul Thangata	Governance, management and institutional issues. Partnerships. Finance and resource allocation. Capacity building. Support on priority setting and adoption
George Rothschild	Advice on CGIAR system issues and context, governance and management of CRPs, CRPs interrelationship etc.

The approximate allocation of time among tasks and team members is shown in table 5. This includes travel days. The initial plan for team members to undertake field visits agreed at the team inception meeting was modified due to visa delays and consequent shifting of dates for country visits. This resulted more time allocated to the field visits by the team leader together with two team members (Hillocks and Robinson) and less by two other team members (Kumar and Thangata).

Table 5: Evaluation Team's Time allocation

Tasks	Evaluation Team Responsibilities in work days						
	AM Team Leader	JR	RH	RK	PT	GR	%
Initial desk review	4	3.5	3.5	4.5	3.5	.5	16.4%
Inception team meeting, understanding of the terms of reference. Discussion of methods, tools and field visits	4	3	2.5	4.5	2.5	2	
Interviews at HQ, (incl. travel)	5	5	5	5	6	0	62.3%
Inception report	4	.5	.5	3	.5	.5	
Field visits 5 countries (including travel)	24	15	19	2	4	0	
Survey	5	1	.5	2	7.5	0	
Analysis of data	4	3	5	5	7.5	0	
Preliminary findings	2	.5	.5	.5	.5	.5	

Overall analysis Drafting of evaluation report	10	7.5	7.5	7.5	7.5	2	21.3%
Validation: presentation of findings (incl. travel)	2	0	0	.5	0	0	
Review feedback and finalisation of evaluation report	2	1	1	.5	.5	.5	
Total number of days (incl travel)	**66**	**40**	**45**	**35**	**40**	**6**	**100%**

The outputs of the evaluation team, drafts and final versions of the inception report, preliminary headline findings and the evaluation report will be reviewed by the evaluation's Oversight Group and the team will respond to their comments and suggestions. The nine member Oversight Group is chaired by the Chair of ICRISAT Governing Board with three members drawn from the steering/advisory committee, one member representing the IEA, two members from the research management committee and two members from the Dryland Cereals programme management. The list of members is given in annex 6.

6.2 Timeline

The evaluation is scheduled to take place from May to November, 2015 with the management response to the evaluation report due by the end of December). The proposed timeline for delivery is shown in table 5 below.

Table 6: Proposed timeline for CCEE -DRYLAND CEREALS

Phase	Period	Main outputs	Responsibility
Preparatory Phase	April 2015	Finalisation of Contract	CRP /ICRISAT
Inception Phase India visit	1st May to 18 June 2015	Inception Report [9] , containing evaluation design along with instruments to be used	Evaluation team leader
Inquiry phase – Country visits Completion of Interviews and on line surveys	18 June to 15 July 1-30 August	Set of field notes, completed questionnaires, interviews and observations	Evaluation team
Presentation of preliminary headline findings	1 August 2015	Presentation of preliminary findings Feedback from main stakeholders	Evaluation team CRP /Evaluation oversight group
Reporting phase			
Analysis and drafting of Report	1st August to 15 October 2015	Draft Evaluation Report	Evaluation team
Feedback on the draft	30 October 2015	Feedback	CRP team /Evaluation oversight group

[9] The submission of the Inception report did not follow this time line, due to the delayed visit to ICRISAT HQ because of visa problems and the subsequent intensity of country visits. It was submitted at the end of July 2015.

Phase	Period	Main outputs	Responsibility
			IEA and independent evaluators
Final Evaluation report	15 November 2015	Final evaluation report	Evaluation team
CRP Management and validation process	30 December 2015	Management and evaluation validation statement	CRP Management Quality Validation panel (via IEA)
Consortium response to evaluation and CRP management response	15 January 2016	Consortium Response to the evaluation and the CRP management response	Consortium Office

The inception visit to India took place in June (see annex 3 for the itinerary and list of people met). The schedule for country visits and team members involved is shown in table 6.

Table 7: Timetable for country visits

Location	Dates	Team members
India - ICRISAT Hyderabad Visit Jaipur Visits Delhi Field visit Karnal and Shimla	7– 11 June 11-13 June 13- 15 June 15 -18 June	Adrienne Martin, Jonathan Robinson, Rory Hillocks, Paul Thangata, Ravinder Kumar Adrienne Martin, Jonathan Robinson, Rory Hillocks, Paul Thangata Adrienne Martin, Jonathan Robinson, Rory Hillocks
Morocco	28 June – 2 July	Adrienne Martin and Rory Hillocks
Ethiopia	5 -8 July.	Adrienne Martin and Rory Hillocks
Kenya (linking with scientists from Uganda and Tanzania)	8-12 July	Adrienne Martin, Rory Hillocks, Jonathan Robinson
Senegal (Linking with Mali and Niger)	12-15 July	Adrienne Martin and Jonathan Robinson

6.3 Deliverables and dissemination of findings

The Evaluation Report—which is the principal output of this evaluation—will describe the findings, conclusions, and recommendations, based on the evidence collected according to the evaluation matrix. The recommendations will be clearly explained, based on evidence generated through the range of sources and tools indicated in the matrix. They will be prioritized and addressed to the different stakeholders responsible for their implementation. The recommendations will consider actual resources likely to be available to Dryland Cereals and state what recommendations are resource-neutral and what recommendations imply a greater/smaller budget

The main findings and recommendations will be summarized in an executive summary. A provisional outline of the report is given in annex 2.

Adequate consultations with CRP stakeholders will be ensured throughout the process, with debriefings on key findings held at various stages of the evaluation. In view of the short time frame

for preparation of the proposal for phase 2 of the CRPs, the CCEE team agreed to provide highlights of findings and preliminary recommendations by the end of July 2015.

