# SYNTHESIS AND LESSONS LEARNED FROM 15 CRP EVALUATIONS

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Independent Evaluation Arrangement

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# PREFACE

On behalf of the IEA team, I am pleased to publish this Synthesis that concludes the first round of evaluations of CGIAR research since the implementation of CGIAR reform. This report brings together the results of evaluations of all 15 CRPs that form the first portfolio of the new CGIAR. These evaluations were conducted over a short period of just over two years by evaluation teams composed of experienced evaluators and eminent experts in the fields covered by the research program in question.

The Synthesis consolidates the wealth of evidence and analysis to draw conclusions and lessons aiming to help the next round of research programs to deliver effectively on their stated developments goals.

In this context, it is important to note that the CRPs are complex partnerships that were evaluated at an early stage of their implementation. Even during the early days, the design, funding and research justification of the nascent CRPs were subject to considerable changes. These changes presented the evaluations with several challenges that the IEA addressed by working closely with the teams to design and implement a harmonized approach and methodology across evaluations, emphasizing consultation with all stakeholders throughout the evaluation process.

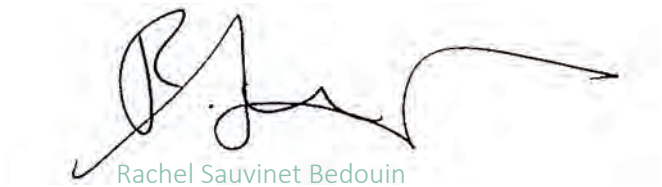
While this report puts forward a number of specific conclusions and lessons, the evidence, analysis and recommendations of the individual evaluations have already been used in various ways; by the Centers in preparing the second generation of CRPs and by the ISPC in appraising proposals received. In addition to CRP specific insights, the report identifies patterns of CRP implementation and performance that have implications at CGIAR System level, and the analysis contained in the report will continue to be valuable in guiding the implementation process as well as decision-making in the future.

More widely, the insights and lessons on agricultural research for development that the report provides also serve a broader audience, including CGIAR partners. It is expected that the individual evaluations and the Synthesis will have a life beyond the review of the CRP portfolio and preparation for the next phase. At CRP level, some of the recommendations will take time to implement and changes are likely to take place at varying speeds. We also expect that CGIAR partners and others will use the evaluations addressing joint work and generic agricultural research and development challenges. This contribution to more widespread learning adds further value to the work presented in this volume.

The development and deployment of the CRPs was certainly a most ambitious and far-reaching reform in the history of CGIAR. Has that been successful? I reckon that the evaluations and the Synthesis provide a positive answer. Notwithstanding the multiple hurdles inherent to institutional changes of that scale and an international context that added significant challenges and risks, the CRPs, according to the Synthesis, have progressed on many fronts, including: sustained production of international public goods reflecting excellence in science in many parts of CGIAR; better articulation of research-to-development theories of change and associated partnership strategies; and, above all, the willingness to collaborate throughout the programs, from CRP and center management to research scientists working together. There are already signs that collective action is a significant driver for the programs contributing towards achieving development outcomes.

# PREFACE

As CGIAR prepares for its next phase, it is my hope that this report and the evaluations on which it is based are found useful and contribute to effective and efficient research planning, decision-making and management across CGIAR in support of the System's development goals.



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Head, IEA

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# ABBREVIATIONS

| | |
|---|---|
| A4NH | Agriculture for Nutrition and Health (CRP) |
| AAS | Aquatic Agricultural Systems (CRP) |
| ARI | Advanced Agricultural Research Institutions |
| BoT | Board of Trustees |
| C-CRP | commodity CRPs (classification for this Synthesis) |
| CCAFS | Climate Change, Agriculture and Food Security (CRP) |
| CIMMYT | Centere Internacional de Mejoramento de Maiz y Trigo |
| CGIAR | Consultative Group for International Agricultural Research |
| CIAT | International Center for Tropical Agriculture (CGIAR) |
| CIFOR | Center for International Forestry Research (CGIAR) |
| CIP | International Potato Center (CGIAR) |
| CRP | CGIAR Research Program |
| DIIVA | CGIAR study on Diffusion and Impact of Improved Varieties in Africa |
| FAO | Food and Agriculture Organization of the United Nations |
| FP | Flagship project (CRP) |
| FTA | Forests, Trees and Agroforestry (CRP) |
| FTE | full-time equivalent |
| GFAR | Global Forum on Agricultural Research |
| GRiSP | Global Rice Science Partnership (CRP) |
| IA | impact assessment |
| IAs | impact assessment studies |
| ICARDA | International Center for Research in the Dry Areas (CGIAR) |
| ICRAF | World Agroforestry Center (CGIAR) |
| ICRISAT | International Crops Research Institute for the Semi-Arid Tropics (CGIAR) |
| IDO | Intermediate Development Outcome |
| IEA | Independent Evaluation Arrangement (CGIAR) |
| IF | impact factor |
| IFPRI | International Food and Policy Research Institute (CGIAR) |
| IITA | International Institute of Tropical Agriculture (CGIAR) |
| ILRI | International Livestock Research Institute (CGIAR) |
| IMWI | International Water Management Institute |
| IPG | international public good |
| ISI | International Scientific Indexing |
| ISPC | Independent Science and Partnership Council (CGIAR) |
| L&F | Livestock and Fish (CRP) |

# ABBREVATIONS

| | |
|---|---|
| M&E | Monitoring and evaluation |
| MV | modern varieties |
| NARS | National agricultural research system |
| NC-CRP | non-commodity CRPs (classification for this Synthesis) |
| NGO | Non-government organisation |
| NRM | natural resource management |
| OCS | One Corporate System (CGIAR) |
| PIM | Policies, Institutions, and Markets (CRP) |
| PMUs | Program Management Units |
| R&D | Research and Development |
| RBM | results based management |
| RCT | randomized control trial |
| RinD | Research-in-Development |
| RTB | Roots, Tubers and Bananas (CRP) |
| RPGM | Review of Governance and Management (IEA) |
| SLO | System Level Outcomes |
| SPIA | Standing Panel on Impact Assessment |
| SRF | Strategy and Results Framework (CGIAR) |
| ToC | Theory of change |
| ToR | Terms of Reference |
| WLE | Water, Land and Ecosystems (CRP) |

# EXECUTIVE SUMMARY

## BACKGROUND

CGIAR is a global partnership that comprises 15 international Research Centers engaged in development-oriented research on agriculture and natural resources. Created in 1971, CGIAR became increasingly complex as it evolved over time, leading to many challenges such as the lack of a clear mission-oriented research focus, the proliferation of uncoordinated CGIAR entities and programs, and the growing dependence on bilateral funding, often with a strong focus on development at the expense of science. Starting in 2008, CGIAR underwent a major reform that aimed to address these challenges. A central element of the reform was the creation starting in 2011 of 15 CGIAR Research Programs (CRPs). Each of them is jointly managed by several CGIAR Centers, often with external partners as well. The CRPs were designed to integrate virtually the entire research portfolio of all Centers around one strategic framework that articulated CGIAR's overarching goals (also referred to as System- Level Outcomes): reduced rural poverty, improved food security, improved nutrition and health, and sustainably managed natural resources. The creation of CRPs was probably the most far-reaching and ambitious reform effort undertaken since the establishment of CGIAR.

## PURPOSE AND SCOPE OF THE SYNTHESIS

In November 2013, the Fund Council of CGIAR decided that all current CRPs should undergo an evaluation prior to the preparation of full proposals for a second CRP funding period that will start in 2017. The Independent Evaluation Arrangement (IEA) of CGIAR carried out ten CRP evaluations between 2013 and early 2016. In addition, IEA provided technical support and internal and external quality assurance to evaluations of the five remaining CRPs that were commissioned by the programs themselves. At the end of 2015, IEA decided to conduct a "Synthesis and Lessons Learned from 15 CRP Evaluations" – the subject of this report. The primary objective of this Review is to identify major patterns and emerging lessons from evaluation findings, focusing on selected topics, namely relevance and priority setting, quality of science, outcomes and impact, gender, partnerships and capacity development, governance and management, and the value added of the CRPs. The Review is not meant to be a detailed and comprehensive meta-analysis of the 15 CRP evaluations. The purpose is rather to identify lessons for the next phase of the CRPs.

The Review is based on the evaluation reports of the 15 CRPs. In some cases the Synthesis team also consulted primary data collected for the evaluations, such as researcher surveys and bibliometric data. In addition, CGIAR documents such as earlier reviews and strategic documents, provided contextual information. However, it was beyond the scope of the Review to analyse other CRP documents, or to collect other primary information to cover aspects that had not been addressed in the CRP evaluations.

## RELEVANCE AND PRIORITY SETTING

The CRPs were developed within the Strategic Results Framework (SRF) of 2011. The SRF 2011 recognized the need to provide more specific guidance of overall System priorities as the basis for developing the CRP portfolio, but time and resources did not allow this. The SRF 2011 recommended a more in-depth analysis of priorities for the next round of CRPs and this is still in progress. The SRF 2016 lays out eight

areas of research as "priorities" (SRF 2016, p. 4), but they are so generic that they provided little guidance either to choice of a CRP portfolio or the relative importance among CRPs within a portfolio. Nonetheless, all evaluations concluded that the CRPs align well with CGIAR SLOs. This alignment is being operationalized through a set of Intermediate Development Outcomes (IDOs) that have been developed to correspond to each System Level Outcome (SLO). The CRPs needed to develop their program-specific IDOs derived from their "Theories of Change" (ToCs).

At the CRP level, the evaluations found that some CRPs had developed more analytical approaches to priority setting, although there was little evidence that they influenced resource allocation. Demand-side approaches to assessing priorities were also evident in most CRPs, sometimes with considerable success according to the evaluations. Overall, legacy research and bilateral funding played a large role in CRP resource allocation. Several evaluations noted that such bilateral funding often drives CRPs toward development activities in which they do not have comparative advantage.

### EMERGING LESSONS ON RELEVANCE AND PRIORITY SETTING

- Use of ToCs and IDOs has the potential to increase the relevance of CGIAR research by strategically focusing on outcomes and impact. However, identifying IDOs based on ToCs does not replace priority setting; it can only provide a starting point. This approach still needs to be combined with methods of priority setting to identify how funding is best allocated across and within the CRPs, taking into account aspects such as the comparative advantage of CGIAR and the role of research vis-à-vis other factors in reaching a particular IDO. CGIAR can draw on a rich experience in using quantitative and qualitative methods for priority setting, and new methods of bottom-up priority setting have been tested during the evaluation period, especially in the Systems CRPs. Still, the evaluations indicate that substantially more emphasis on priority setting is required, both at the System and the CRP level, if the CGIAR wants to realize its own goal to be at the forefront on how the international community should allocate resources for international agricultural research.
- At the System level (for future SRFs), the emerging lesson is that, even considering the long history and rich experience of CGIAR in using a wide variety of prioritization methods, the time and the resources required to develop a robust approach for setting priorities for IDOs should not be underestimated. The default to not setting priorities at the System level is the status quo in allocating funds across CRPs that represents an implicit set of priorities of the System.
- The need for efforts to define priorities within CRPs remains strong and efforts to respond to this need have still been evolving during the evaluation period, with variations across CRPs. The majority of evaluations recommended more rigorous and transparent priority setting mechanisms at the CRP level for allocating W1/W2 funding and tapping W3 and bilateral funds. New approaches to use bottom-up demand-side approaches have been applied, and the identification of IDOs has been an important step to ensure relevance. However, more analysis is required for priority setting within the CRPs to find the best strategies on how to meet the IDOs, especially with a view to important strategic questions and addressing research needs of poverty hot-spots.

## QUALITY OF SCIENCE

Following a framework developed by IEA, quality of science was evaluated based on assessments of the quality of research inputs (staff, infrastructure), the appropriateness of research management processes, and the quality of research outputs (publications and other types of outputs).

### RESEARCH INPUTS

The evaluations show that overall, the CRPs have been able to engage research leaders of adequate qualification and scientific standing to lead the wide range of CRP research activities at a globally competitive level. The CRPs are also home to highly productive world-class researchers in several fields of research. However, there is considerable variation in staff quality across CRPs, which partly reflects the traditional strengths and weaknesses of the participating Centers that had been documented in earlier reviews of the Centers. The evaluations also indicate that improving the disciplinary mix of their researchers remains a challenge, even though that was one of the expected benefits of creating CRPs. Likewise, there is still much to do to build sufficient research staff capacity in "non-traditional" research areas that the CRP portfolio aimed to strengthen within CGIAR, such as farming systems research and participatory research. The researcher surveys indicates that many CRPs could do better in terms of creating individual incentives for performance, in encouraging creative thinking, and in allowing for risk taking and learning from failure.

The quality of research infrastructure, another major input of research quality, is strongly influenced by previous investments by the Centers. Researchers in regions that were traditionally disadvantaged, especially in Sub-Saharan African, did not seem to benefit much from participation in the CRPs in terms of better research infrastructure. There are also serious concerns regarding the lack of long-term investment in research infrastructure even in areas where CGIAR had been strong in the past, given the funding structure (see below).

### RESEARCH MANAGEMENT

Research management processes, especially those that aim to ensure quality of science, remained in the domain of the Centers rather than being managed at CRP level. Considerable differences continue to exist between Centers in this respect. The implications for the CRPs are not straightforward, since establishing additional processes for ensuring quality of science at the CRP level would lead to duplication of efforts. This is a typical challenge of matrix management that requires further consideration as the CRPs evolve. Harmonization of processes to ensure quality of science would be a promising approach. Further, the opportunities that the CRPs offer for generating globally relevant data sets and making them publicly available remains underexploited and several evaluations noted that data sharing across Centers remains a significant challenge.

### RESEARCH OUTPUTS

Overall, the evaluations concluded that the CRPs have been able to produce outputs of a quality that is consistent with what can be expected from international agricultural research organizations. However, there is considerable variability in this respect. Many CRPs have been able to produce out-

standing publications in specific areas, but these achievements were often due to a relatively small share of exceptional researchers (as is the case in many research organizations). The publication analysis also indicates that collaboration with Advanced Agricultural Research Institutions (ARIs) seems essential for the CRPs to be able to stay at the research frontier in an increasingly competitive environment. Similarly to the analysis of staff qualifications, the publication analysis also indicates that (pre-existing) differences across CGIAR Centers regarding their visibility and impact in the international scientific literature have not been significantly reduced through the CRP approach of bringing different Centers together. There is no evidence yet of joint publications across Centers within a CRP in high-ranking journals, although it is probably too soon to see this effect. A matter of concern for several CRPs are the relatively high shares of articles in journals without impact factors or with low impact factors, as peer review remains one of the most important instruments in research to ensure quality of science.

Apart from publications, the CRPs produced other important outputs, especially technological innovations and institutional innovations. The CRP evaluations differed in the level of detail in which they assessed the quality of the non-published outputs, but the evidence suggests that their quality was overall also consistent with what can be expected from international agricultural research organizations.

### EMERGING LESSONS ON QUALITY OF SCIENCE

- The evaluations show that the CRPs are research programs where world-class agricultural research is being conducted with a focus on CGIAR's overarching goals. Nevertheless, the variation in quality of science within and across CRPs indicates that to date CRPs have only been partly successful in using the potential of the new matrix management structure for combining the strengths of the participating Centers to boost the overall quality of science. CRPs may gain from harmonizing processes of quality control and performance management of research staff, which remains the authority of the Centers. Encouraging co-authorship across Centers and stronger individual incentives for performance could also be useful. Moreover, several CRPs would benefit from a better integration of social science research. All the CRPs would benefit from integrating a wider range of social sciences beyond economics in their disciplinary portfolio.

- CRPs also created the opportunity to share data across Centers and make comprehensive data sets publicly available - an important international public good, and a distinct comparative advantage of CGIAR. The evaluations indicate that more efforts are required to utilize this opportunity. Innovative approaches in some CRPs may serve as examples, but a stronger culture of data sharing across Centers is also needed.

- CRPs with comparatively high shares of publications in journals without an impact factor could derive insights from other CRPs on how to best address this challenge. Strategies may include setting clear goals for staff on different types of outputs; mentoring of junior scientists; and encouraging co-authorship of junior and senior scientists as well as collaboration with ARIs.

- CRPs that rely on expensive research infrastructure to be able to conduct research of high quality have largely benefitted from past investments of the Centers and from collaboration with ARIs. The evaluations indicate an urgent need to identify how sufficient investment in research infrastructure to ensure future quality of science can be ensured under the CRP funding system that does not adequately fund these types of investments.

## OUTCOMES AND IMPACT

The evaluations assessed the tools that the CRPs use to promote impact (formulating impact pathways and ToCs) as well as the evidence on impact.

### IMPACT PATHWAYS AND TOCS

The evaluations and the researcher surveys clearly indicate that requesting each CRP to develop a ToC has forced CRPs to consider more carefully the processes for achieving impacts and resulted in a stronger impact orientation. However, the evaluations indicate that the direct translation of ToC - a tool developed for development projects - to the CRPs needs much more thought. While development projects are typically implemented in a specific region, CRPs are highly complex global research programs that include a wide range of different types of activities (from laboratory research and theoretical modelling to activities in farmers' fields). They target a large number of very diverse beneficiaries and typically they have rather diverse impact pathways (e.g., achieving impact directly through working with farmers and extension agents as well as indirectly through effects on food prices, advising policy-makers, influencing global debates and donors and changing development paradigms). The evaluations indicate that CRP ToCs also need to be more cognizant of the relevant literature. ToCs are essentially based on assumptions regarding the different causal links in an impact chain, and in order to meet the standards of a global research programs, these assumptions should be supported by the respective literature (e.g., the literature on technology adoption and agricultural innovation systems or the emerging field of implementation sciences).

Several evaluations also expressed serious concerns regarding current efforts of CGIAR to use the ToC/IDO approach as the basis for a results-based management (RBM) system. The complexity of the CRPs as global research programs (see above) and the inevitably uncertain nature of research limit the applicability of the RBM approaches. Concerns include unrealistic assumptions about the attributability of development outcome indicators to CRP research; underestimation of the resources required to adequately monitor the development outcome indicators across the entire portfolio; and heavy reporting requirements that may undermine staff morale.

### IMPACT

Past impact assessments (IA) concentrated on the impact of genetic improvement of crop varieties and fish strains. These impact estimates have been, and still are, used by CGIAR as a major rationale to justify investment in the System as well as for learning. The evaluations indicate that in the Commodity CRPs,

where this type of impact is most relevant, IA has lost momentum, as they reported only few major IA studies and no global assessment. A regional assessment of Sub-Saharan Africa found modest adoption of modern crop varieties since 1998, but a large share of those varieties could be attributed to the CGIAR. Randomized controlled trials (RCTs) are increasingly being used to establish early outcomes and provide a basis for learning and scaling up, e.g., in the cases of flood-tolerant rice and orange-fleshed sweet potato. Among the non-Commodity CRPs, IA efforts have been limited in most CRPs. Partly, this reflects difficulties of attributing outcomes and impact to the type of research products produced by the non-Commodity CRPs.

The evaluations generally rated the quality of IA favourably although often noting considerable variability. Methodological rigor has the potential to improve with the increasing availability of panel data sets and novel techniques such as RCTs to measure risk effects of technology use and DNA fingerprinting to verify varieties grown by farmers. Nonetheless, a recurring theme in the evaluations' recommendations is the need for CRPs to adopt a systematic and adequately funded approach to IA that would replace the present ad hoc processes that provide only very partial and sporadic coverage of CRP activities. The heavy investment in baseline data was also noted in several evaluations as not being sustainable.

### EMERGING LESSONS ON OUTCOMES AND IMPACT

- The introduction of the ToC concept has led to a stronger results orientation of CGIAR. However, more efforts are required to adapt the ToC concept, which was originally designed for development projects, to the specific requirements of a highly complex international research program. The CRPs could make better use of their own research expertise to develop better ToCs, but this will require that CRP staff embraces the concept as part of their research endeavour, rather than considering it as just another requirement to be fulfilled to access funding.

- These lessons also apply to current efforts to develop a RBM System based on the ToC/IDO concept. The evolving RBM System for CRPs needs to be based on more realistic assumptions, in line with the evaluation literature, regarding attributability of outcomes to research effort, and regarding the number and type of indicators that can be credibly be monitored in large-scale complex research projects, and with reasonable resources. The focus could be placed on indicators that are most relevant for IA.

- The evaluations indicate that the development of a systematic approach to IA is still a work in progress. IA should be an ongoing activity that provides broad coverage of the major CRP research products and their impact on SLOs through IDOs at regular intervals of 5-10 years, supported by the allocation of a certain percentage of funds to IA.

- Non-commodity CRPs face major methodological challenges in IA as, given the state of the art, assessing impacts through IDOs on SLOs will be limited by attribution and measurement

problems. In many cases, outcomes will necessarily be assessed by tracking influence on national and local decision makers and a systematic program of IA would allow synthesis of results at a regional or global level.

- At the System level, the Standing Panel on Impact Assessment (SPIA) has played a critical role in quality control for IA, providing matching funds, creating a community of practice and promoting regional and global coverage. Considering the important role that credible state-of-the-art IA played in the past for justifying funding to the CGIAR, it is important to continue these efforts.

## GENDER

The evaluations assessed the focus on gender in the CRPs by evaluating gender strategies, efforts to create an enabling environment for gender research, progress towards gender mainstreaming in research, and attention to gender in the workplace. The CGIAR Consortium-level Gender Strategy published in 2011 served as reference for the evaluations.

### GENDER STRATEGIES

Overall, the evaluations found that requesting the CRPs to develop Gender Strategies has been an important step in mainstreaming gender throughout CGIAR. The evaluations suggest that CRP Gender Strategies could be more explicit about the approach (gender-responsive or gender-transformative) to be applied in the respective CRP. Moreover, more strategic thought could be given to the question of whether the respective CRP should have a dedicated gender component.

### CREATING AN ENABLING ENVIRONMENT FOR GENDER RESEARCH

The evaluations suggest a mixed picture in creating an enabling environment for gender research. Available evidence suggests that not all CRPs reached the target set by the Consortium to allocate 10% of the funds to gender research. A variety of organizational structures have been created within the CRPs to support gender research, but it was too early to assess their effectiveness. The evaluations provide numerous examples of support to gender mainstreaming, especially regarding the development of tools and guidelines. It is clear from the evaluations that there are wide variations in efforts across CRPs, but no clear trends among groups of CRPs could be observed. The researcher surveys do indicate a need to pay more attention on how to get the buy-in of staff for gender mainstreaming, especially for male staff.

### GENDER MAINSTREAMING IN RESEARCH

The evaluations note a trend towards increased collection of gender-disaggregated data, which has not yet been matched by investments in the rigorous analysis and use of these data or in more in-depth research on gender more generally. It also appears that qualitative research has played a less important role, which is not surprising considering the low representation of social science disciplines that specialize in qualitative research methods, such as sociologists and anthropologists. CGIAR has unique potential to

bring gender into the mainstream literature on agricultural development - an important impact pathway for the CRPs. Using this pathway requires innovative high-quality publications that demonstrate the importance of addressing gender issues in different fields of agricultural and natural resources research. To what extent CRPs are on the way to realizing this potential should be addressed in future gender-specific evaluations.

### GENDER IN THE WORKPLACE

The overall picture that emerges from the evaluations is that, with some exceptions, the role of gender in the workplace - the second major pillar of the CGIAR Gender Strategy - has received less attention than the first pillar (mainstreaming gender in CRP research). Since the Centers have largely retained the authority over human resource management, leadership of the Centers may have a larger role to play than CRP leadership in changing this situation.

### EMERGING LESSONS ON GENDER

- During the evaluation period, a range of efforts has been adopted to promote gender mainstreaming and improve the enabling environment for gender research throughout the CRPs. More attention could be paid to strategic questions, such as the adoption of a gender-responsive or a gender-transformative approach, and the potential merits or demerits of having a dedicated CRP component on gender research, in addition to mainstreaming gender throughout the CRP research portfolio.
- The evaluations also note progress in mainstreaming gender in actual research activities. The evaluations noted that more emphasis should be placed not only on collecting gender-disag gregated data, but also on analysing and using them, and on complementing quantitative with qualitative research approaches. This would allow CGIAR to bring gender into the mainstream of different branches of literature on agricultural development.
- More emphasis is required to adequately address gender in the workplace, the second pillar of the CGIAR Gender Strategy.

## PARTNERSHIPS AND CAPACITY DEVELOPMENT

Partnerships and capacity development are closely linked since capacity development efforts typically involve and target specific categories of partners.

### PARTNERSHIPS

CRPs were found to have a large number of partners, reaching up to 900 for a single CRP. Many evaluations found that the choice of partners was often based on legacy research and on seizing opportunities, rather than on a systematic and strategic selection process. Even in those cases where CRPs had developed an explicit strategy, the evaluations saw room for improvement, especially in terms of providing clear operational guidelines for the choice of partners within the overall ToC.

National research organizations remain as the most important type of partners for almost all CRPs, and these partners were found to be strongly positive about working with the CRPs. However, limitations were found regarding the nature of that involvement especially their role in influencing the research agenda. New partnerships that have been established with development organizations, and private sector organizations, including multi-national companies, play an increasing role as a partner of the CRPs especially in delivery.

ARIs remain critical for CRPs to stay at the research frontier. The evaluations highlighted the important role of these partnerships in accessing the most recent science and in enhancing the quality of science in CGIAR through collaborative research, co-authorship and joint supervision of graduate theses. Some of these partnerships are developing into important global networks. The evaluations note opportunities to deepen these partnerships in areas such as in genomics/phenomics and participatory research.

### CAPACITY DEVELOPMENT

CRPs engage in a wide range of capacity development activities, mostly targeting the national research and development partners. Several evaluations point out that these activities have not been guided by an explicit capacity development strategy, and tended to be rather ad hoc and focused on training with little attention to broader institutional development. However, there is a trend towards a more strategic approach due to the efforts of the CGIAR Capacity Development Community of Practice. One type of capacity development activity that was found to be widespread in several CRPs is training through extension activities, often involving tens of thousands of farmers under bilaterally-funded projects. The evaluations questioned the comparative advantage of CGIAR for such activities

### EMERGING LESSONS ON PARTNERSHIPS AND CAPACITY DEVELOPMENT

- CRPs will benefit from developing explicit partnership strategies as well as capacity development strategies, which should be linked to each other and to the ToCs and Impact Pathways. To be of practical value, these strategies need to provide operational guidelines and criteria for selecting partners, and for prioritizing capacity development activities within the overall institutional context.
- The quality of partnerships with research partners in the South could be improved by engaging them more fully in the entire research process from research design to co-authored publications, and by addressing the power imbalances that may result from their role as subcontractors.
- Maintaining the long-standing and highly valuable partnerships with ARIs in core areas of CGIAR research is essential for CRPs, who can also benefit from developing new partnerships with internationally leading research groups for relatively new areas in the CRP portfolio.
- In view of the rising importance of private sector organizations as partners of the CRPs, it seems essential to develop and publicize private sector engagement policies with the aim to develop new impact pathways while at the same time managing reputational risks.

## GOVERNANCE, MANAGEMENT AND FUNDING

The creation of CRPs as a major element of the CGIAR reform, greatly expanded a matrix management structure in CGIAR and changed the funding, at least for W1/W2, from Centers to CRPs. As might be expected, the evaluations found that these reforms created considerable challenges for governance, management and funding.

### GOVERNANCE

Most CRPs changed their governance structures during the evaluation period, partly in response to Consortium Office – Fund Council instruction, itself based on a Review of CRP Governance and Management (referred to as RPGM) that was conducted during the evaluation period. RPGM recommended that all CRPs should have only one governance body with both advisory and oversight functions that includes Center representatives as well as independent experts and non-CGIAR partners. CRP evaluations show a mixed picture regarding the extent to which the recommended governance structure has been conducive to meeting the governance challenges inherent in the matrix management structure of the CRPs. A major challenge identified is the ability of the governing bodies to exercise a real oversight function instead of only an advisory function. Moreover, a trade-off was found in limiting the size of the governing body to enhance its effectiveness and ensuring its inclusiveness in terms of representation of participating Centers, independent experts, different types of partners, and representatives of target regions. Center representatives in governing bodies were found to face potential organizational conflicts of interest (balancing Center interests vis-à-vis CRP interests).

### MANAGEMENT

Contrary to a RPGM recommendation, the evaluations found that most CRPs have maintained a management committee that has senior management representatives of the Centers as members, and exercises substantial governance functions in addition to management functions. Overall, the evaluations found this arrangement to be useful. Since essential dimensions of management, such as management of research staff and research processes, remain under the authority of the Centers, the participation of senior Center managers in the CRP Management Committees was found to facilitate the implementation of management decisions.

With few exceptions, the evaluations found that the authority of the CRP Director to be too limited, although a trend towards allocating more authority to the CRP Director was observed. The delegation of management authority to flagship leaders was generally seen to be positive ("distributed leadership"), but it was noted that flagship leaders generally have no management authority outside their home Centers. The evaluations indicated that the development of systems that provide appropriate management information to CRP managers remains a challenge for many CRPs. Even basic information, (e.g., on bilateral projects that are mapped into the CRPs), was often not available to CRP managers. The introduction of "One Corporate System" (OCS) was identified as a positive step toward a solution.

## FUNDING AND ITS MANAGEMENT

The CGIAR reform introduced three funding windows for the CRPs[1]. W1/W2 funds are important to the success of the CGIAR reforms, since the Consortium Office, upon approval of the Fund Council, can allocate W1 funds among CRPs to influence the overall direction of the research portfolio, and CRP managers can potentially allocate W1/W2 funds across Centers according to priorities and performance, and to incentivize collaboration across Centers participating in the CRP. During the evaluation period, the share of W1/ W2 funds of total expenditure dropped to less than 30% in 2015[2] , and is projected to be 23% of a total indicative budget of USD 900 million for 2017[3] . At the same time, the share of W3 share of total CGIAR funds received (W1/2/3 )[4], increased from 17% in 2012 to 29% in 2014 and to around 47% in 2015. These trends mean that W1/W2 funds will have limited potential to exert real influence on the direction of the CRP portfolio.

The evaluations indicate that there was considerable variation in the approaches that CRP use to allocate W1/W2 funds. Only some CRPs funded cross-Center research activities of strategic relevance to the whole CRP. Formula-based allocation of funds based on legacy research was more common as it is the lower cost option and politically easier. Several evaluations recommended moving more funds to competitive processes now that the CRPs have achieved a certain level of maturity. Almost all the evaluations highlighted the uncertainty of W1/W2 funds from year to year, and even within years when budget cuts were announced well into the fiscal year, after commitments were already made. This mode of managing W1/W2 funds, as well as their declining share, has seriously undermined their value for funding strategically oriented long-term research. As several evaluations noted, W3 and bilateral funds are now not only the bulk of the funds, but are also considered the more stable 'core' of the CRPs.

### EMERGING LESSONS ON GOVERNANCE, MANAGEMENT AND FUNDING

- The governance structures of CRPs were evolving during the evaluation period. Since all CRPs have moved to a single governance body (steering committee) that is supposed to have oversight as well as advisory functions, there is a need to ensure that this function can be effectively executed. At the same time, CRPs must try to ensure the inclusiveness of the steering committees, especially in terms of representatives from target regions. Since the "single body" governance structure is new for many CRPs, they must be monitored on whether bringing together the voices of independent experts, partners and participating Centers in one single governing body will actually work and benefit the CRPs more than previous arrangements.
- The evaluations suggest that CRPs benefit from having Management Committees in which senior managers of the Centers are included, and that have governance functions such as

1 Window 1 funds that can be allocated across CRPs, Window 2 funds that are allocated to specific to CRPs, and WIndow 3 funds that are allocated to specific Center.

2 Preliminary - CGIAR Financial Report 2015, issued 26 April 2016.

3 CGIAR Consortium (2015 a): 2017-2022: CGIAR Research Program Portfolio (CRP2): Final Guidance for Full Proposals. 19 December 2015.