The final report will be presented to key CGIAR stakeholders. Following this, the Dryland Cereals will co-ordinate with its Steering Committee and IEA for preparation of the Management Response and proposed follow-up action(s) and timeframe.

Presentations will be prepared by the evaluation Team Leader for disseminating the Report to targeted audiences. The exact forms and audiences will be agreed with the CRP Director towards the end of the evaluation along with any other events or channels to disseminate the evaluation results.

Annex 1 Evaluation matrix

Overarching questions	Sources of evidence	Methods & tools of analysis.
1. Does the Dryland Cereals provide an effective framework and procedures for prioritizing research? Is research becoming strategically better focussed on development outcomes as well as delivering the long-term high quality scientific research achievements which underpin these?	• Research prioritisation and justification and alignment of outputs with intended development outcomes - in Dryland Cereals proposal, extension proposal and reports. Quality of Science analysis	Document analysis. Quality of science analysis. Synthesis of analyses by criteria below
2. Is the Dryland Cereals generating synergy among centres and improving integration among disciplines and teams? Is knowledge being shared, technologies exchanged and capacity being built across countries and partners?	• Gender strategy and reports; information on beneficiary groups, needs assessment and targeting of research, planned uptake pathways from reports and interviews with Dryland Cereals managers, scientists and national partners.	Document analysis, analysis of interviews with gender specialists, Dryland Cereals managers, scientists and national partners.
3. Is Dryland Cereals research becoming better aligned to the needs of smallholder farmers, consumers and other beneficiaries? Are gender and diversity issues being integrated into research planning and implementation and in the articulation of uptake pathways?	• Views and experience of Centers, CRP managers, regional managers, researchers and partners. Scientist and partner surveys. Dryland Cereals annual reports.	Analysis of interviews with managers, scientists and partners in the DC CRP. Scientist & partner surveys analysis.
4. Is the Dryland Cereals developing a broader range of partnerships which contribute to research outputs and realisation of outcomes? Is this adding value and likely to enhance the global benefits from Dryland Cereals research for poor producers and consumers?	• Views and experience of CRP managers, scientists and partners. Scientist and partner surveys; annual reports, annual work plans and budget.	Analysis of interviews with managers, scientists and partners in the DC CRP. Scientist and partner surveys analysis.
5. How has Dryland Cereals managed resources to realise the new vision of the CRP; how have the multiple sources, levels and allocation of funding influenced incentives for bringing about change?	• Budget allocations, funding sources v planned outputs and outcomes. Views of management and scientists in the DC CRP	Budget and financial analysis. Analysis of interviews with managers, scientists and partners in the DC CRP.
6. Are the governance and management structures, practices and reporting lines of the CRP efficient and effective? Is there clarity and a common understanding of the roles and operational procedures of different components of CRP management within the lead and partner institutions?	• Views of Steering committee and research committee members. Views of management and scientists in the Dryland Cereals and in the participating Centers.	Analysis of interviews with members of the steering committee, research committee and management interviews.

Evaluation questions/ criteria	Sources of evidence	Methods and tools.
RELEVANCE: What degree of relevance has the Dryland Cereals design and implementation achieved?		
1. **Coherence**: • Is the Dryland Cereals strategically coherent and consistent with the main goals and SLOs presented in the CGIAR's Strategy and Results Framework? • Is there a clear rationale for, and coherence among the CRP flagship projects? • What is the rationale for inclusion of the four crops in the Dryland Cereals (pearl millet, sorghum, barley and finger millet) and is there added value from this crop combination? • To what extent has the Dryland Cereals used core type funding (W1, W2) for leveraging complementary bilateral funding and alignment of bilateral projects within the program strategy? 2. **Comparative advantage:** • Is there a comparative advantage of the Dryland Cereals with respect to CGIAR's mandate of delivering international public goods and its obligations towards outcomes, in relation to other international initiatives and research efforts, including the private sector, national research institutions or development agencies? • In the different areas of research (flagship projects, Product lines/clusters of activity) does Dryland Cereals play an appropriate role as global leader, facilitator or user of research compared to partners and other research suppliers? 3. **Programme design**: • Does the programme target an appropriate set of Intermediate Development Outcomes (IDOs) and do the activities (in program product lines/clusters of activity) cover and/or make reasonable assumptions about the results of other actors' work for achievement of program objectives? • Have constraints to outcomes and impacts been considered in the programme design, for example through assessment of the assumptions and risks in reliance on policies, actions of national institutions, capacity and partnerships. • Have the Dryland Cereals research activities been adequately prioritised in line with resource availability and partner needs and with respect to climate change? • Do the impact pathways logically link the principal clusters of activities to the IDOs and are the IDOs linked to the SLOs through plausible theories of change that take into account trade-offs between multiple objectives?	• CGIAR documentation on the CRPs: SRF 2010 and 2015. • Dryland Cereals proposal 2012 and Dryland Cereals extension proposal 2014 and comments and feedback on these documents. • Financial spreadsheets on programme funding types and sources. • Interviews with Dryland Cereals Programme Director, product line/cluster leaders and flagship leaders. • Views of advisors to Dryland Cereals and CGIAR on international comparative advantage • Contribution of Dryland Cereals outputs and outcomes as detailed in annual reports and product line/ cluster reports, publications list • Views of partners – national researchers, private sector, development partners on relationships and comparative advantage by region/product line/ activity cluster • Dryland Cereals proposal 2012 and Dryland Cereals extension proposal 2014 – logic and explanation of impact pathways, including the role of partnerships for achieving the 5 IDOs. • Proposals' articulation of mechanisms for targeting to the poor, rural women and children, nutritionally vulnerable, low income value chain actors and communities, smallholder women farmers. • Impact pathway diagram and theory of change description of how product line/flagships linked to IDOs and SLOs. Identification of constraints, assumptions and risks. • Dryland Cereals proposal and extension proposal, annual reports and POWB. Projects mapped to IDOs • Flagship 1: Priority setting - baseline studies reports, gap constraint analysis, gender and poverty disaggregated data. Data on crop, region, areas, people • Flagship 2: Varieties & hybrids – reports/presentations on determination of priority traits for dryland cereals breeding. • Flagship 3: Reports/presentations on crop management technologies- evidence of demand led/informed priority setting? • Flagship 4: Reports/presentations on seed system analysis and identification of strategies. • Flagship 5: Post-harvest: reports on priorities and research agenda.	Documentation review and analysis Analysis of CGIAR feedback on documents and Dryland Cereals responses Budget analysis Interviews with advisors. Interviews with researchers and flagship leaders. Interviews with partners Documentation review, impact pathway analysis and targeting. Analysis of theory of change Dryland Cereals activity/output portfolio analysis by crop region, funding, themes product lines. Review of data for research prioritisation Analysis of information in annual reports, flagship and product line reports Interviews, discussions on country visits Partner and scientist survey

Evaluation questions/ criteria	Sources of evidence	Methods and tools.
EFFECTIVENESS: How far has the DRYLAND CEREALS achieved/is likely to achieve the intended results and benefits?		
1. To what extent have the planned Outputs and Outcomes been achieved or are likely to be achieved within the planned time frame? 2. Is the theory of change being realised in practice and how valid are the assumptions? 3. How effective are the connections between the 5 flagships along the product line impact pathway? Have the flagships enhanced integration across the delivery pipeline? 4. Are research outputs reaching their intended target groups? 5. Is knowledge being shared, technologies exchanged and capacity being built across countries and partners? What outcomes demonstrate positive synergy among various centres and partners and regions in the Dryland Cereals? To what extent is the Dryland Cereals creating communities of practice? 6. Is more than the sum of its parts? Has there been value added to research brought about by the Dryland Cereals collaboration of the two Centers compared to the previous programmes? 7. To what extent has Dryland Cereals achieved the right balance between research efforts and activities more directly designed to contribute to outcomes? What would assist Dryland Cereals to enhance the delivery of outcomes'? Are the range and type of partnerships secured sufficient for that purpose? **8.** Have sufficient efforts been made to document outcomes and impact from past research and with what coverage over research areas? How have results been shared with a wide range of audiences at local, regional and international levels, including policy makers?	• Annual reports and product line/flagship reports. (Qs1-8) - Adoption studies, database information and users by target group (FL1) - Reports on use of parental material in national programmes, benefits/risks of hybrids; new varieties & traits; productivity and farmer options. (FL2) - Reports on adoption of management options for each product line/region e.g. for soil health & pests and diseases. (FL3) - Reports on seed systems development and benefits, actors, variety release systems & policies, inter-country seed exchange. (FL4) - Reports on use of quality grain for processing, market sale and stover, farmer organisations & market access and information. (FL5) • Views on the connections and assumptions along the impact pathway from flagship and product line leaders, researchers and partners (Qs 2 -3) • Assessment of researchers, national researchers and development partners including private sector and farmer seed producers. (Q4) • Views of scientists (international and national) and partners in different regions working on dryland cereals crops. Records of meetings, workshops, content and frequency of posts on the Dryland Cereals web site. (Q5) Extent of programme funding for projects with multiple partners/countries (Q5) • Interviews with advisors to Dryland Cereals and CGIAR, CRP and Center directors and research leaders on value added by collaboration. (Q6) • Distribution of funding (budgeted and actual) by flagship. Proportion of budgets allocated to national research and development partners. Profile of partner types. (Q7) Interviews with scientists and partners on successes and constraints to delivery of outcomes. • Interviews with Dryland Cereals Director, flagship 1 leader and communications officer. (Q8) Systems for storage and retrieval of reports, publications and data sets. Lists of publications (see also Quality of Science below), Impact studies, Communication tools /web site/ multimedia efforts used by the CRP and audience statistics	Analysis of achievements against planned outputs and outcomes by flagship and product line. Document review (adoption studies), impact and evaluation reports. Review of the theory of change. Field visits & observation Analysis of interviews with researchers, partners, private sector & farmers Review & discussion of scientists and partner presentations. Scientist and partners survey Interviews and group discussions with scientists and partners Scientist and partners survey Review of workshop reports Review of web site content. Analysis of partner composition Analysis of Interviews Scientist and partner survey Analysis of budget and actual expenditure by flagship and distribution to partners. Interviews with scientists and partners. Analysis of impact /evaluation studies Review of information management systems. Review of communication tools and analysis of audience statistics/downloads.

Evaluation questions/ criteria	Sources of evidence	Methods and tools.
QUALITY OF SCIENCE: What quality of science (including associated socio-economic, policy and gender research) has the DRYLAND CEREALS achieved in delivering its mandate:		
1. Does the research design, problem setting and choice of approaches reflect high quality and up-to-date scientific thinking, state of the art knowledge and innovative implementation? 2. Are the internal processes, conditions and incentives sufficient to ensure high quality research and timely delivery of outputs across the programme? 3. Is the quality of research staff and research leadership adequate for assuring science quality and synthesis at flagship and programme level? 4. Are the research outputs, such as publications and genetic material, of high quality and quantity commensurate with the program investment? 5. Are negative as well as positive findings documented and disseminated?	• Reviews of selected research proposals/studies' methodology (including social science, gender and policy research), for scientific quality, hypotheses/research questions, methodological rigour, current techniques and innovativeness. • Internal peer review processes in place at CRP and Center level. External quality assurance processes. Incentives for quality research and timely delivery • Facilities and resources available - labs, greenhouses, equipment, genetic materials statistics, biometrics, data management • Researcher quality - publications in discipline and in product line/ flagship areas managed. • Team quality and mentorship aspects (building & supporting teams, managing multi-disciplinarity, tapping high quality from partner organizations) • Extent of collaboration and joint authorship in research and publication. • Citations and impact factor of CRP related publications by discipline, product line and flagship • Qualitative assessment of research outputs, including non-publication outputs, by discipline, product line and flagship projects. • Annual reports from principal researchers (product lines and flagships) • Reporting of positive and negative results and learning points	Team member assessment of research proposals Document review of internal reviews and CRP/Center commissioned external reviews. Interviews with research leaders Interviews with partners Scientist survey Partners survey Qualitative analysis of sample of publications. Interviews with researchers and research teams Document review – selected publications on research outputs and annual reports.