4 This does not include bilateral funding.

strategic planning in addition to management functions. This finding raises, however, the question of whether senior Center managers should play a substantial role in both the steering committees and the management committees (as is currently the case), or whether Centers should be represented differently, in the Steering Committees, such as by members of their Boards of Trustees (BoT).

- The evaluations indicate that in most cases, CRP management could be improved by allocating more authority to the CRP Directors. Priority areas highlighted in the evaluations include the participation of CRP Directors in the performance assessment of staff members with management responsibilities in the CRP (such as flagship leaders), and involvement of CRP Directors in decisions to map bilateral projects into a CRP. The evaluations indicate also that systems to provide adequate management information need to be improved in most CRPs. OCS is expected to play a positive role in this regard.
- The review of the CRPs that were evaluated as successful as well as plausibility considerations suggest that a minimum share of W1/W2 funds in a CRP budget should be in the range of 30-35% if W1/W2 funds are to provide sufficient leverage to implement an integrative and collaborative research program across Centers. Hence, there is a need to revisit the compact between the donors and the Centers in order to rebuild commitment to the CGIAR reform agenda and ensure the success of the second phase of CRPs. On the one hand, the CRPs will have to articulate a compelling case for their priorities and potential impacts on the IDOs and SLOs and move away from formula funding to transparent mechanisms to allocated funds to the highest priorities and the best science, while at the same time demonstrating a willingness to close off legacy research that does not meet these criteria. On the other side, the donors have to reassert their commitment to providing funds in the most flexible way possible to the CRPs to implement such a program.

## VALUE ADDED

### VALUE ADDED

The evaluation reports and the researcher surveys broadly concluded that CRPs have added significant value, even though there are variation across CRPs. Among the Commodity-CRPs, it appears that added value was easier to realize for single commodity CRPs or for single commodities within multi-commodity programs. Interaction, learning and sharing of knowledge, germplasm and tools between scientists in different Centers has increased under many of the CRPs relative to the pre-reform situation. Several CRPs have included non-CGIAR core partners - research institutions from high-income countries with an international mandate - who play an important role in implementation.

The evaluations indicate that the development of CRP has facilitated integration around a strategic framework in several of the CRPs, especially those that used W1/W2 funding strategically rather than basing funding allocation on a formula. The evaluations all comment favourably on an emerging results culture in CRPs with much greater awareness and attention to getting beyond research outputs

to outcomes and impacts. The evaluations also provide evidence of synergies generated by combining complementary assets from different participating Centers. Likewise, efficiencies are also being realized through common protocols and tools, such as common data recording protocols.

The evaluations are uniformly in agreement that the potential value added of CRPs is much higher than what has been realized to date. A common finding is that two to four years is only sufficient to lay the basis for strong CRP partnerships across Centers, and that several more years are needed to continue to learn from experience and build trust in order to develop truly integrated programs.

### CONSTRAINTS TO VALUE ADDED

The evaluations also document a range of constraints to value added. All evaluations commented on the increased transactions costs for CRP managers to coordinate and comply with CRP requirements for reporting, and for scientists in terms of additional planning and reporting. Staff surveys indicate widespread scepticism regarding the CRP's potential to streamline administrative procedures, and some evaluations note that relations between CRPs and the Consortium Office have often been undermined by poor communication, frequently shifting guidelines, and lack of trust. The uncertainty of W1/W2 funding indicated above added to the perceived instability

### EMERGING LESSONS ON VALUE ADDED

To fully realize the potential value added, system stability is essential. CRPs were meant to run for ten years, subject to a mid-term evaluation. The CRPs that are making progress need to be assured of their continuity and the funds to implement their agreed research portfolio. Likewise, administrative procedures need to be harmonized and agreed on for the next several years.

## CONCLUDING REMARKS

In view of the findings of this synthesis of the 15 evaluations, one may ask whether, overall, the creation of the CRPs was a valuable reform approach for CGIAR. Taking into account the challenges inherent in introducing a system of matrix management across 15 legally independent centers, there are good reasons to consider the creation of the CRPs to be a valuable addition to the CGIAR System, especially if funding flexibility can be regained. The evaluations provide evidence of a substantial willingness to collaborate at all levels, from the leadership of the CRPs and the Centers to the scientists on the ground. However, the incentives to collaborate in a major reform effort of CGIAR were strongest at the beginning of the reform, where agriculture had just come back to the center stage of international development after decades of neglect. To maintain the reform momentum, it is important to maintain strong incentives for collaboration, including CRP funding, if the reform goal of the "CGIAR functioning as one institution" is to be achieved.

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# 1. INTRODUCTION

## 1.1 BACKGROUND

CGIAR is a global partnership that comprises 15 international research centers engaged in development-oriented agricultural research. As per its current SRF (2016-2030)[5] , CGIAR aims to contribute to three overarching goals: reduced poverty; improved food and nutrition security for health; and improved natural resource systems and ecosystem services[6].

CGIAR was founded in 1971 with a focus on food staples. The system evolved over time, addressing a wider set of goals with an expanding research agenda, and an increasing number of Centers, eventually reaching 15. In 2008, CGIAR initiated a major reform that aimed at improving the coordination across the CGIAR Centers, making the research agenda more demand-driven, and strengthening the development impact of CGIAR research. The decision to reform the system was based on a comprehensive review of the CGIAR system published in 2008, which identified a number of shortcomings: lack of a clear mission- oriented research focus, proliferation of CGIAR entities and programs, cumbersome governance and complexity of decision making, deterioration of trust between Centers and donors, and stagnating funding[7].

5 CGIAR Consortium (2016 a): CGIAR Strategy and Results Framework 2016-2030.

6 As further explained below, these three goals are referred to as System-Level Outcomes (SLOs). The first SRF (2011) targeted four CGIAR system level outcomes (SLOs): reduced rural poverty, increased food security increase, improved nutrition and health, and sustainably managed of natural resources.

7 CGIAR Independent Review Panel (2008): Bringing Together the Best of Science and the Best of Development. Independent Review of the CGIAR System. page 2.

The CGIAR reform, which aimed at addressing these shortcomings, had four major elements: (1) a reform of CGIAR governance structure leading to the creation of three new institutional bodies at the system level: the CGIAR Fund, the CGIAR Consortium and the IEA; (2) the development of an overarching and results-based SRF covering the research agenda of all 15 Centers and their partners; (3) the establishment of CRPs, which were conceived as large, long-term and results-oriented research programs to be jointly implemented by several CGIAR Centers in order to implement the SFR; and (4) the creation of three funding windows that aimed at a greater harmonization of donor funding to CGIAR in line with the SRF. With implementation of these reforms and in view of the food price crisis of 2008, the donors pledged to substantially increase their funding to the reformed CGIAR.

The first SRF published in 2011[8] established 15 CRPs. The first CRPs started in 2011, and by 2013 all 15 were operational. An overview of these CRPs is provided in Annex 1. A new CGIAR SRF covering the time period from 2016 to 2030 was approved by the Fund Council in 2015. In the same year, the Fund Council put forward a second call for CRP proposals with a restructured and re-prioritized CRP portfolio. The implementation of the second-round CRPs is scheduled to begin in 2017. Concomitant to the reform, the donors increased the funding to CGIAR from 673 million USD in 2010 to more than one billion USD in 2014 (this excludes Centers' own income[9]). However, the indicative base budget for 2017 was estimated to be down to 900 million USD[10].

The SRF 2016-2030 has quantified the three overall goals, which are referred to as SLOs. By 2030, the action of CGIAR and its partners is expected to result in 150 million fewer hungry people, 100 million fewer poor people – at least 50% of whom are women, and 190 million ha less degraded land (CGIAR SRF 2016-2030, p.4). CRPs are requested to formulate IDOs that contribute to the SLOs. The IDOs should be derived from the Impact Pathways and associated ToC (see Chapter 3.2) that the CRPs need to develop.

The creation of IEA reflects an increased commitment of the reformed CGIAR to use evaluations as the basis for accountability, learning and continuous system improvement. Based at the Food and Agriculture Organization (FAO) in Rome, IEA is responsible for system-level external evaluations of CGIAR encompassing CGIAR institutions and CRPs, as well as pertinent themes and issues. In November 2013, the Fund Council agreed that all current CRPs should undergo some form of evaluation before preparation of full proposals in response to the call for proposals for the second round of CRP funding. In response to this decision, IEA commissioned and carried out ten CRP evaluations between 2013 and early 2016. In addition, IEA supported the evaluations of the five remaining CRPs that were commissioned by the programs themselves. At the end of 2015, IEA decided to conduct a "Synthesis of Lessons Learned of the 15 CRP Evaluations." This Synthesis is presented in this report.

Table A 4 in the Annex 2 gives an overview of some key characteristics of the evaluation, including the number of evaluation team members, the number of countries visited, the numbers of interviews conducted, the percentage of staff answering the survey, and the methods applied to assess

8 CGIAR Consortium (2011 a): A Strategy and Results Framework for the CGIAR.

9 CGIAR Consortium Office and CGIAR Fund Office (2015): CGIAR Financial Report for year 2014, page 3.

10 CGIAR Consortium (2015 a): 2017-2022: CGIAR Research Program Portfolio (CRP2): Final Guidance for Full Proposals. 19 December 2015, page 4.

quality of science. As can be seen from the table, while there was a clear effort to harmonize approach and methodologies[11], there was some variation in terms of the level of resources invested in the evaluations and the breadth of information collected.

## 1.2 SCOPE AND OBJECTIVES OF THE SYNTHESIS

As can be derived from the above time line, this Synthesis was undertaken at a time when the first phase of CRPs was ending and the proposals for the second phase of CRPs (starting 2017) were being drafted in response to the new CRP portfolio. To inform the next phase of CRPs, this Synthesis aims to highlight patterns and to draw lessons across the 15 evaluations. The Synthesis is also expected to serve as a consolidated input for an anticipated system-wide evaluation in 2018. Against this background, the main objectives of this Synthesis of Lessons Learned are the following:

- to identify main patterns relating to the evaluation findings on selected topics focusing, on relevance and priority setting, quality of science, outcomes and impact, gender, partnerships and capacity development, governance and management and on the value added of the CRPs;
- to draw lessons on selected topics that can be useful for the second phase of CRPs, focusing on what worked and what did not work and why, taking the objectives of the CGIAR reform into account;
- to draw lessons on System-wide issues that are affecting CRP performance; and
- to identify key evaluation gaps, which should be filled before the System-wide evaluation planned in 2018.

The Synthesis is addressed to a broad range of stakeholders in CGIAR and partners of CGIAR, including the CRP managements, the Center managements, the Consortium Office, the Fund Council, the Independent Science and Partnership Council (ISPC), and the Global Forum on Agricultural Research (GFAR).

This Synthesis is limited in scope in the following two important aspects:

1. First, this Synthesis is not meant to be a detailed and comprehensive meta-analysis of the 15 CRP evaluations. As stated above, the purpose is rather to identify main patterns in the evaluations and to derive lessons learned that should be relevant for the next phase of the CRPs. Therefore, the choice of topics to be included in the Synthesis is necessarily selective. This selection is based on an assessment of the evaluation reports by the Review team and inputs from IEA, and consultations of the Draft Report with Evaluation Team Leaders, Center and CRP Managements, Independent Science and Partnership Council (ISPC) and other relevant stakeholders.
2. Second, this Synthesis is based on the evaluation reports of the 15 CRPs. In some cases the review team also reviewed primary data collected for the evaluations (such as survey and bibliometric data). However, it was beyond the scope of the Review to conduct a further analysis of CRP documents, or to collect other primary information to cover aspects that had not been addressed in the

11 IEA Guidance Note G1 Guidance for the Independent External Evaluation of CGIAR Research Programs (CRPs); and IEA Framework for Assessing Quality of Science.

CRP evaluations. The team did, however, review documents that are important for the context in which the CRPs operate (see details in the next section).

## 1.3 RECOMMENDATIONS AND MANAGEMENT RESPONSE

The 15 evaluations made a total of 181 recommendations. With the exception of the evaluations of CCAFS and Dryland Cereals, all evaluations had submitted their management responses by the time the Synthesis was being conducted. The areas which have been addressed most extensively by the recommendations have been program strategy and management issues, quality of science, and Governance and Management which covers structural and institutional issues. A total of 11 recommendations were addressed to the CGIAR system (Fund Council and Consortium Office), of which seven related to the future of the CRP, recommending in all cases a continuation and further funding of the program. It is noteworthy that almost all evaluations had at least one recommendation relating to gender issues and partnerships.

Out of the management responses received, the CRP managements fully accepted 126 recommendations (83 percent), partially accepted 24 recommendations [12](16 percent) and rejected two recommendations (1 percent). Please see Table 1 and Figure 1 for a detailed overview.

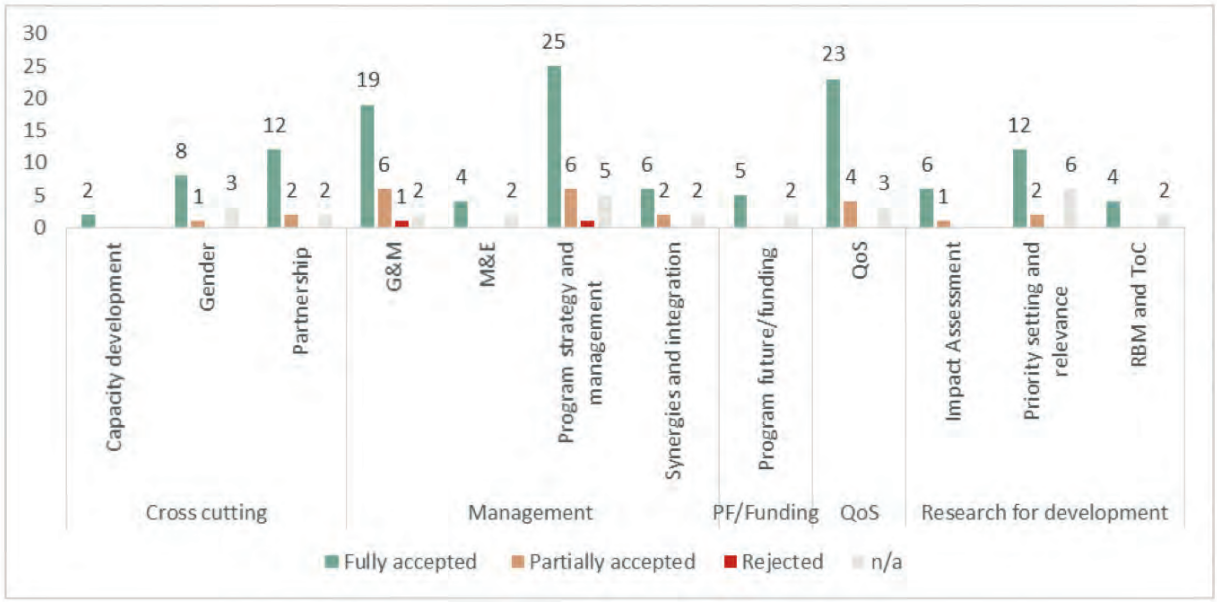
TABLE 1: OVERVIEW OF RECOMMENDATIONS AND MANAGEMENT RESPONSES

| CRP evaluation | Fully accepted | Partially accepted | Rejected | n/a | TOTAL |
|---|---|---|---|---|---|
| A4NH | 8 | | | | 8 |
| AAS | 9 | | 1 | | 10 |
| CCAFS* | | | | 14 | 14 |
| Dryland Cereals* | | | | 15 | 15 |
| Dryland Systems | 13 | | | | 13 |
| FTA | 10 | 2 | | | 12 |
| Grain Legumes | 4 | 3 | 1 | | 8 |
| GRiSP | 11 | 3 | | | 14 |
| Humidtropics | 11 | | | | 11 |
| L&F | 10 | | | | 10 |
| MAIZE | 8 | 3 | | | 11 |
| PIM | 12 | 3 | | | 15 |
| RTB | 9 | 7 | | | 16 |
| WHEAT | 11 | 1 | | | 12 |
| WLE | 10 | 2 | | | 12 |
| **Total** | **126** | **24** | **2** | **29** | **181** |

*No management response received at time of the Synthesis

12 Partially accepted also includes recommendations which were accepted “in principle” only.

FIGURE 1: RECOMMENDATIONS FROM CRP EVALUATIONS AND MANAGEMENT RESPONSES BY AREA




Source: IEA.