Evaluation questions/ criteria	Sources of evidence	Methods and tools.
EFFICIENCY: How efficiently is the CRP is being managed and delivered?		
1. Are the institutional arrangements and governance and management mechanisms of the Dryland Cereals efficient? Do they achieve greater organisational performance and efficiency compared to previously? 2. Is there clarity and a common understanding of the roles, operational procedures and reporting lines of different components of CRP management structure within the lead and partner institutions? 3. To what extent have the reformed CGIAR organizational structures and processes increased (or decreased) efficiency and successful program implementation? 4. Are the facilities and services used efficiently and are there areas where efficiency could be improved, for instance through outsourcing? 5. Is there transparent allocation of resources to researchers and partners for specific activities and outputs and are the resources adequate for their expected role? 6. Is the level of collaboration and coordination with other CRPs and partners appropriate and efficient for reaching maximum synergies and enhancing partner capacity? What are partners' contribution to research and management processes? 7. Are the respective roles of the CRP and national programmes clearly understood and appropriate? 8. Is the M&E system adequate and efficient for recording, tracking and enhancing Dryland Cereals' processes, progress, and achievements? 9. Management of risk – is the programme able to flexibly adapt in response to changes in circumstances? 10. How efficient is interaction and communication between Dryland Cereals management and researchers, and cross regionally among researchers and partners? 11. Has the Dryland Cereals a clear identity and platform for sharing and promoting the programme outputs and achievements?	• Dryland Cereals Proposal, extension proposal and correspondence • Perceptions of Dryland Cereals Director, Centers' Directors, lead researchers/product line and flagship coordinators. • Views of Independent Advisory Committee • Terms of reference of Dryland Cereals governance and management committees and management roles • Minutes of steering committee/advisory committee and research committee • Findings of the Review of CGIAR research programme Governance and Management 2014 and consortium responses. • Interviews with Dryland Cereals Director, Centers' Directors, Regional Directors, lead scientists and partners • Interviews with Dryland Cereals Director, lead scientists and partners • Annual reports from lead scientists and partners • CRP Annual work plan and budget allocation per work area and per researcher and partner. Records of transfer of funds to partners and actual expenditure. • Annual reports, annual work plan and partner roles. Competitive grants and alignment with strategic areas. • Interviews with partners in different countries • Perceptions of researchers in lead and partner institutions and in national programmes • Dryland Cereals management monitoring information. ICRISAT management information systems • Annual reports. Interview with Dryland Cereals Director. • Scientists and partners perception of communication efficiency. • Extent of visibility of Dryland Cereals and partner contributions through web site, publicity materials and media products	Document review Interviews Scientist survey Review of minutes of management and committee meetings – content analysis and decision making Interviews, Scientist survey, Partners survey Interviews, Scientist survey, Partners survey Interviews Review of reports Analysis of budget allocations and expenditure Interviews with partners and review of extent of activities and responsibilities Interviews with scientists and national programme collaborators Review of management monitoring information tools Review of annual reports and budgets for changes and adaptations Scientists and partner surveys Interviews. Review of DC web site content and materials. Web site statistics

Evaluation questions/ criteria	Sources of evidence	Methods and tools.
IMPACT & SUSTAINABILITY: What differences have the outputs and outcomes (of past research continued into the CRP) made to productivity, food security, consumption and nutrition and livelihoods? How likely are they to be sustained and scaled –up in the future?		
1. What evidence is there on the magnitude of impact in different geographical regions in terms of increased dryland cereal production and consumption; more resilient farming systems in the face of climate change; improved livelihoods and nutrition of vulnerable women and children and enhanced income? 2. How inclusive and equitable have research outcomes been in terms of benefits for different end users (men, women, youth, low income communities)? 3. Have adequate constraint analyses and lessons from *ex post* studies informed program design for enhancing the likelihood of impact? 4. What evidence is there on the sustainability of past benefits and the extent to which positive outcomes demonstrated at pilot or small-scale level are likely to be sustained and out-scalable? 5. Are the capacity building efforts and incentives among partners adequate for enhancing the long-term sustainability of program effects? 6. How effectively is the Drylands Cereals work being scaled up? Is it achieving the right balance between farmer level impact and policy level influence arising from its work? 7. What are the prospects for sustaining financing, for example, for long-term research programs and key partnerships? 8. How should the future sustainability of the combined Dryland Cereals and Legumes Agrifood Systems CRP be addressed?	• Ex post studies of Dryland Cereals research projects documenting outcomes and impact and coverage from past research • Discussions and presentations from scientists. • Annual reports and use of ex post studies in informing program and research project design. Interviews with scientists and partners • Ex post studies of Dryland Cereals research projects. • Partners views on adequacy of capacity and incentives for sustainability • Annual reports – strategies for scaling up and extent of communication of research results to different audiences and regions and policy makers • Interviews with Dryland Cereals managers, research leaders, partner organisations and Directors of national agricultural research institutes.	Analysis of ex post impact studies Analysis of presentations Annual reports Partners survey Interviews.

CROSS CUTTING ISSUES		
Capacity strengthening 1. How are capacity building needs assessed? 2. To what extent do capacity building efforts address partners' needs. Are capacity building efforts integrated with the research mandate and delivery of the programme 3. To what extent are capacity issues taken into account in the impact pathway analysis? Have capacity related assumptions and risks been identified? 4. Have there been efforts to build capacity in gender for scientist sand partners? 5. Are there demonstrable outputs and outcomes of capacity building? e.g. enhanced research capacity in partner organisations, capacity for innovation and learning, capacity to work along the value chain. etc. 6. Overall capacity in Dryland Cereals to move along R4D process.	• Programme proposal and extension proposal • Views of scientists and partners • Capacity strengthening, training and workshop reports Scholarship programme details, applicants and acceptances • Theory of change and impact pathways • Gender training reports; Interviews with gender specialists • Evaluation of capacity strengthening • Partners views • Annual reports	Document review Scientist survey Partners surveys Field visit discussions. Impact pathway analysis Document reviews, analysis of interviews. Partners survey analysis.

CROSS CUTTING ISSUES		
Gender and diversity 1. Have the respective roles and needs of men, women and youth been adequately identified through gender analysis and have these informed the setting of research objectives and priorities? 2. Have the intended users of research outputs and different categories of beneficiaries of research - men and women farmers, consumers, agro enterprises, researchers (national and international), policy makers etc. been clearly identified along the impact pathway? 3. Have research processes involved women's participation in technology testing, evaluation and selection. 4. Has research resulted in benefits for men and women, enhancing the livelihoods and nutrition of women and children and increasing income from market sales? 5. Have capacity-building needs for men and women been adequately identified and their differential needs taken into account in targeting and designing capacity building activities? Has information on capacity building opportunities incorporated specific encouragement for women applicants? With what outcomes? 6. Are scientists and partners throughout the Dryland Cereals aware of the gender strategy and have they incorporated gender awareness in their research design and practice (including collection of gender disaggregated data) and technology uptake? 7. What are the respective proportions of men and women scientists in the Dryland Cereals as researchers, managers and in governance roles?	• Programme proposal and extension proposal • Interviews with gender specialists • Report of the Gender working group meeting April 2015 • Interviews with Scientists • Scientists' presentations on their research. • Reports on needs assessment, priority setting and visibility in impact pathway analysis. • Annual reports of product lines and flagships • Gender case studies • Impact evaluation reports. • Training and capacity building reports. Information on training opportunities, training events, scholarship schemes • Scientists and partners responses to on line survey questions on gender • Gender strategy and performance. Gender as a proportion of the budget • Staff lists and roles, management and governance committees.	Analysis of gender related content of documents and presentations. Thematic analysis of interviews. Analysis of gender and participation Analysis of outcomes impacts by gender. Review of training reports and information materials Analysis of on line surveys Budget analysis, performance against gender targets Analysis of composition of staff and committees
Partnerships: 1. Are the range of partners required to achieve the programme objectives present 2. To what extent are the Dryland Cereals partnerships relevant and target critical roles and linkages in the impact pathways. 3. Are partnerships managed so as to maximise efficiency for results?	• Annual reports – range of partners, researchers, development partners, private sector, input suppliers, farmer associations, value chain actors, farmer researchers etc. • Quality of partnerships - roles and decision making and extent of shared vision and contribution, management roles and segment of value chain. • Transaction costs and results	Analysis of partnership composition and fund allocation Competitive grants allocation Interviews with partners Scientists survey Partner surveys Discussions on field visits.

Annex 2: Evaluation Report Provisional Outline

Executive Summary

1. **Introduction**
   Background
   Structure of the report.
   Purpose and audience and context
   Evaluation questions, methodology and framework,
   Timeline, team composition and roles
   Limitations of the evaluation
2. **Dryland Cereals Background:**
   Brief overview, objectives, structure, funding and portfolio
3. **Relevance**
   Coherence with the CGIAR goals and strategy and results framework
   Coherence of Dryland Cereals crops, regions and flagships
   Comparative advantage
   Programme design: Research priority setting and targeting
   Impact pathways and link to IDOs, assumptions and risks
4. **Quality of Science**
   Quality of research outputs
   Quality of research staff and research leadership.
   Management of research output and quality.
5. **Effectiveness**
   Delivery of outputs and outcomes by flagship:
   Knowledge exchange – internal and external
   Value added
6. **Efficiency**
   CRP management roles, structures and governance
   Management of resources
   Finance and resource allocation.
   Collaboration and coordination
   M&E systems
   Communications
7. **Cross cutting issues**
   Gender
   Partnerships
   Capacity strengthening
8. **Impact and sustainability**
9. **Conclusions and recommendations**

Annex 3: List of People consulted during the inception phase:

ICRISAT Patencheru (7–11 June 2015)	
NAME	**DESIGNATION**
Dr Shoba Sivasankar	Director of Dryland Cereals CRP.
Joanna Kane-Potaka	Director Strategic Marketing and Communication. ICRISAT.
Dr Stefania Grando	Research Program Director – Dryland Cereals. ICRISAT
Dr Peter S Carberry	Deputy Director General – Research. ICRISAT
Dr G G Koppa	Senior Program Manager, CRPs Dryland Cereals and Grain Legumes, ICRISAT
Nagalakshmi Dronavalli	CRP office – logistics
Sharud Kumar	Human Resources, ICRISAT.
Dr S K Gupta	Senior Scientist (Pearl Millet Breeding). Dryland Cereals CRP Coordinator cluster activity 6, Pearl Millet S Asia and E Africa. ICRISAT.
Dr A. Ashok Kumar	Senior Scientist (Sorghum breeding). Dryland Cereals. ICRISAT. CRP coordinator cluster 5 Sorghum
Dr Kiran K Sharma	CEO Agribusiness and Innovation Platform. (Leader CRP Dryland Cereals flagship 5) ICRISAT
Dr Saikat Datta Mazumdar	Chief operating officer, NutriPlus Knowledge (NPK) Program, Agribusiness and Innovation Platform (AIP). ICRISAT
Food processing entrepreneurs	Two women entrepreneurs producing snack products and cereals from pearl millet.
Rajesh Agrawal	Assistant Director General – Finance. ICRISAT
Girish Chander	Agronomist ICRISAT Development Center. Flagship 3 Crop Management, Coordinator
Prof Anthony M Whitbread	Research Program Director – Resilient Dryland Systems. ICRISAT.
Dr Rajeev K Varshney	Research Program Director, Grain Legumes and Director, Center of Excellence in Genomics. ICRISAT.
Dr Noel Ellis	Director, CGIAR Research Program on Grain Legumes
Dr R S Mahala	Research Director, Multi Crop Research Centre, Pioneer Hi-Bred Private Limited, Telangana. Member of the Dryland Cereals Steering Committee
Moinuddin H Haroon	Director, R&D, Hytech Seed India Private Limited. Hyderabad
Dr Suhas P Wani	Director, ICRISAT Development Centre (IDC). ICRISAT
Supriya Bansal	Financial Controller. ICRISAT
Satish Nagaraji	Communications manager Dryland Cereals CRP.
Dr HV Kalpande	Officer in charge & Sorghum Breeder. PI CRP Project. All India Coordinated Sorghum Improvement Project, Sorghum Research Station VNMKV Parbhani. Maharashtra.
Dr R.L Aundhekar	Co-PI for HOPE and CRP Project, VNMKV Parbhani, Maharashtra.
Dr S R Gadakh	Senior Sorghum Breeder. All India Coordinated Sorghum Improvement Project, MPKV Rahuri 413722 Dist. Ahmednagar, Maharashtra.

Dr. U D Charan	Co-PI CRP & HOPE project, Senior Cereal Food Technologist, MKVR, Rahuri, Ahmednagar, Maharashtra.
Dr Padmaja Ravula	Scientist (Gender Research) Markets, Institutions, Policies. ICRISAT
Dr Abhishek Rathore	Senior Scientist, Biometrics Unit,Center of Excellence in Genomics, ICRISAT.
Dr Vincent Vadez	Assistant Research Program Director & Principal Scientist, Dryland Cereals. Plant Physiology
Jaipur, Rajasthan (11- 13 June 2015)	
Dr L.D. Sharma & team	Professor & in charge, Pearl Millet Project & Professor & Plant breeder Millets (SKNAU Jobner) Rajasthan Agricultural Research Institute (RARI) Durgapura-Jaipur
New Delhi (13 – 15 June 2015)	
Dr Tara Satyavathi	Principal Scientist (Pearl Millet Genetics), Division of Genetics, Indian Agricultural Research Institute (IARI), Pusa Campus, New Delhi. 110 -012
Dr S K Jha	Principal Scientist Food Science and Post Harvest Technology, IARI Pusa.
Dr S P Singh	Senior Scientist Div of Genetics IARI Pusa
Dr R S Bana	Scientist, Division of Agronomy. IARI Pusa
Dr Arun Kumar MB	Senior Scientist, Division of Seed Science and technology. IARI Pusa
Dr N Srinvasa	Scientist, Division of Plant Pathology. IARI Pusa
Dr A.K. Singh	Head, Division of Genetics. IARI Pusa
Dr S. Ayyappan	Secretary (Directorate of Agricultural Research and Education) and Director General ICAR, Krishi Bhaven, New Delhi, 110 001
Dr Virendra S Deora	Senior Scientist, Pearl Millet. Metahelix Life Sciences Limited, Bangalore.
Karnal 15/16 June 2015 ICAR – Indian Institute of Wheat and Barley Research, Karnal (IIWBR), PO Box 158, Kunjpura Road, Karnal 132 001 India	
Dr Ramesh PS Verma	Barley Breeder, ICARDA, Rabat, Morocco. (Coordinator, Barley, Dryland Cereals CRP).
DInesh Kumar	Director. Barley quality - barley malt & food biochemical & molecular aspects
Anil Khippel	Barley Agronomist, IIWBR, Karnal
Dr Anuj Kumar	Senior Scientist (Agricultural Extension). Baseline database creation
Sendhil R	Economist IIWBR. (Baseline data collection)
Vishnu Kumar	Barley breeder. Malt barley
Jagendra Singh	Barley breeder Feed and food barley
Sudheer Kumar	Plant pathologist, identification of disease resistance sources
Shimla 16 June 2015 Regional Station, ICAR – Indian Institute of Wheat and Barley Research, Flowerdale, Shimla	
Dr Subhash Bjardwaj	Principal Scientist & in charge
Dr Om Pakash Gangwar	Scientist, Plant Pathology
Pramod Prasad	Scientist Plant Pathology
Hanif Khan	Scientist (GPB)
Dr Dharam Pal	Principal Scientist, (Plant Breeding) from ICAR – Indian Agricultural research Institute, Regional Station, Tutikandi Facility, Shimla, 171004 HP.