Overall, CRP managements in their responses acknowledged and appreciated the evaluations and in several cases noted that learning was already taking place during the course of the evaluation. Furthermore, some recommendations had already been addressed even before a formal management response was submitted. In those cases where the Consortium Office also submitted a response[13], it was in agreement with the recommendations, especially making reference to those recommendations either addressed to or being of relevance to the Consortium Office.

Another positive observation is that the Full Proposals for the second phase of the CRPs, which were submitted for review in June 2016, make significant references to CRP evaluations and to actions taken by CRP management to implement recommendations.

Overall, it can be said that CRPs have been acting upon the evaluations and have been making progress since the evaluations have been completed. However, this Synthesis necessarily considers the state of play at the time a CRP evaluation took place and does not take account of implementation of evaluation recommendations.

## 1.4 APPROACH AND METHODS

The purposes and the scope of this Synthesis were specified by IEA in the Terms of Reference (ToR) at the end of 2015. In January 2016, the team screened the evaluations and identified, in consultation with IEA, the topics on which the Synthesis should focus. Subsequently, the evaluation reports were thoroughly reviewed, and for each topic, the team extracted the relevant findings from the evaluation reports and compiled them in an excel data base. To make systematic use of the researcher surveys conducted for

13 Consortium responses were not submitted for the CRP commissioned evaluations as well as the two evaluations (CCAFS and Dryland Cereals) which have not received a management response yet.

the CRP evaluations, IEA compiled the results of those questions that had been asked in a comparable form by several evaluations. IEA also provided additional information, which could not easily be derived from the evaluation reports in a comparative form, e.g., information on funding.

The team also reviewed documents that are relevant for the context in which the CRPs operate. These include (i) strategic documents and guidelines produced at CGIAR level, such as the SRF, the CGIAR Consortium Gender Strategy and the Capacity Development Framework as well as White Papers produced by the ISPC; (ii) earlier evaluations, such as the Review of CGIAR Research Programs Governance and Management[14] and the Synthesis of the first five evaluations [15]; and (iii) other relevant studies, such as the CGIAR study on Diffusion and Impact of Improved Varieties in Africa (DIIVA).

In February/March 2016, the draft report was prepared on the basis of these information sources. The draft was then discussed with IEA and with Evaluation Team Leaders, Center and CRP Managements, ISPC and other relevant stakeholders. Based on the feedback from these consultations, the draft was revised.

## 1.5 LIMITATIONS

As stated above, this Synthesis is based on the CRP evaluation reports. The CRP evaluations were based on a common framework with a given set of evaluation criteria, and they applied a similar set of evaluation methods. However, they were conducted by different teams and they were tailored to rather different types of research programs. As a consequence, there is a considerable variation regarding the depth and the coverage of the assessments that the evaluation reports provide with regard to the different evaluation criteria. It was beyond the scope of this Synthesis to conduct a quality assessment of the evaluations. Furthermore, evaluations were carried out at different times, with the first CRP evaluation being completed early 2014, and the last one being completed only in June 2016. Therefore, some CRPs have been evaluated earlier in their implementation and did not have the chance to evolve and learn to the same extent. The different timelines of the evaluation also relates to the comparison of the researcher surveys and this has to be taken into consideration when looking at the quantitative data. However, comments on the evidence base provided by the evaluation reports – or lack thereof - have been included in this Synthesis where appropriate. The Review was conducted by a team of only two consultants with support by IEA that necessarily limited its scope. Due to their professional background and their own involvement in the CRP evaluations, it is unavoidable that the team members are more familiar with some CRP programs than with others. Nevertheless, the approach outlined in the previous section aimed to ensure that the findings from all CRP evaluation reports were systematically used for this Synthesis.

## 1.6 OVERVIEW OF THE REPORT

This report is structured as follows: Chapter 2 provides a brief overview of the CRPs. More details are provided in Annex 1. Chapters 3-9 present the findings of the review on each of topics that have been selected. Chapter 10 presents the conclusions and lessons learned.

14 Review of CGIAR Research Programs Governance and Management

15 Roth, C. and Zimm, S. (2016): Synthesis and reflections from five CRP evaluations - Report on a meta-analysis of five CRP evaluations.


# 2. OVERVIEW OF THE CRPS

The CGIAR reform process led to the establishment of 16 CRPs. One CRP deals with "Managing and Sustaining Crop Collections (Gene Banks), which is not included in this Synthesis. The other 15 CRPs are listed in Table 2. The table displays the grouping of CRP programs that is commonly used in CGIAR and also applied in this report. As shown in Table 2, we refer to the seven CRPs that focus on improving the productivity of major crops, fish and livestock as the "Commodity CRPs". The three CRPs that deal with agricultural systems are referred to as "Systems CRPs". The three CRPs that deal with natural resource management (NRM) of water, lands and forests and with climate change are referred to as "NRM CRPs". The CRPs on Policies, Institutions, and Markets (PIM) and Agriculture for Nutrition and Health (A4NH) form the remaining group. In some sections, this report only distinguishes between "Commodity CRPs" and "Non-commodity CRPs." As shown in Table 2, the total funding that the CRPs had received (includes W1/2/3/ and bilateral) from their start up to 2015 ranged from USD 61 million to 458 USD million. Table A 1 in Annex 1 displays the Centers that are involved in each CRP. Their number ranges considerably from two to fifteen.

Table A 2 in Annex 1 gives an overview of the objectives of each CRP and lists its main components, which are now uniformly referred to as "Flagship Projects" (FPs). When the original CRP proposals were developed, different terms were used, such as research themes and geographic hubs. All CRPs underwent some type of restructuring during the evaluation period to end up with the Flagship Project structure that is reflected in Table A 2. In most cases, these Flagship Projects correspond to the different components that the CRPs had implemented during the first phase. Hence, Table A 2 serves as an

overview of the different topics covered in the CRPs. In this report, we use the current term "Flagship Projects", even though the CRPs might have referred to the respective thematic or geographic areas using different names at different times of implementing their research agenda.

TABLE 2: OVERVIEW OF THE CRPS

| *Group of CRPs** | Name of CRP<br>CGIAR Research Program on | Abbreviation | Lead Center | Year started | Total funding in USD million** | *** |
|---|---|---|---|---|---|---|
| *CRPs to improve the productivity, profitability, sustainability, and resilience of entire farming systems (Systems CRPs)* | Dryland Systems | DS | ICARDA | 2013 | 154 | CRP |
| | Integrated Systems for the Humid Tropics | HT | IITA | 2012 | 109 | CRP |
| | Aquatic Agricultural Systems | AAS | WorldFish | 2011 | 109 | IEA |
| *CRPs to improve yields and profits of crops, fish, and livestock (Commodity CRPs)* | Wheat | WHEAT | CIMMYT | 2012 | 147 | IEA |
| | Maize | MAIZE | CIMMYT | 2011 | 272 | IEA |
| | Global Rice Science Partnership | GRiSP | IRRI | 2011 | 458 | IEA |
| | Roots, Tubers and Bananas | RTB | CIP | 2012 | 265 | IEA |
| | Livestock and Fish | L&F | ILRI | 2012 | 110 | IEA |
| | Grain Legumes | GL | ICRISAT | 2012 | 178 | CRP |
| | Dryland Cereals | DC | ICRISAT | 2012 | 61 | CRP |
| *CRPs to improve sustainability and environmental integrity, adapt to and mitigate climate change (NRM CRPs)* | Water, Land and Ecosystems | WLE | IMWI | 2012 | 227 | IEA |
| | Forests, Trees and Agroforestry | FTA | CIFOR | 2011 | 311 | IEA |
| | Climate Change, Agriculture and Food Security | CCAFS | CIAT | 2011 | 305 | IEA |
| *CRP to improve policies and markets* | Policies, Institutions, and Markets | PIM | IFPRI | 2012 | 340 | IEA |
| *CRP to improve nutrition and diets* | Agriculture for Nutrition and Health. | A4NH | IFPRI | 2012 | 300 | CRP |

* Label used in this report for the respective group of CRPs indicated in brackets.
** Total funding from start of CRPs (2011) until the end of 2015.
*** IEA: Evaluation commissioned by IEA; CRP: Evaluation commissioned by CRP.

Source: Based on http://www.cgiar.org/our-strategy/cgiar-research-programs/ (accessed March 10, 2016)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# 3. RELEVANCE AND PRIORITY SETTING

## 3.1 PRIORITY SETTING IN THE CONTEXT OF THE SRFS

Priority setting is essential for ensuring the relevance of agricultural research programs and for allocating funds in the most effective way. CGIAR has a long history of good intentions but limited success in developing appropriate approaches for priority setting. The then CGIAR Science Council led a major effort at the System-level in the early 2000s. Applying a process that combined nine different priority setting approaches, five overall System Priorities with 20 sub-priorities were identified[16]. Based on a comprehensive evaluation, the Independent Review of the CGIAR System[17] concluded that the System Priority exercise did not result in strategic targets for outcomes and impacts that would deliver the CGIAR Mission. The development of a SRF in 2011 for the entire CGIAR was an important element of the reform that aimed to address this shortcoming. The SRF emphasized the importance of priority setting as follows (p. 80):

> *"Priorities must be set in a clear and transparent manner, based on agreed criteria.[… ] Ideally, priorities will be driven not by individual donors' interests but rather by scientific analysis and best judgments on the research activities most likely to contribute to the CGIAR's vision and desired outcomes "*

16 Science Council (2005): System Priorities for CGIAR Research 2005-2015.

17 CGIAR Independent Review Panel (2008)

In the process of developing this first SRF, a pilot exercise in priority setting was carried out across the seven CRPs proposed at the time, based on the Analytical Hierarchy Process, a structured process widely used in making complex decisions[18]. However, funders and stakeholders did not accept the results of this approach. In the end, the number, type and funding of CRPs was the outcome of negotiations among Centers and funders. Resources were allocated among CRPs based on budget requests mostly tied to legacy research, combined with approval of the CRPs at a time of rapidly rising CGIAR funding from both W1/W2 funds and W3/bilateral funds. Nonetheless, lack of transparency at the System level in allocating W1/W2 funds across CRPs has become a source of tension as the phase of rapid growth has peaked and CRPs find themselves with very different levels of W1/W2 funds (See Section 9.3). The WHEAT evaluation criticized lack of transparency in these allocations.

The need to improve prioritization, however, remained on the reform agenda. The ISPC developed a White Paper on "Strengthening the SRF through Prioritization"[19], which became a companion paper of the SRF of 2011. The White Paper reviewed methods and experiences with priority setting at different levels of CGIAR. It pointed out that past efforts to set priorities at the system level have not been successful, partly due to the power structure of the system. The paper concluded that "an effort to deter-mined prioritized linkages from high level objectives to ground level activities does not seem desirable." (p. 34). Accordingly, priority setting focused on the CRP level. Even so, the SRF 2011 (p.4) recommended putting in place a more sophisticated approach of priority-setting for the next round of CRPs.

> *"Moreover, a new SRF will have to be developed in the foreseeable future …. The new document should devote more analysis, and certainly a much greater amount of time, than was possible in this revision of the SRF, to define the best integration between the SLOs and the core competencies of the CGIAR. The SRF should be at the forefront on how the international community should allocate resources for international agricultural research."*

The new SRF of 2016 is based on a results-based approach, which is expected to guide priority setting (see also White Paper of the ISPC (2013) on his approach). The key element is the formulation of IDOs and sub-IDOs, which are expected to contribute to the overarching SLOs. The SRF formulated system-level IDOs and Sub-IDOs, and the CRPs are expected to develop CRP-specific ones. These IDOs and Sub-IDOs are to be derived from the development of impact pathways and associated ToC (see Chapter 5). In principle, the merit of this approach is its consistent results-orientation. However, identifying IDOs and sub-IDOs is not yet a priority setting exercise. Another analytical step is required: One needs to decide what priority should be assigned to each of IDOs and Sub-IDOs. While possible methods and challenges for this step are discussed in detail in the ISPC White Paper on Prioritization, this step was not included in the SRF of 2016. Hence, the above recommendation was not implemented.

The SRF 2016 lays out eight areas of research as "priorities" (p. 4), but they are so generic that they provide little guidance either to choice of a CRP portfolio or the relative importance among CRPs within a portfolio. Recognizing this limitation, the Fund Council endorsed the SRF subject to the condition that a priority setting exercise would be conducted[20] (p. 1). It was decided to use a qualitative prioritization

18 Von Braun et al. (2009)

19 ISPC (2012 a): White Paper on Strengthening Strategy and Results Framework through Prioritization.

20 ISPC (2015): Qualitative Prioritization Exercise – Results Of A Pilot Stud.

approach, and ISPC undertook a pilot exercise to elicit donor and expert opinions[21]. According to its own assessment, the ISPC did not consider this process to be robust, since eliciting opinions without prior in-depth analysis, group discussion and agreement on criteria is methodologically problematic[22]. ISPC (p. 11) hence recommended a further elaboration of the methods to be used to prioritize IDOs, which may involve a combination of qualitative and quantitative methods (p. 21). PIM through its Global Futures project, has built considerable capacity for such in-depth analysis at the commodity level, and for some aspects of NRM such as water and climate change. The PIM proposal for the second round states as one of its objectives that its foresight models and tools should be used for decision making in CGIAR Centers and programs, without however specifying their role in priority setting[23].

#### EMERGING LESSON ON RELEVANCE AND PRIORITY SETTING ACROSS CRPS

The emerging lesson from this experience is that, even considering the long history and rich experience of CGIAR in using a wide variety of qualitative and quantitative prioritization methods, the time and the resources required to develop a robust approach for setting priorities for IDOs should not be underestimated in developing future SRFs. Further, the default to not setting priorities at the System level is the status quo in allocating funds across CRPs that represents an implicit set of priorities of the System.

## 3.2 PRIORITY SETTING WITHIN CRPS

### RELATION TO SLOS AND IDOS

All the evaluations conclude that the CRPs align well with the CGIAR SLOs. As indicated above, this alignment is being operationalized through a set of IDOs that have been developed to correspond to each SLO. As expected, all of the commodity CRPs have developed IDOs relating to rural poverty reduction (mainly through increased productivity and better access to markets), and food security (through improved access to food and lower and more stable food prices). All but Dryland Cereals have IDOs on sustainable natural resources management, and all but WHEAT have IDOs on nutrition (nutritional components of WHEAT and other CRPs, particularly bio-fortification were included in A4NH). In the case of L&F, the evaluation did recommend a much stronger focus on the environmental SLO (Sustainable Management of Natural Resources). None of the commodity CRPs selected a policy-related IDO, possibly because most policy related research is now mapped to PIM.

21 See above

22 The pilot study consisted of a survey, in which 19 donor representatives participated, and an assessment conducted by 7 experts. Both groups ranked the IDOs and Sub-IDOs on a scale from 1-5. One limitation of the donor survey, apart from the small number of respondents, was lack of clarity whether they should rank sub-IDOs in terms of their organization's overarching priorities for all development funding or whether priorities were reported specifically for research funding or even funding for agricultural research (ISPC, 2015: 7).

23 See CGIAR Research Program on Policies, Institutions, and Markets (PIM) - Full proposal for Phase 2 (2017-2022), March 31; Flagship-Level Narratives Document, p. 4.