Annex 4 Evaluation team profiles

Adrienne Martin is the Director of Programme Development at the Natural Resources Institute, University of Greenwich and a Social and Institutional Development and Evaluation Specialist. She has over 35 years experience in international development and research relating to agriculture, natural resources, value chain development and gender and diversity. She has conducted many reviews and evaluations of agricultural research projects and programmes, as team leader and team member. She has designed and managed impact evaluations using quantitative, qualitative and mixed method designs. From 2003 to 2011 she conducted five reviews of EC funded projects at CGIAR centres. Recent work has included the management and coordination of the monitoring and evaluation and gender and diversity components of the Cassava; Adding Value for Africa (C:AVA) project which is working to improve rural incomes by linking cassava producers and processors into commercial value chains. She was team leader for the Monitoring and Evaluation of the continental scale (34 countries in Africa) Promotion of Science and Technology for Agricultural Development in Africa Project (PSTAD), for FARA/AfDB (2011-2014). She was a team member for the meta impact analysis of the Irrigated Rice Research Consortium IRRC, responsible for examining social, cultural and institutional impacts, process analysis, impact pathways and the consortium's influence on national research and extension policy (IRRI/SDC) (2013). Adrienne was a member of the review team for the CCER on Social, Economic and Policy Research across ICARDA (2014).

Jonathan Robinson is an independent consultant and also the Adjunct Professor at University of Helsinki, Department of Plant Biology. Jonathan has carried out many reviews and evaluations at CGIAR centres, especially in the area of biotechnology, plant genetic resources and gene bank health, for IPGRI/Bioversity International and FAO. He carried out a scoping study on evaluating the impact of genebanks and genetic conservation through case studies of various mandate crops (for CGIAR Science Council Secretariat). He was team leader for impact assessment case studies at CIAT, CIP and CIMMYT for the CGIAR Science Council Standing Panel on Impact Assessment, and for the Independent external evaluation of the Generation Challenge Programme. His early career was in agricultural research for development with long term overseas experience in South Sudan and Sudan on agricultural development projects. He spent 3 years as an associate scientist in the wheat programme at CIMMYT, Mexico, researching on small grain cereal resistance to Russian wheat aphid. He worked for 6 years as a senior researcher in the Department of Plant Breeding Research, Agricultural Research Centre of Finland, mainly working on barley. He is a prolific writer, editor and translator on topics associated with genetic resources conservation, policy and use, and on capacity development for plant breeding and biotechnology programmes.

Ravinder Kumar: is an experienced evaluator, researcher, implementer and learning facilitator in Agriculture, Value Chains, Natural Resource Management, Climate Adaptation and Local Economic Development sectors. He has been involved in more than 40 programme/impact evaluations, design of monitoring and evaluation systems and management information systems. He has experience in the experimental/quasi-experimental as well as theory based empowerment evaluation methodologies of impact assessment. He has conducted large scale, complex /multi-country statistical analysis and qualitative assessments, e.g. evaluation of the Global Research Project of the Global Development Network, a research based policy outreach initiative funded by the Bill & Melinda Gates Foundation; Impact evaluation of a large scale, multi-component and empowerment based programme (DFID funded Poorest Areas Civil Society Program in India); and longitudinal evaluations of private sector led development initiatives. He has conducted evaluations of large national programmes e.g. Sustainable Community Based Approaches for Livelihoods Enhancement (SCALE) by Aga Khan Foundation; evaluations of innovations and evaluation of international agriculture research e.g. evaluation of the Promotion of Science and Technology for Agricultural Development in Africa (PSTAD); Evaluation /research studies of initiatives for improving better management practices in cotton in India.

Rory Hillocks: 36 years' experience in agricultural research for development. He initially worked in Tanzania and Zimbabwe as member of a Technical Cooperation team, supporting local agricultural scientists in the National Agricultural Research Systems. Since 1989, he has been managing agricultural research projects involving a wide range of crops and smallholder farming systems from a base in the UK, making short-term visits to Kenya, Uganda, Malawi, Mozambique, Tanzania, Zambia and Botswana. Collaborative research projects have involved a range of partners including African NARS and the CGIAR. In 2011 he set-up the European Centre for IPM at NRI, as a platform to extend IPM know-how to European agriculture, in support of EU policies to decrease the use of conventional pesticides. Dr Hillocks has undertaken numerous consultancies on aspects of crop

management and crop protection and agricultural research for development. He has been a regular member of the consultancy team that each year evaluates some of the CGIAR projects funded by the EC. These include a review of EU funding for coffee research in Uganda; a review of EU support to the Generation Challenge Programme (2008), the review of EU support to ICARDA (2009) and the review of EU support to the CIAT cassava programme (2010).

Paul Thangata has extensive experience in project management and implementation, evaluations, policy analysis, institutional development, designing strategic and operational plans for agricultural institutions. From 2008 to 2012, Paul was a Research Fellow with IFPRI based in Addis Ababa, Ethiopia where he conducted policy and capacity development research on organizational efficiency and effectiveness of agricultural R&D institutions. Before this he was the Agricultural Economist (based in Botswana) for the SADC Secretariat's SADC MAPP program and the creation of the Centre for Agricultural Research and Development for Southern Africa (CARDESA, now CCARDESA). Paul previously worked at the World Agroforestry Centre (ICRAF), based in Zimbabwe, where he coordinated the economics of Gender and HIV/AIDS and scaling up strategies for SADC regional projects. While with ICRISAT in Malawi (1992---1995), Paul was instrumental in the scaling up of new groundnut varieties and the promotion of income generating activities to reduce malnutrition, especially in female--headed households and other vulnerable groups. From 1988---1992, Paul worked with Malawi's Department of Agricultural Research, where he conducted research in genetic and agronomic evaluation of rice, sorghum and millet. Paul is a Malawi national and holds a Ph.D from the University of Florida, Gainesville, USA, and an M.S. degree in Rural Development from Edinburgh University, Scotland.

George Rothschild: has many years of experience in CGIAR research oversight gained as a former Director General of the International Rice Research Institute (IRRI) and former Board chair of the CGIAR Challenge Programme for Water and Food (CPWF). He is currently a board member of the International Water Management Institute (IWMI). In addition, he has experience of the CGIAR from 1989 to the present through roles that include:(i) Former Director of the Australian Centre for International Research (ACIAR) and leader of the Australian donor delegation to the CGIAR; (ii) A lead consultant for the CG reform process; (iii) As current Board member of IWMI, he is involved with the IEA review of CRP5; (iv) Reviewed all 15 CRPs and Gene bank programme for EIARD, the collective European donor group; (v) Led team to conduct review for EC/IFAD of EC-funded ICRISAT project on sorghum multiple use in East Africa (part of CRP Drylands Cereals programme). He was formerly principal adviser on natural resources in development to the Australian Foreign Minister, the Overseas Development Minister and the Minister for Primary Industries and Energy and is currently Chair of support committee to the UK All Party Parliamentary Group on Food & Agriculture in Development.

Annex 5– Scientist and Partners Surveys

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COMMISSIONED EXTERNAL EVALUATION OF THE DRYLAND CEREALS CRP

CGIAR Research Program (CRP) Dryland Cereals: CRP Commissioned External

Researchers and Scientists Survey

Dear Scientist/Researcher:

The survey solicits your feedback and perspectives on the achievements and lessons from designing and implementing the Dryland Cereals CRP (DC CRP). Given your association with and contributions to the CRP, your views and perspectives will be critical in undertaking a successful evaluation. The DC CRP has commissioned a team led by Natural Resources Institute (NRI), a specialist institute of the University of Greenwich to undertake the CCEE. To know more about NRI, please visit http://www.nri.org/

The purpose of this survey is to accurately represent your experiences and perceptions relating to various aspects of working with the DC CRP, including:

1. **Research relevance and priorities**
2. **Research effectiveness and management**
3. **Research outcomes**
4. **CRP structure, governance and management**
5. **Partnerships, gender and capacity building**
6. **Value added**

The survey will take less than 20 minutes of your time and the information provided by you will remain confidential. The findings will be presented in aggregate. We will not attribute views to specific individuals or organisations.

Please contact us with any questions or comments,

Thank you in advance for your thoughtful consideration, time and effort in contributing to the assessment.

Adrienne Martin (A.M.Martin@greenwich.ac.uk), Team Leader
Jonathan Robinson
Rory Hillocks
Paul Thangata
Ravinder Kumar

Scientist_SurveyMonkey_DCCRP.pdf

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CGIAR RESEARCH PROGRAM (CRP) COMMISSIONED EXTERNAL EVALUATION OF THE DRYLAND CEREALS PROGRAM

DRYLAND CEREALS PARTNER SURVEY

CRP COMMISSIONED EXTERNAL EVALUATION OF THE DRYLAND CEREALS PROGRAM

Dear Drylands Cereals CRP Partner:

The survey solicits your feedback and perspectives on the achievements and lessons from designing and implementing the Dryland Cereals CRP. Given your association with and contributions to the CRP, your views and perspectives will be critical in undertaking a successful evaluation. The DC CRP has commissioned a team led by Natural Resources Institute (NRI), a specialist institute of the University of Greenwich to undertake the CCEE. To know more about NRI, please visit http://www.nri.org/.

The purpose of this survey is to accurately represent your experiences and perceptions relating to various aspects of working with the DC CRP.

The survey will take less than 10 minutes of your time and the information provided by you will remain confidential. The findings will be presented in aggregate. We will not attribute views to specific individuals or organisations.

Please contact us with any questions or comments.

Thank you in advance for your thoughtful consideration, time and effort in contributing to the assessment.

Adrienne Martin (A.M.Martin@greenwich.ac.uk), Team Leader
Jonathan Robinson
Rory Hillocks
Paul Thangata
Ravinder Kumar

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CGIAR RESEARCH PROGRAM (CRP) COMMISSIONED EXTERNAL EVALUATION OF THE DRYLAND CEREALS PROGRAM

Partner_SurveyMonkey_DCCRP.pdf

Annex 6– Proposed Oversight Committee for CCEE

Sl No	Names with Designation	Particulars
1	Chandra A. Madramootoo Dean, Agricultural and Environmental Sciences McGill University, Montreal, Canada Email: chandra.madramootoo@mcgill.ca	Chairman (Chair, ICRISAT Governing Board)
2	Bernard Hubert, President, Agropolis (IRD/CIRAD) Email: bernard.hubert@avignon.inra.fr	Member (Member, DC SC)
3	Greg Edmeades, Independent Consultant from New Zealand Email: greg_edmeades@msn.com	Member (Member, DC IAC)
4	Urs Zollinger or King Alison, CGIAR- IEA , c/o FAO Rome, Italy Email: info@kingzollinger.ch	Member (IEA Representative)
5	Ivan Rwomushana, Program Manager, Staple Crops Programme, the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) Email: i.rwomushana@asareca.org	Member (Member, DC IAC)
6	Ndiaga Cisse, Director of Research, CERAAS, Senegal Email: ncisse@refer.sn	Member (Member, DC RMC)
7	Serge Braconnier, Senior Eco physiologist, CIRAD (French Agricultural Research Centre for International Development) Email: serge.braconnier@cirad.fr	Member
8	Shoba Sivasankar, Program Director, CRP-Dryland Cereals ICRISAT, Patancheru, 502 324, Telangana State, India Email: s.sivasankar@cgiar.org	Member and Convener
9	CCEE Manager: G G Koppa, Senior Program Manager CRP-Dryland Cereals, ICRISAT, Patancheru, 502 324, Telangana, India Email: g.koppa@cgiar.org	Member