TABLE 3: SUMMARY OF MAIN IDOS CLASSIFIED ACCORDING TO EXTENSION PROPOSALS 2015-2016 BY CRP

| Common CRP IDOs | DS | HT | AAS | WHEAT | MAIZE | GRISP | RTB | L&F | GL | DC | WLE | FTA | CCAF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Productivity | | ✓ | ✓ | ✓ | ✓ | ✓+ | ✓ | ✓+ | ✓ | ✓ | ✓ | ✓ | |
| 2. Food security | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 3. Nutrition | | ✓ | ✓ | | 2nd | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 4. Income | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5. Gender & empower | ✓ | ✓ | ✓ | ✓ | 2nd | ✓ | CC | CC | CC | CC | ✓ | ✓ | ✓ |
| 6. Capacity to innovate | ✓ | ✓ | ✓ | ✓ | 2nd | ✓ | | | | | | | ✓ |
| 7. Adaptive capacity | ✓ | | ✓ | | 2nd | ✓ | | | | ✓ | ✓ | | ✓ |
| 8. Policies | | | | | | | ✓ | ✓ | | | | ✓ | |
| 9. Environment | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | CC | CC | CC |
| 10. Future options* | | | ✓ | | | ✓ | ✓ | | | | ✓ | ✓ | |
| 11. Climate | ✓ | | | | 2nd | ✓ | | | | | | | ✓ |
| Other | | | | | | | | | | | | | |

Notes: 2nd = Second tier IDO (as opposed to primary IDOs), CC = cross cutting (means that gender does not have a separate IDO but is integrated into the other IDOs), ✓+indicates more than one IDO for category, Other = IDOs which are not included in the list of common IDOs. Source: CRP Extension Proposals 2015-2016.

*Future options refer to "Greater resilience of agricultural/forest/water-based/mixed-crop, livestock, aquatic systems for enhanced ecosystem services"

The CRPs for the major cereals, GRiSP, WHEAT, and MAIZE, all claim relevance to SLOs based on their critical role in global food security. Evaluations also endorsed the importance of other CRPs as essential for the SLOs, with RTB emphasizing the role of their staples for food security, Legumes for nutrition and sustainable soil management, and Dryland Cereals for resilience in marginal environments. Aspirational targets were set for the IDOs in the 2015-2016 extension, and these were broadly endorsed as feasible by the evaluations (e.g., GRiSP and MAIZE). However, it is still early days for the CRPs and the evaluations to assess progress toward the IDOs. Rather the focus of the evaluations was on the realism of the ToC discussed below in Chapter 5.

The IDOs of the System CRPs broadly mapped into a similar set of IDOs as the commodity CRPs although only Dryland Systems has an IDO targeting food security. Again none has targeted a policy related IDO and only Humidtropics targets an environmental IDO. This set of CRPs has also explicitly selected a gender IDO, rather than making gender a cross cutting issue

The remaining five CRPs on the right side of Table 3 have a more diverse set of IDOs as would be expected given their heterogeneity. The evaluation of CCAFS concludes that the CRP address 'highly relevant global goals'. Likewise FTA closely aligns with global targets on land use, deforestation and climate change. Although three of these CRPs (WLE, CCAFS and FTA) focus on natural resources and the environment, they have not selected the common environment IDO directly but address other IDOs which contribute to the environment.[24]

**24** CCAFS through its IDO on climate change (mitigation), WLE through its IDO on resilience and FTA through its IDOs on biodiversity and ecosystem services as well as the IDO on policies for sustainable and equitable NRM.

## PRIORITY SETTING PROCESSES

Commodity CRPs. As outlined above, CGIAR prior to the reforms had a long track record of analytical approaches to priority setting within the commodity Centers[25]. With the exception of CIP, much of this work was de-emphasized as the role of bilateral funding increased and as the mandates of the Centers expanded to NRM where priority-setting methods were less well developed. As outlined in Section 3.1, one of the goals of the CGIAR reform was the development of new approaches to priority setting that were expected to be closely linked to the emerging results-based management approach.

ISPC commentaries on the proposals in 2011-12 and again in the new round of 2015 have consistently called for stronger efforts to define priorities within the CRPs. Only two of the CRPs did carry out detailed analyses for priority setting. GRiSP conducted separate exercises for Asia and Africa but only the Africa results seemed to have been internalized in GRiSP through the AfricaRice Strategic Plan[26]. RTB also conducted a priority assessment for each of its five crops drawing on CIP's strong reputation in this area. However, the evaluation noted that the results have been minimally used to allocate resources.

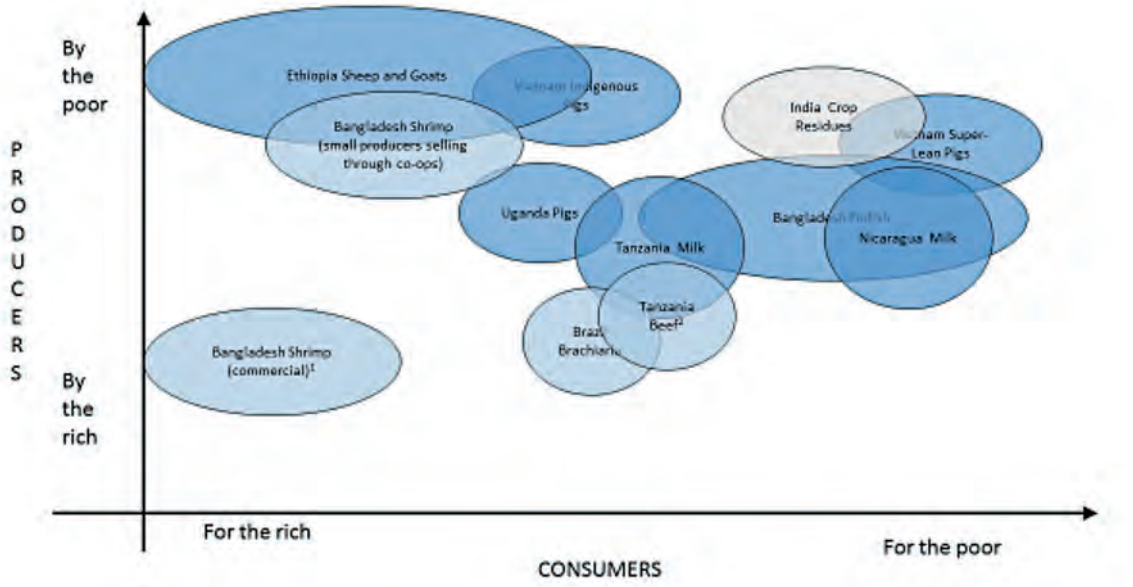
More targeted studies have also been carried out for specific CRP flagships, such as the extensive GRiSP studies on consumer preferences to orient selection of priority quality traits and design of post-harvest research. In other cases, especially L&F, the evaluation strongly recommended priority setting to focus on 'game changing' research activities and weed out a host of activities with limited impact potential.

Several CRPs (GRiSP, L&F, MAIZE, WHEAT) noted a tension between focusing on poor producers versus poor consumers. While poor consumers were recognized as targets for the CRPs, most of the design activities, and especially bilateral projects, emphasized poor producers. L&F went further to define the target as 'by [poor producers] and for the poor [consumers]'. The evaluation found this approach useful but indicated that more efforts were required to adequately address potential tensions between targeting poor producers versus consumers in the ToC. This evaluation produced an insightful graphic on the position of value chains in L&F to illustrate the trade-offs (Figure 2). The relative neglect of poor consumers who are increasingly urbanized has major implications for the targeting of research investments to favoured areas that produce the surplus versus marginal areas and the balance between a focus on market-oriented smallholders versus subsistence-oriented smallholders.

25 Raitzer, D.A. and Norton, G.W. eds. (2009): Prioritizing agricultural research for development: experiences and lessons.

26 AfricaRice (2011): Boosting Africa's Rice Sector. A research for development strategy 2011-2010.

FIGURE 2: MAPPING OF L&F VALUE CHAINS IN TERMS OF TYPE OF PRODUCERS AND CONSUMER




Source: L&F evaluation.

Within these limitations, most CRPs have selected targeted geographies sometimes based on quite detailed geospatial databases combining agro-ecological and social and economic variables. However, to the extent that CRPs target poor producers, there is little evidence that they have prioritized poverty 'hotspots' with the best chance of meeting the IDOs related to the first SLO on poverty reduction. In short, there is little analysis to date within the CRPs to find the best ways of meeting the IDOs.

### SYSTEM CRPS

These CRPs were expected to focus on populations of high poverty incidence using more bottom-up approach to priority setting. A first step in priority setting is the choice of research locations and target populations - only the Humidtropics evaluation addressed this issue by reviewing the alignment of the program with national strategies. In other cases, it seems that legacy research was a major factor in site selection and although these may have been 'poverty hotspots', this was not reviewed by the evaluations.

Two of the systems CRPs employed bottom-up participatory processes to set priorities. Dryland Systems was the exception where the evaluation implied that priorities tended to be top-down. Humidtropics used a "dynamic community facilitation approach" for local stakeholder engagement that emphasized empowerment especially of women and youth. The evaluation endorsed the use of tools such as Rapid Appraisal of Agricultural Innovation Systems in partnership with Wageningen UR to combine insights of communities and scientists in setting the research agenda. AAS employed a Community Lifelong Competence Process that also emphasized community engagement. The evaluation was somewhat critical of this approach that seemed to ignore a much wider community of practices on participatory approaches. Nor was it clear that the approach provided a clear set of priorities for addressing priorities for the poor. As a result the evaluation noted that the process did not result in a research program that was truly inter- disciplinary or systems-oriented.

### OTHER CRPS

The other CRPs (A4NH, CCAFS, FTA, PIM and WLE) did not attempt formal priority setting analyses. PIM that allocated most of its W1/W2 funds competitively and did set up specific criteria for allocating those funds although the evaluation found that the process still lacked transparency. Also the objective of PIM's Flagship 1 was to "improve prioritization of the global agricultural research effort for developing countries (including centers)", but the evaluation could not confirm the outcome.

At least two of these evaluations included recommendations to improve priority setting. The A4NH evaluation noted that A4NH - "will need to develop a clear process and criteria for prioritization" in order to transparently arrive at a core research program of a limited number of "centerpiece' areas of research using both quantitative and qualitative approaches. CCAFS urged stronger priority setting in selecting countries with the best prospects of influence and to target most climatically vulnerable groups. WLE provides a framework for Ecosystem Services and Resilience for overall priorities but the evaluation found that this needed further work to mainstream in the CRP. Finally the FTA evaluation provided team perspectives on how priorities should be shifted in the future rather than on processes for generating priorities.

## ROLE OF FUNDING AND LEGACY RESEARCH

Most CRP managers were constrained in allocating CRP resources by legacy research and bilateral projects many of which started before the CRP (see also Chapter 5). Legacy research necessarily dominated the agenda in the early years, and researcher surveys consistently perceived that donors through bilateral projects were highly influential in setting priorities. However, this may be less of a problem than it seems - the evaluations in reviewing these projects found few that did not map clearly to the IDOs (e.g., MAIZE and WHEAT). Nevertheless, the evaluation of FTA and WLE found less congruency between bilateral projects and CRP strategic priorities. The main downside of bilateral projects has been the focus on country-specific activities with limited IPGs and short-term payoffs favoured by donors (discussed below).

CRP managers' main tool for influencing priorities is through the allocation of W1/W2 funding since bilateral projects are nearly all under Center management. CCAFS with the highest share of W1/W2 funds had most flexibility to use these funds to influence the research agenda. Almost all evaluations highlighted the critical role of W1/W2 funds in filling high priority gaps in the overall CRP program around bilateral projects. W1/W2 funds have also been critical in enabling CRPs to respond to new and urgent priorities such as Maize Leaf Necrosis in East Africa. As the share of W1/W2 funds as part of total funding (including bilateral funds) declined in 2015 and became more uncertain (see Chapter 8.3), many evaluations noted that W1/W2 funds were best used for critical gap filling as needed in the short term rather than providing long term stable support to strategic research priorities. The common approach of using a formula to allocate W1/W2 funds across Centers within a CRP also reduces the opportunity to use W1/W2 funds to shift resources toward higher priorities. Allocation of at least some W1/W2 funds competitively (as in A4NH, GRiSP, PIM and WLE) provided the best opportunity to address strategic priorities but this was curtailed in 2015 by the decline and rising uncertainty of W1/W2 funds.

## DEMAND SIDE

All CRPs have used demand-side approaches to allow users to express priorities. This is most evident in the Systems CRPs as discussed earlier. Stakeholder consultations have been widely used including formal surveys of national partners. Most evaluations found that national partners broadly endorsed the CRP strategic frameworks although some advanced national programs feel they should be more closely consulted in the design phase (GRiSP, WHEAT). The evaluation of FTA surveyed partners and "overwhelmingly found FTA relevant to partners". On the other hand, PIM's survey of partners found the need for more bottom-up approaches to improve demand side relevance.

The CRPs also have a range of institutionalized governance mechanisms to influence priorities. Many of these are highly influential, especially where the members contribute funding, such as the Latin American Irrigated Rice fund. A wide variety of regional and national bodies including regional crop networks and consortia are also influencing the agenda. However, few of these are strong enough to exert independence from the CRP that is providing most of the funds, especially in Africa. Most evaluations also suggested that the governing body for the CRP should become more engaged in setting strategic priorities for the CRPs (see Chapter 8.2).

## COMPARATIVE ADVANTAGE

The comparative advantage of CGIAR needs to play an important role in the priority setting of the CRPs, and several evaluations commented on this issue. CGIAR has long recognized several comparative advantages, including the world's largest repository of genetic resources, global data bases and knowledge hubs, spatially dispersed research infrastructure, global and regional research networks, agreements with governments, and a reputation as an honest broker (see also Roth and Zimm, 2016: 12ff). With these assets it has the capacity to mount research programs on globally important programs such as pests and diseases, deforestation, and trade policy and generate spillovers across many countries. The evaluations universally endorsed these comparative advantages and IPGs. The evaluation of FTA made an explicit analysis of the international public good (IPG) element of FTA research and concluded that it was strongly positive.

The great majority of evaluations, however, noted that bilateral projects that emphasize short-term impacts to meet donor targets have tended to push CGIAR into the territory of national research systems and even extension without evident IPGs (AAS, CCFAS, GRiSP, FTA, L&F, MAIZE, PIM, RTB, WHEAT,) (see also Chapter 7.2). This is more so for research on policies and institutions, natural resources management and value chains that is generally location specific. In order for this research to generate IPGs the evaluations noted the need to orient the work to testing new tools and methods with potentially wider applicability, or to be structured with an overall goal of synthesizing findings across diverse locations into a global or regional knowledge base (FTA, L&F) or establishing global or regional benchmarks (GRiSP). However, the evaluations did note that weak capacity in Africa may require that CGIAR engage more at the national level in order to build capacity and generate impacts.

At least two evaluations, MAIZE and Dryland Cereals, also highlighted the growing role of private Research and Development (R&D) in hybrid research or breeding for commercial purposes (e.g., brewing), and the need for the CGIAR to carefully monitor these developments in order to stage an orderly withdrawal from these markets (see also Chapter 7.1). To the extent that resources for these types of

research are fungible, a closer focus of the CRPs on IPGs would free resources for strategic research in which CGIAR seems to be underinvesting such as disease monitoring (GRiSP, WHEAT). These findings also suggest closer attention in long-term impact pathways in the ToC to development partners and capacity building.

### EMERGING LESSON ON RELEVANCE AND PRIORITY SETTING AT CRP LEVEL

The lesson that emerges from the evaluations is that the CRPs is that the need for efforts to define priorities within CRPs remains strong and that the efforts to respond to this need have still been evolving during the evaluation period, with variations across CRPs. New approaches to use bottom-up demand-side approaches to set priorities have been applied, and the identification of IDOs has been an important step to ensure relevance. However, the evaluations indicate that more analysis is required within the CRPs to find the best strategies on how to meet the IDOs, especially if important strategic questions – such as focusing on poor producers versus poor consumers, or identifying poverty hot-spots – remain unresolved.


# 4. QUALITY OF SCIENCE

To synthesize the findings on Quality of Science, a framework developed by IEA is applied, which distinguishes between the quality of inputs, processes and outputs[27].

## 4.1 RESEARCH INPUTS

### QUALITY OF RESEARCH LEADERS

Qualified and motivated researchers are the most important asset of any research program. Most evaluations concluded - based on qualitative information from their interaction with research staff and management - that the CRPs have highly motivated and competent staff. Moreover, many evaluations point out that the CRPs are home to exceptional and highly productive researchers, who are international leaders in their respective fields. This finding is supported by the figures regarding the highest h-index of CRP research staff[28].

Most evaluations paid special attention to the scientific standing of the leaders of program components, such as Flagship leaders and regional leaders. Ten evaluations included some form of analysis

27 This framework was also used in the synthesis of the first five evaluations (Roth and Zimm 2016).

28 The h-index measures the number N of publications of a person that has been cited at least N times. For example, a researcher with an h-index of 10 has published 10 articles that were each cited at least 10 times. The h-index does not take into account the number of other articles that the researcher may have published, but that were cited less frequently. Due to differences in publication practices, h-index values are not comparable across disciplines. They tend to be generally lower in the social sciences than in the natural sciences.

of the h-index to evaluate the quality of research leaders[29]. The number of researchers included in this analysis varied from 18 to 122. Only the GRiSP evaluation conducted a systematic benchmarking of h-index levels and concluded that GRiSP research leaders, in particular those in AfricaRice and CIAT, had an h-index below the average of research leaders in non-CGIAR institutions who work in comparable fields. The other evaluation teams presented a breakdown of CRP research leaders by h-index ranges and interpreted the findings based on their expectations in the respective field of research. On that basis, the MAIZE, WHEAT and WLE evaluations found the scientific standing of the CRP research leaders to be acceptable or par with that of advanced agricultural research institutions. CCAFS, FTA and L&F noted lower h-index levels for some component or regional leaders. The PIM and RTB evaluations found that the h-index analysis indicated a considerable variation in the scientific standing of research leaders across Centers. The evaluations of Dryland Cereals and Dryland Systems found that the majority of research leaders had relatively low h-index levels.

H-index levels are not comparable across disciplines, but one may consider the percentage of research leaders that have no h-index as an indicator that is comparable. This percentage ranges from 4% in GRiSP and FTA to 17% in RTB. There is still the need to be careful in interpreting this figure, because the set of research leaders included in the h-index analysis differs across CRPs. Moreover, some types of program leaders (e.g. leaders of value chain research in L&F and regional program leaders in CCAFS) were found to have job profiles that require different skills, such as managing stakeholder interaction.

### SKILL MIX AND ALLOCATION OF RESEARCH STAFF

Science quality depends not only on the capacity of research leaders and individual researchers, but also on the allocation of staff resources and the composition of research teams. The following picture emerges from the evaluations:

### LEVEL OF EXPERIENCE AND ALLOCATION OF STAFF

The ratio between senior and experienced to junior and less experienced staff is important to ensure appropriate guidance, mentoring and supervision of research. Some evaluations noted a comparatively large share of young researchers, or researchers with limited experience in the respective CGIAR Center, which is most likely the consequence of the large increase in funding in the first years of the reform. An example is MAIZE, which noted that 50% of staff had less than two years' experience at CIMMYT and identified the challenge to properly mentor the new recruits. This challenge was also identified in the WLE and AAS evaluations. In the case of AAS, the challenge was particularly pronounced because less than one third of the AAS researchers had PhD level training, and those were concentrated at Headquarters. The evaluation found that research staff was spread too thinly over the many thematic areas and research sites. L&F noticed a similar problem.

29 None of the evaluations performed an analysis of h-index levels of all research staff. Some evaluations refer to a study by Elsevier (commissioned by the Consortium), which aimed to conduct an h-index analysis of all CRP researchers, not only the research leaders (Elsevier, 2014). However, as noted by several evaluations, the findings were not considered to be representative of the respective CRPs due to problems of adequately matching researchers and CRPs.

## COMPOSITION AND SKILL MIX OF RESEARCH TEAMS

One goal of introducing CRPs was the intention to better combine researchers with different skills in multidisciplinary teams to increase the impact of CGIAR research. The evaluations, including the staff surveys that they conducted, indicate that this goal has only partly been achieved.

One theme that emerges from the evaluations is variable success regarding the inclusion of social scientists into the research themes. The MAIZE evaluation positively noted the investment in social scientists and commended the program for the ability of its socio-economists to publish multi-disciplinary research in high quality journals. The Humidtropics Evaluation also found that there is a good involvement of the different scientific disciplines in this CRP, including social sciences, management biological sciences. In contrast, a considerable number of evaluations (WHEAT, Dryland Cereals, L&F, FTA and Dryland Systems) found that the capacity for social and economic sciences was not sufficient, which resulted in deficits regarding targeting, program design and program implementation. Most of the PIM researchers are social scientists, but the evaluation criticized that the research is dominated by economic perspectives, and that the participation of sociologists, anthropologists, and the political scientists was very low.

Several evaluations noted the lack of specific skills in essential areas of the respective CRP portfolio. These include lack of experienced breeders for plantain in West Africa and potato in East Africa and lack of expertise on seed systems in RTB; deficits in systems research capacity in AAS and Dryland Systems; limited capacity for participatory action research in AAS; and a lack of social scientists with qualitative skills for conducting research on social equity in A4NH.

## RESEARCH INFRASTRUCTURE

Eight evaluations commented on quality of research infrastructure. The assessments are mostly based on expert observations. An important insight that emerges from the assessments is that CRPs with good access to infrastructure (e.g., GRiSP, WLE, A4NH) largely benefited from the prior investments of the Lead Centers and from collaboration with ARIs. Researchers based in locations that had weaker research infrastructure prior to the reform, especially in Sub-Saharan Africa, do not seem to have gained better access to infrastructure through the CRPs (see, e.g. Dryland Cereals, RTB and WHEAT,). Several evaluations (A4NH, L&F and WLE) expressed concerns about the lack of continued long-term investment in research infrastructure by the CRPs (see also Section 8.3).

### EMERGING LESSONS ON RESEARCH INPUTS

Several lessons emerge from the evaluations regarding the quality of research inputs. Overall, the CRPs have been able to engage research leaders of adequate qualification and scientific standing to lead the wide range CRP research activities at a globally competitive level. The CRPs are home to highly productive world-class researchers in a range of agricultural research areas. However, there is considerable variation in staff quality across CRPs, which partly reflects the traditional strengths and weaknesses of the participating CGIAR Centers that had been documented in earlier

reviews of the CGIAR centers. The evaluations suggest that, in addition to deficits in some very specific research areas, the CRPs have overall not yet been very successful in improving the disciplinary mix of their researchers, even though that was one of the expected benefits of creating CRPs. Likewise, the CRPs had, so far, limited success building substantial research staff capacity in those "non-traditional" research areas that the CRP portfolio aimed to strengthen within CGIAR, such as farming systems research and participatory research. The quality of research infrastructure, another major input of research quality, is strongly influenced by previous investment levels by the Centers. Access of researchers in regions that have been traditionally disadvantaged did not seem to have benefitted much from participation in the CRPs in terms of research infrastructure. There are also serious concerns regarding the lack of long-term investment in research infrastructure, a challenge that needs to be addressed by the CGIAR's governing bodies.

## 4.2 RESEARCH MANAGEMENT PROCESSES

### PROCESSES FOR CONTROLLING QUALITY OF SCIENCE

With the exception of CCAFS, all evaluations that dealt with processes for controlling quality of science found that these processes were implemented at the Center level rather than the CRP level. Several evaluations commented positively on the instruments that the Centers used to control quality of science. These include Center-commissioned external reviews (GRiSP, RTB, WHEAT), the use of standard manuals and protocols for large-scale data collection processes (MAIZE), the development of a framework for scientific quality by CIFOR, and the use of internal peer review by IFPRI. Several evaluations found that quality assurance processes differed considerably between the participating Centers (e.g., A4NH, CCAFS, L&F, PIM), indicating that the potential of the CRPs for harmonizing research quality control and for addressing existing deficits remains underutilized. The CGIAR System could play an important role in setting standards for science quality and research management, as recommended by A4NH.

Applying international standards of ethical review is an important aspect of controlling for quality of science. The 2009 Stripe Review of Social Sciences in CGIAR found major deficits in this respect[30]. The A4NH evaluation out that IFPRI has strong processes for this purpose, including an Institutional Review Board and structured ethics training of staff. Still, the A4NH evaluation noted some deficiencies on ethical conduct of research projects in the field. The other evaluations did not address this issue; hence is unclear whether the situation has improved. Considering that CGIAR is expected to follow international standards of ethical review of research, future evaluations of quality of science should address this question. Moreover, as recommended by A4NH, CGIAR could set standards at the system-level for ethical review and training of research staff.

### STAFF PERCEPTIONS ON RESEARCH MANAGEMENT

Table 4 below displays the average values of the responses to the survey question as to how well the respective aspect was managed. Two findings emerge from the evaluations that call for attention. One is

30 CGIAR Science Council (2009) Stripe Review of Social Sciences in the CGIAR.

the management of personal incentives for high quality research: This aspect of research management received the lowest ratings across the CRPs in which this survey question had been asked. This finding is not entirely consistent with the personal observations of the evaluation teams that the researchers they interacted with appeared highly motivated. This may either be due to an interviewer bias, or to the fact that the researchers are motivated by other factors than incentives created by CRP management. The second finding relates to encouragement of innovative thinking and allowing for learning from failure. AAS scored best in this regard, but a considerable share of researchers in other CRPs felt that learning from failure was not encouraged in their CRP. Considering the role of these factors in ensuring science quality, this topic requires further attention.

TABLE 4: STAFF PERCEPTIONS OF RESEARCH MANAGEMENT*

| Aspect of research management | AAS | WHEAT | MAIZE | GRiSP | RTB | L&F | WLE | CCAFS |
|---|---|---|---|---|---|---|---|---|
| Strategic use of grants | | 4.1 | 4.1 | **4.4** | 3.9 | | 4.0 | |
| Allocation of competences and appropriate skill mix to research teams | 4.0 | 3.6 | 4.0 | **4.3** | 3.5 | 3.8 | 4.0 | 4.1 |
| Infrastructure needed for high quality science | 3.6 | **4.1** | **4.1** | | | | | |
| Availability and quality of technical facilities/equipment for high quality science | 4.1 | 4.1 | 4.2 | **4.3** | 3.7 | 4.1 | 4.1 | 4.1 |
| Availability and quality of research support staff | 4.1 | 4.0 | 4.0 | **4.4** | 3.6 | 4.1 | 4.3 | 4.3 |
| Research data [and knowledge] management | 3.6 | 3.8 | 4.1 | **4.6** | 3.5 | 3.7 | 4.1 | 4.1 |
| Quality assurance processes such as internal peer feedback | 4.0 | 3.8 | 3.8 | **4.4** | 3.3 | 3.7 | 4.2 | 4.0 |
| Learning and knowledge management | **4.3** | 4.0 | 3.8 | | | 3.8 | | 4.2 |
| Encouragement for learning from "failure" | **4.6** | 3.4 | 3.6 | 3.5 | 3.0 | | 3.4 | |
| Encouragement of innovative thinking and risk-taking | **4.6** | 3.9 | 4.1 | 4.0 | 3.3 | 3.5 | 3.8 | 4.1 |
| Performance evaluation incentives for high research quality | 4.2 | 3.9 | **4.3** | **4.3** | 3.4 | | 3.7 | |
| Personal incentives for high research quality | **3.8** | 3.5 | 3.5 | | | 3.3 | | **3.8** |

* Cells display average rating of responses on a scale from 6 (aspect is very well managed) to 1 (no attention); Best rating displayed in bold.

Source: IEA researcher surveys, compiled by Sophie Zimm

## DATA MANAGEMENT

Data management is an important topic for CGIAR, in view of its comparative advantage to generate research-based data on a wide range of countries and agro-ecologies and make them publicly available. The CGIAR Consortium approved a "CGIAR Open Access and Data Management Policy" in 2013[31]. Few positive examples can be found in the evaluations that the CRPs have promoted progress in this area. One is the rice information system of GRiSP that combines geospatial data on agroclimatic and socio economic variables at a highly disaggregated level. The evaluation indicates, however, that the tool is not fully used. The L&F also noted some success in making information widely available.

All other evaluations discuss the reasons why the CRPs were not better able to use the opportunity of sharing data across Centers (Dryland Cereals, MAIZE, RTB, WHEAT, WLE). Problems include lack

31 CGIAR Consortium Board (2013): CGIAR Open Access and Data Management Policy.

of awareness regarding the CGIAR policy on data management, lacking mechanisms to capture project data at program level, a culture of not sharing data across Centers, challenges to manage an increasing diversity of data and lacking processes to ensure data quality prior to entering them into a joint repository.

### EMERGING LESSONS ON RESEARCH MANAGEMENT

The overall picture that emerges from the evaluations is that research management processes, especially those that aim to ensure quality of science, have remained the domain of the Centers rather than being managed at CRP level. Considerable differences continue to exist between Centers in this respect. The implications for the CRPs are not straightforward, since ***establishing separate processes for ensuring quality of science at the CRP level, in addition to maintaining processes at the Center level, would lead to duplication of efforts***. This is certainly a typical challenge of matrix management that requires further consideration as the CRPs evolve. Harmonization of procedures may be one way to go. Staff perceptions on the management of research reveal some differences across CRPs, which, however, may be confounded with differences at CGIAR Center level. Nonetheless, the researcher survey indicates quite clearly that ***many CRPs could do better in terms of creating individual incentives for performance***, in encouraging creative thinking, and in allowing for taking risks and learning from failure. Whether CGIAR has made progress in addressing deficits in ethical review procedures remains unclear from the evaluations. ***The opportunities that the CRPs offer for generating globally relevant data sets and making them publicly available seem to have been left underexploited***. The evaluations note progress in some areas, but the CRPs do not seem to have a strong policy on data management. Hence, as noted by the evaluations, data sharing across Centers remains a major challenge.

## 4.3 RESEARCH OUTPUTS

Assessing the quality of research outputs was a central element in assessing quality of science in all evaluations, even though the approaches differed, as further specified below.

### PUBLICATIONS

#### APPROACHES AND DATA BASES

The CRPs produce a wide range of published material for different audiences, including policy briefs and extension material. It appears that there is no common classification system for different types of publications across the CRPs. For the quality assessment, the evaluation teams typically identified the journal publications and assessed them on the basis of the quality of the journals in which they were published, taking into account journal impact factors and expert assessments of the reputation of different journals in their respective fields. Most evaluations performed a qualitative assessment of the findings from this analysis based on their experience, while only few attempted some type of quantitative benchmarking. The same applies for the analysis of the citation rates of articles. In addition, eleven evaluations teams conducted their own review of a sample of publications (see Table A 4 in Annex 2 for details).

## QUALITY OF JOURNAL PUBLICATIONS

Almost all CRPs were found to target journals with a good reputation and high visibility, and overall, the quality of their journal publications was seen to be consistent with the level that can be expected from international agricultural research institutions. The reviews of a sample of publications by the evaluation teams largely confirmed the bibliometric analysis that focused on journal impact factors and citation analysis. There was, however, considerable variation across CRPs regarding the share of publications that were not placed in high-quality journals and regarding the productivity of the researchers in terms of publishing peer-reviewed journal articles. Both topics are further discussed below. In the case of Grain Legumes, the evaluation found enormous variation in the quality of across the different product lines within the CRP. Some variation across themes was also noted in other evaluations (e.g., AAS), but not all CRPs assessed differences in the quality of journal publications between thematic areas within the same CRP.

As a common pattern, the evaluations found that the high-quality and frequently cited publications involved co-authorship with researchers from ARIs. The GRiSP evaluation observed that few of the frequently cited publications involved researchers from the core partners AfricaRice and CIAT. Many evaluations identified outstanding examples of very highly cited publications, published in journals such as Science or Nature in the CRP's publications portfolio. However, some such articles are reviews that had long lists of authors and the specific contributions of the CRP researchers was not necessarily evident (e.g., L&F, WLE). With regard to research on natural resource management, some evaluations (e.g., WLE) noted a lack of publications that presented aggregation and synthesis.

The Review compared the shares of articles that the different CRPs published in journals without impact factor (IF) (also referred to non ISI journal publications). Two groups of CRPs can be distinguished: those that had below 20% such publications (AAS, FTA, GRiSP, L&F, MAIZE, WHEAT) and those that had more than 30% (Dryland Systems, Grain Legumes, RTB). There was some variation in the evaluations regarding the interpretation of this indicator. Some evaluations (e.g., GRiSP, L&F, PIM, WHEAT,) generally discouraged any publications in journals without IF, because they saw it as an indication of research that has not been sufficiently reviewed to be reliable, or as research that was of low quality. Some evaluations (e.g., FTA, RTB, and WLE) pointed out some of the journals with low or no IF in which the CRPs published papers were venues intended to make research findings available to non-academic audiences or to audiences with in target regions. However, the evaluations indicate that such considerations do not justify high levels of non-ISI publications.

In the future, it might be useful to develop a unified classification system for CRP publications where those journals and magazines that target non-academic audiences should be placed in a separate category, and counted together with other publications that aim to reach non-academic audiences. To ensure reliability, it also appears justified to publish research findings for non-academic audiences only after they have undergone sufficient quality control, which typically involves some form of peer-review.

## VOLUME OF PUBLICATIONS

Several evaluations assessed the productivity of researchers. Some presented qualitative expert assessments without calculating indicators. The WHEAT evaluation, for example, concluded that the CRP's publication volume was appropriate considering the size of the program. Some evaluations calculated the number of peer-reviewed journal publications per full-time equivalent (FTE) researcher or per unit

of research investments. These evaluations (A4NH, AAS, Dryland Systems) found that the CRPs did not reach levels that are used in academia as benchmarks, but these benchmarks are also problematic since they vary considerably across disciplines, and because the objectives of CGIAR and academic research are not identical.

Some evaluations expressed concerns regarding the variation in the productivity of the researchers within the same CRP. The PIM evaluation was most explicit about this problem. It found that 18 % of all principal investigators were responsible for 63% of all peer-reviewed publications, whereas almost half of all PIM researchers did not publish a single peer-reviewed paper during the evaluation period. AAS also found that only a relatively small number of outstanding researchers in the CRP published most of the high-quality frequently cited papers. Partly, this problem may be linked to the fact that many CRPs had comparative large shares of junior scientists, as mentioned above.

It is not straightforward to draw conclusions from these assessments regarding the overall publication record across all CRPs, because the assessment approaches were not comparable. Considering that CGIAR has made efforts to benchmark and monitor the productivity of researchers prior to the reform[32], it appears useful to discuss at the system-wide level what approaches might be appropriate for the CRPs in the future, and whether they may include any form of benchmarking. Future efforts to assess the overall publication volume of the CRPs also need to take into account that, as some evaluations indicate, there is probably a substantial amount of double counting of the same publications for different CRPs. Moreover, the policy of acknowledging CRPs as funding source in published material does not seem to be strictly followed, which also makes it difficult to clearly map publications to CRPs[33].

### QUALITY OF SOCIAL SCIENCE RESEARCH IN THE COMMODITY, NRM AND SYSTEMS CRPS

Previous evaluations, such as the Stripe Review of Social Sciences in the CGIAR (CGIAR, 2009) had found that CGIAR faced major problems to integrate high quality social science in commodity or natural resource-focused programs. The CRPs should have offered new opportunities to address this challenge by providing more room for such integration. The evaluations indicate that these opportunities have not fully been utilized. The WHEAT and MAIZE evaluations were the only ones that presented positive findings, noting the use of innovative research methods and the ability to publish this line of work on high-level interdisciplinary journals. The other evaluations mostly pointed to limitations regarding the social science research. The social science work in some Commodity CRPs was found to be too focused on descriptive work and on the micro-level, which limited publications in highly ranked journals (GRiSP, RTB). Other evaluations noted variation in the quality of social science work between regions (Dryland Cereals) or between themes (L&F). Limited staff capacity was seen to be a limitation in some CRPs, as outlined above (FTA, Dryland Systems). Partnering with ARIs was seen as an essential element of success in WHEAT and MAIZE, and it was recommended for other CRPs to make better use of the opportunities that the CRPs offer for using advanced methods of social science research, such as randomized controlled trials (see, e.g., GRiSP).

32 For example, under the CGIAR's Performance Management System, the Centers had to report the number of peer-reviewed publications per research FTE, and they also had to report on the share of peer-reviewed publications that had co-authored based in research organizations in developing countries.

33 For example, the Dryland Systems evaluation found that it was rare to find any paper in the data base provided for the review that acknowledged financial support of the Dryland Systems CRP.

## QUALITY OF SYSTEMS RESEARCH

The creation of the three Systems CRPs was a promising expansion of the CGIAR portfolio, which aimed to increase relevance and impact of CGIAR research. In addition, the Commodity CRPs also had research components that dealt with the improvement of the farming systems in which their target crops are grown. It can be concluded from the evaluations that these efforts have not yet led to the emergence of a strong and coherent body of farming systems research within CGIAR. Perhaps the evaluations were too early, but they still provide useful information for the way ahead. One problem clearly identified was the lack of clarity about the farming systems concept within and across CRPs. The Dryland Systems evaluators, for example, asked CRP members what their understanding was of "agricultural systems" and "systems research". The responses varied considerably, which made it clear that there was no shared understanding of what is meant by these terms.

Overall, the three Systems CRPs focused on the use of participatory approaches and the use of innovation platforms, or other multi-stakeholder processes, to identify research priorities and implement research activities. Apparently, this reflected the major understanding of the teams implementing the research agenda, even though the original proposals had outlined a broader research agenda, which also included farming systems classification and analysis to be able to identify the larger "impact areas" for which place-based research in "action sites" would be relevant.

The Systems CRP evaluations reveal a mixed picture regarding the quality of the location-specific participatory research approaches promoted by the three System CRPs. The Dryland Systems evaluation found the actual research activities pursued under the program were still rather disciplinary. The AAS evaluation found that many activities focused on specific (conventional) interventions rather than on finding integrated approaches to improve overall systems productivity. This evaluation also noted that the CRP did not use the opportunity to learn from earlier participatory research approaches within and outside CGIAR. The Humidtropics evaluation was more positive and found the "place-based, people-centered approach to integrated systems research that has been tested by Humidtropics" were a model for all other CRPs to follow in their second phase. However, the evaluation report presented rather limited evidence for this claim.

Interdisciplinary analytical work that aimed to a better understanding of farming systems and their biophysical and socio-economic constraints played a limited role in the three Systems CRPs, even though it was foreseen in the CRP proposals, as mentioned above. The MAIZE CRP illustrates the type of systems research that would be useful within CGIAR. As the evaluation pointed out, systems research conducted within this CRP focused on the characterization and assessment of trade-offs in farming systems, the identification of optimization options, and support for sustainable intensification trajectories. Methods included surveys, modeling, field experimentation and statistical analysis. It would have been beneficial to combine such work with the participatory action research approaches promoted in the Systems CRPs, but the linkages between Commodity and Systems CRPs were apparently not well developed. The MAIZE evaluation, for example, found that the CRP would have benefitted from more collaboration with Humidtropics. And the AAS evaluation criticized that the CRP was largely not able to leverage much needed expertise from other CRPs to conduct research on the agricultural component of aquatic agricultural systems.

## QUALITY OF NON-PUBLISHED OUTPUTS

A major goal of CGIAR research is to develop and promote technological and institutional innovations, which are important outputs, next to publications (even though the publications may refer to these innovations)[34]. The CRP evaluations differed considerably in the level of depth and detail in which they assessed the quality of the non-published outputs. Innovations related to genetic improvement (improved breeding technologies and improved germplasm) were discussed in detail in the Commodity CRPs. They were generally favourable in the case of GRiSP, WHEAT and MAIZE, and more mixed with regard to the other Commodity CRPs. As far as quality of science is concerned, the evaluation paid less attention to types of technological and institutional innovations, e.g., improved agronomic practices that the CRPs may have developed.

### EMERGING LESSONS ON QUALITY RESEARCH OUTPUTS

Overall, the evaluations indicate that the Commodity CRPs that deal with the world's major staple crops – rice, wheat and maize – have been able to maintain CGIAR's role as a public sector institution where world-class quality science is conducted with the aim to contribute to improving food security and addressing poverty. The publication analysis indicates that ***collaboration with ARIs seems essential for the CRPs*** to be able to stay at the research frontier in an increasingly competitive environment. The publication analysis also indicates that (pre-existing) ***differences across CGIAR Centers regarding their visibility and impact in the international scientific literature have not been significantly reduced*** through the CRP approach of bringing different Centers together, since collaboration in the same CRP does not necessarily lead to joint publications in high-ranking journals. The evaluations also indicate that the quality of research on the wide range of other commodities covered by the Commodity CRPs is overall adequate and consistent with what can be expected from CGIAR. However, there is considerable variability in this respect. Among the Non-Commodity CRPs, the picture that emerges from the evaluations is similar. ***Overall, the CRPs are able to produce quality of science at a level that can be expected from international agricultural research organizations, but there is considerable variation within and across CRPs.*** Outstanding achievements in some areas are often due to a relatively small share of exceptional researchers. It can also be noted that the evaluations took place too early to assess the quality of science in the areas of systems research and participatory research on the basis of published outputs in the international literature. ***A matter of concern for several CRPs were relatively high levels of articles in journals without impact factors***, and these CRPs may use strategies such as more emphasis on mentoring of junior scientists and co-authorship of senior with junior scientists. It also emerges from the evaluations that many CRPs had problems to accurately track the publications that can be associated with the CRP. For the future, ***it may be useful to develop a system - wide data base of CRP publications***, using a unified classification system for different types of publications. This would make it easier to generate management-relevant information about publications in a way that is comparable across CRPs.

34 Since CGIAR aims to develop and promote science-based solutions, the science base should be proven before the solution is promoted or recommendation made. Depending on the innovation, the proof may be reflected in peer-reviewed publications, or in other scientific evidence (e.g., field trial results for new varieties that are not necessarily always published in the peer-reviewed literature).


# 5.OUTCOMES AND IMPACT

## 5.1 IMPACT PATHWAYS AND THEORIES OF CHANGE

### EVOLUTION OF CONCEPTS

Given the strong emphasis on results orientation in the reform process, development of impact pathways was an integral part of the request for 2010 proposals for the CRPs. In December 2012, the ISPC published a White Paper on "Theories of Change and Impact Pathways"[35] (ISPC, 2012b), which promoted the use of the ToC concept in addition to the impact pathway concept. The definition of terms by the ISPC is displayed in Box 1. The main aim of introducing the ToC was to strengthen the strategic orientation of the CRPs towards the SLOs through the IDOs, which had been introduced in the White Paper on Prioritization in June 2012[36] (see Chapter 3).

#### BOX 1. DEFINITIONS OF KEY TERMS USED IN THIS DOCUMENT

Logic models (logical frameworks) – Link inputs and activities to outputs, outcomes and impacts in a visual presentation. Logic models do not provide insights into causality. The detail tends to be in the activity and output levels. Assumptions and risks that are part of a logical framework

35 ISPC (2012 b): White Paper on Theories of Change and Impact Pathways.

36 ISPC (2012 a)

presentation tend to be outside the control of the program. Logic models follow an agreed presentational form.

Impact pathways – Build on logic models by giving more detail on the contribution of each activity on its path to impact. Impact pathways unpack the links between outcome and impact. Impact pathways are commonly presented graphically.

Theory of change (ToC) – Presents an explicit identification of the ways by which change is expected to occur from output to outcome and impact. The ToC questions the assumptions about causality underlying the relationships between outputs, outcomes and impact. In ToC the assumptions present the mechanisms of change. There is no single method or presentational form agreed for TOCs

Source: ISPC (2012 b).

A review of the ToCs and Impact Pathways of the different CRPs indicates that they apparently understood these concepts in rather different ways, so that there is no consistency across CRPs. Some CRPs also started to use other terms, such as "scaling pathway" (AAS) or "uptake pathway" (WLE). Even though the White Paper on ToCs and Impact Pathways was available in 2012, the evaluations indicate that publishing the paper may not have been sufficient to provide adequate guidance for the CRPs. The Dryland Systems Evaluation illustrates this point: "Many CGIAR scientists find it difficult to apply this approach to planning research. This may be because CGIAR Centres and CRPs do not invest adequately in training scientists to use theories of change. Instead, research planning seems to continue to be rather traditional, with impact pathways prepared as an afterthought to meet a bureaucratic requirement"[37] (p. 54). The FTA evaluation added the concern that the impact pathway exercise was mostly done with a view to ensure continued funding, which led to a bias towards stating highly aggregated outcomes and impacts far beyond the direct influence of the program.

If taken seriously, the application of ToC, a project management tool, to complex programs such as CRPs is a formidable task. The ToC should be part of program design that begins with impact domains, desired impacts for each domain (geography, type of beneficiary etc), and then the interventions, products, and outcomes to achieve those impacts, along with assumptions and risks. These bottom-up ToCs then need to be aggregated to a ToC at the flagship level and ultimately integrated to a ToC for the whole CRP. Conceptually, the ToC is then also a tool for setting priorities (by working backwards starting from the desired impacts to priorities) as well as a mechanism for designing an Monitoring, Evaluation and Learning system with appropriate milestones and feedback loops from outcomes and impacts to adjust the ToC.

In practice, and perhaps inevitably, the ToCs of the CRPs fall far short of this ideal. Most CRPs have developed their ToCs from the top down rather than the bottom up. Most have a ToC at the flagship level, and some are developing ToCs for major hubs (e.g., AAS in the Southern Bangladesh Polder Zone, GRiSP in the Mekong Delta,). The gender teams have also developed their own ToCs (e.g., Grain Legumes).

**37** Merrey, D.J., R. McLeod, and J. Szonyi (2015): Evaluation of the CGIAR Research Program on "Dryland Systems"

However, several evaluations commented on the need to integrate ToCs across flagships and start to build more specific ToC for particular products and regions (e.g., Dryland Cereals). None have made much progress in linking the ToC and the Monitoring, Evaluation and Learning system (see Chapter 8.3).

### COMMODITY CRPS

ToCs for the Commodity CRPs have generally distinguished between global research on genetic improvement and important diseases, and research on sustainable intensification and value chains at the local level. The former focuses on linking CRP research to national breeding programs (mostly public) and seed systems. This link is well established and builds on traditional CGIAR strengths. The major new initiative for most crop CRPs has been a specific flagship on building seed systems (including planting materials) as an integral part of the impact pathway. However, in some cases, the CRPs lack sufficient relevant in-house expertise on seed systems (Grain Legumes, RTB), as pointed out in the respective evaluations, and there is a lack of coordination across crop CRPs addressing the same seed systems, as observed by the authors of this report.

ToCs are much less developed for research on sustainable intensification and value chains. In particular, ToCs lack specifics on secondary pathways for scaling out, and evaluations called for clearer strategy for getting beyond immediate partners to wider scale impacts (Grain Legumes, GRiSP, MAIZE, WHEAT). Such a strategy requires an understanding of what works well where as the basis for designing capacity building to "enable the enablers" for scaling out (GRiSP, WHEAT).

CRPs that have maintained a separate flagship for social science have developed separate ToCs for these components. The evaluations found that for the majority of these cases, these ToCs were poorly developed. Much social science research should feed into other flagships and the evaluations raised questions about this integration (GRiSP, MAIZE).

### SYSTEMS CRPS

The ToCs of the three Systems CRPs generally focused on innovations in the respective farming systems that were expected to improve productivity and environmental sustainability as well as social changes. Only AAS also had a Scaling Pathway that focused on disseminating the Research-in-Development (RinD) approach developed by this CRP at national, regional and global levels, e.g., through effective communication and partnerships. The level of detail of the ToCs varied considerably between the three CRPs, and the evaluations teams had different views on the required level of detail. The Humidtropics evaluation team "particularly liked the clarity and simplicity" of the ToC that this CRP had developed, and only noted the challenge to identify and measure appropriate indicators. The Dryland Systems evaluation noted progress in producing a more plausible, though still generic, impact pathway by involving the CRP's experts on systems analysis and modeling. The evaluation team noted, however, that there was still room for improvement, e.g., by clarifying underlying assumptions and specifying stakeholder roles. The AAS evaluation was rather critical of the simplicity of the hub-level ToCs that the program had developed, pointing out that a research program should consider the relevant literature on adoption of innovation and innovation systems when formulating ToCs.

### NRM CRPS

Oversimplification was also a common concern in the NRM CRPs. The impact pathways towards more sustainable use of natural resources are often particularly complex, involving individual behavioural change, collective action, institutional change as well as policy change at different levels (from local to global, as in case of climate change). The picture that emerges from the evaluations is that the ToCs were not sufficiently refined to capture this complexity. The WLE evaluation, while noting progress for two flagships, still found the ToCs to be rather simplistic as they assumed that change in a society revolves around or is triggered by WLE, rather than by a range of interrelated contextual factors, of which WLE is just one part. The ToCs also ignored dynamic aspects, such as windows of opportunity, and insights from behavioral sciences on how people actually make decisions. The FTA evaluation was similarly critical of the Impact Pathways and ToCs that the CRP had developed. The team found that the impact pathways contain large "causal jumps" from scientific outputs to behavioral change, and onwards to impacts on national, regional and global scale, without explaining how this would be achieved in practice. In a similar vein, the CCAFS evaluation found a need to strengthen the ToCs at regional and flagship levels by better definition of assumptions and risks. It also recommended transforming these into hypotheses for testing during Program implementation, as is good theory of change practice outside of CGIAR.

### PIM AND A4NH

Both PIM and A4NH had three overall impact pathways. Two were similar, one focused on influencing the programs of development agencies, and the other one on influencing policies. PIM's third pathway dealt with strengthening the capacity of research capacities (PIM), while that of A4HN aimed at influencing value chains. The PIM evaluation did not discuss these impact pathways or the program's ToCs in detail, apart from noting that they did not find a strong association yet between the types of research being conducted in each flagship, their stated impact pathways, and the partners identified in the projects' progress reports. Both the PIM and the A4NH evaluations noted favourably that the Program Management Units (PMUs) had started to assist the researchers in the flagships to develop more detailed theories of change. Unlike in the cases discussed above, A4NH made dedicated efforts to rigorously examine the research evidence for the assumptions about how the research will lead to impact, as illustrated in Table 54 below. The evaluation still recommended more capacity building and resources for this work, and it also made the interesting suggestion to combine ToCs with traditional risk analysis and to systematically use them for risk management in the CRP.

TABLE 5: IMPACT PATHWAY EXAMPLE OF A4NH (PROVITAMIN A ORANGE MAIZE IN ZAMBIA)

| Research questions and likelihood of occurrence | Assumptions | Strength of evidence that key assumption holds true |
|---|---|---|
| Will target farmers be aware and convinced of orange maize? ***Likelihood: medium to high*** | • Farmer awareness<br>• Farmer acceptance | • Strong<br>• Medium |
| Will target farmers grow orange maize? ***Likelihood: medium*** | • Access to seed<br>• Varieties perform as expected | • Weak<br>• Strong |
| Will processors and traders buy and use orange maize? ***Likelihood: medium to high*** | • Traders and processors reached with information about orange maize | • Medium to Strong |
| Will target consumers be aware of and willing to eat orange maize? ***Likelihood: medium to high*** | • Consumer acceptance<br>• Consume awareness | • Strong<br>• Medium |
| Will target consumers eat orange maize? ***Likelihood: medium*** | • Availability and accessibility | • Medium |
| Will target consumers' consumption of orange maize reduce the prevelance of inadequate vitamin A intakes? ***Likelihood: medium to high*** | • Accurate targeting of consumers<br>• Retention and bioavailability of vitamin A<br>• No adverse changes in diet | • Medium<br>• Strong<br>• Strong |

Source: A4NH evaluation[38], p. 28.

## EMERGING LESSONS ON IMPACT PATHWAYS AND TOCS

There is little doubt that the request for each CRP to develop a ToC ***has forced CRPs to consider more carefully the processes for achieving impacts*** and led to a stronger results orientation to the whole CGIAR, a finding that is supported by most evaluations and also the researcher survey. However, the evaluations suggest that the ***direct translation of ToC, as a tool developed for specific development projects, to the CRPs needs much more thought.*** While development projects are typically implemented in a specific region, the CRPs are highly complex global research programs that include a wide range of different types of activities (from laboratory research and theoretical modelling to activities on farmers' field). They target a large number of very diverse beneficiaries and they typically have rather diverse impact pathways (e.g., achieving impact directly through working with farmers and extension agents as well as indirectly through advising policy-makers, influencing global debates and donors and changing development paradigms). The evaluations indicate that ***CRP ToCs also need to be more cognizant of the relevant literature.*** ToCs are essentially based on assumptions regarding the different causal links in an impact chain, and - to meet the standards of a global research programs--these assumptions should be supported by the respective

38 Compton, Julia et al (2015): Independent CRP-Commissioned External Evaluation of the CGIAR Research Program on Agriculture for Nutrition and Health.

literature, as demonstrated by A4NH. Depending on the CRP, the relevant literature may include research on technology adoption and agricultural innovation systems or the emerging field of implementation sciences.

The emerging lesson is that CGIAR **needs to invest more efforts in adapting the ToC concept**, which was originally designed for development projects, to the specific of a highly complex international research program. ***The CRPs could make better use of their own research expertise to develop better ToCs***, but this will require that CRP staff embraces the concept as part of their research endeavour, rather than considering as just another requirement to be fulfilled to access funding.

## 5.2 IMPACT

All evaluations were tasked with reviewing outcomes and impacts of the CRPs both from the perspectives of (i) learning and feedback to research design and (ii) accountability to funders that the CRPs impacts on the IDOs and ultimately the SLOs were being achieved. Necessarily, given the short time of 2-4 years since the CRPs' inception, the best that could be expected from the CRP investments would be outcomes at the IDO level. Even most outcomes would be based on legacy research that had been completed prior to CRP inception although some of the development-type work (product adaptation and delivery) may have taken place through CRP investments. Impacts were expected to be entirely based on legacy research and development activities that had taken place prior to the CRP.

This section reviews evaluation findings for both outcomes and impacts. In general, the evaluations reviewed outcomes and impacts through adoption, influence and impact assessment studies (IAs) that had been completed under the CRP. Most evaluations also reviewed the processes in place for systematic impact assessment and the quality of the IAs that had been carried out. In addition, this section includes information from other evaluations, especially those carried out under the auspices of SPIA. In particular, we included the findings from SPIA's special project DIIVA, because this is the only relatively recent large-scale regional study on the impact of improved varieties, and it provides information that is not fully captured in the CRP evaluations[39].

For this review, we divided the CRPs into commodity CRPs (C-CRPs) and the others or non-commodity CRPs (NC-CRPs). One of the main products of most C-CRPs is genetic improvement delivered through new crop varieties or livestock or fish strains. Such products are 'embodied' in seed or breed technologies' that are conceptually straightforward to attribute to the research of CGIAR. CGIAR has a long history of IAs of such crop improvement research and the methods are fairly well developed although they continue to be refined. All C-CRPs were heavily based on legacy research and in the past the bulk of the measured impacts of CGIAR were from these legacy programs, especially IRRI and CIMMYT[40]. Even so commodity CRPs also produce 'disembodied' knowledge products' such as decision tools for better

39 Much of the field work for DIIVA was completed before the CRPs were established but analysis and reporting of results took place under the CRPs and these are the results that many CRP evaluations used. A new SPIA program, Strengthening Impact Assessment in the CGIAR was initiated in 2013 but results were not available for the CRP evaluations.

40 Raitzer and Kelley (2008): Benefit–cost meta-analysis of investment in the International Agricultural Research Centers of the CGIAR. Agricultural Systems, 96(1): 108-123.

crop and resource management practices, institutional innovations and policy recommendations, where uptake is more difficult to track and attribution to CGIAR investments is particularly challenging[41].

The NC-CRPs largely produce knowledge products and impact assessment methods are much less developed[42]. Even outcomes are difficult to attribute given that there may be several different sources of knowledge that influence decision makers. Some of these NC-CRPs also included relatively little legacy research so impacts by 2015 were not expected.

Finally, the CRPs are made up of several Centers that inherited their own impact cultures from the pre-reform CGIAR. Prior to the reforms, CGIAR annually assessed the impact cultures of the Centers as part of its Performance Management System. Crop Centers had higher scores than other Centers and in the 2007-2009 period occupied the 7 of the top 8 rankings (ISPC 2010)[43]. This hetero- geneity in impact culture was often reflected in the new CRPs with considerable variation across and even within CRPs in the attention to and rigor of IA.

### COMMODITY CRPS (C-CRP)

The C-CRPs build on a long experience on genetic improvement through crop varieties, fish strains and to a much smaller extent, animal breeds. These products account for the great bulk of measured impacts of the CGIAR system and these estimates have been consistently used by CGIAR to justify investment in the System. Indeed the SRF 2016-30 starts out by citing these estimates, albeit using data that is of 1998 vintage[44].

The evaluation of the C-CRPs indicate that IAs of crop genetic improvement seem to have lost momentum. The evaluations reported few major IAs and no global assessments. GRiSP reported two IAs covering four countries (but not India and China) with large Net Present Value benefits estimated in the tens of billions of dollars. The RTB Evaluation reported fairly complete global coverage of adoption and some impact estimates for cassava and potatoes, and expanded adoption and benefits of improved Tilapia continued to be documented in L&F. Notably, for two major food staples, only one major study was reported by WHEAT and IA was largely confined to Africa for MAIZE. Prior to the reforms, CIMMYT the lead center for these CRPs had a strong record of IA.

The only complete regional adoption information was available for sub-Saharan Africa through the SPIA's DIIVA project mentioned above. This project had supported an effort by nine Centers to document adoption of modern varieties (MVs) for 20 crops in 29 countries. Results reported in Table 6 indicate modest progress in the uptake of MVs in most crops in aggregate. Still only about one third of the area of food crops in Africa was covered by MVs compared to 25-30% for a previous estimate in 1998. Importantly,

41 Renkow, M. and Byerlee, D. (2010): The impacts of CGIAR research: A review of recent evidence. Food Policy, 35(5): 391-402.

42 All CRPs can also have profound impacts through contribution to scientific knowledge. This contribution was already discussed in Section 4 on quality of science.

43 Note that ILRI and World Fish, although commodity centers, scored in the lower half of rankings during this period.

44 Walker et al (2014): Measuring the Effectiveness of Crop Improvement Research in Sub-Saharan Africa from the Perspectives of Varietal Output, Adoption, and Change: 20 Crops, 30 Countries, and 1150 Cultivars in Farmers' Fields.

CGIAR-related varieties make up two-thirds of the MV area although benefits were reduced by a long lag from variety release to peak adoption (average of 14 years)[45]. Adoption of improved varieties was also associated with successes in increasing output of food staples in Africa by an average of 15% through higher yields (Figure 3)[46].

TABLE 6: ADOPTION OF MODERN CROP VARIETIES IN AFRICA AND THE CONTRIBUTION OF CGIAR, CIRCA 2010

| | Total area | MV area | % MV of total area | % MV area CGIAR related |
|---|---|---|---|---|
| | (Mha) | (Mha) | (%) | (%) |
| Maize | 24.67 | 13.03 | 53 | 55 |
| Sorghum | 17.97 | 4.93 | 27 | 78 |
| Cassava | 11.04 | 4.38 | 40 | 83 |
| Rice | 6.79 | 2.58 | 38 | 51 |
| Pearl millet | 14.09 | 2.55 | 18 | 87 |
| Groundnut | 6.36 | 1.85 | 29 | 86 |
| Yam | 4.67 | 1.41 | 30 | 50 |
| Soybean | 1.19 | 1.04 | 87 | 63 |
| Wheat | 1.45 | 0.85 | 59 | 65 |
| Bean | 2.5 | 0.72 | 29 | 81 |
| Other crops[a] | 16.99 | 4.63 | 27 | 61 |
| **Total** | **107.72** | **37.97** | **35** | **66** |

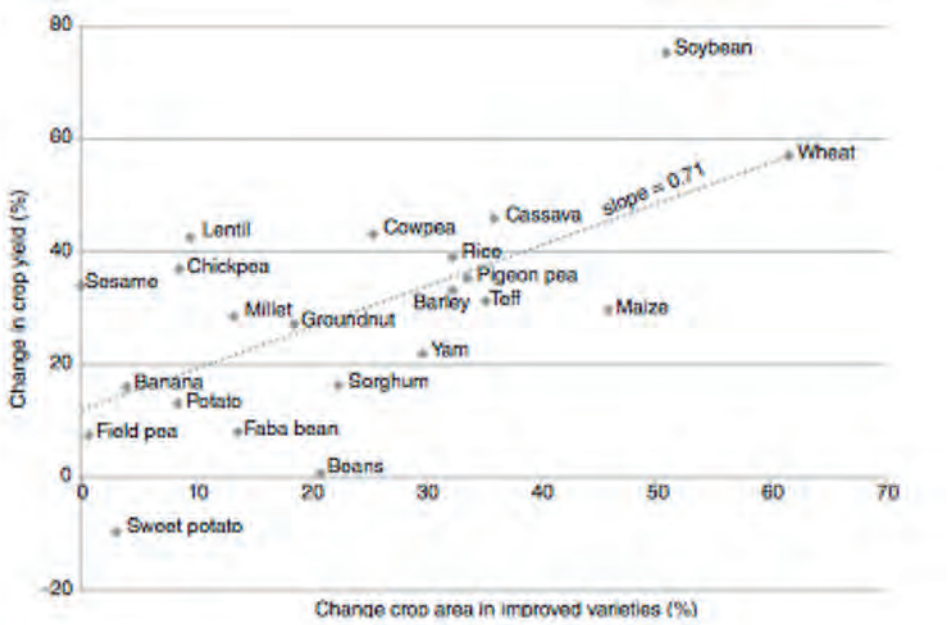
[a] Includes pigeonpea, potatoes, barley, chickpeas, fababeans, lentils, sweet potatoes, and field pea, all with less than 0.5 Mha of MV adoption.

Source: Walker et al., 2015

45 Walker et al (2014): Measuring the Effectiveness of Crop Improvement Research in Sub-Saharan Africa from the Perspectives of Varietal Output, Adoption, and Change: 20 Crops, 30 Countries, and 1150 Cultivars in Farmers' Fields.

46 Fuglie, K and Marder, J (2015): The Diffusion and Impact of Improved Crop Varieties in Sub-Saharan Africa. In Crop Improvement, Adoption and Impact of Improved Varieties in Food Crops in Sub-Saharn Africa. Edited by Thomas S. Walker and Jeffrey Alwang.

FIGURE 3: CHANGE IN MV ADOPTION AND RATE OF YIELD IMPROVEMENT IN AFRICA, 1980-2010.




Source: Fuglie and Mardar, 2015. Figure 17.1. Adoption of improved varieties and rate of yield improvement in sub-Saharan Africa between 1980 and 2010. Source: Crop yield change is the average crop yield in 2006-2010 relative to the average crop yield during 1976-1980 for the whole sub-Saharan Africa region, estimated from FAOSTAT data. The crane in percentage area in improved varieties estimated by authors from DIIVA data and other sources.

The DIIVA study also provided some estimates of impacts of CGIAR research on the SLOs at the country level. Large poverty impacts for improved maize varieties in Ethiopia (MAIZE) and notable food security impacts were documented for improved bean varieties in Rwanda (Legumes)[47]. GRiSP also reported one study of impacts on poverty and food security across three countries in Asia[48]. The most notable documented nutritional impact was from orange-fleshed sweet potatoes in RTB through randomized roll out plans in Uganda and Mozambique[49]. Overall, however, only modest progress has been made in systematically assessing impacts of crop research on the IDOs most related to the SLOs.

The Evaluations also reported significant and potentially large outcomes of the CRPs for crop improvement research. Several of these had to do with early adoption stages of stress tolerant varieties in less favourable environments, including flood-tolerant rice in South Asia (GRiSP) and drought tolerant maize in Southern Africa (MAIZE). Randomized control trials are increasingly used to assess early outcomes and provide the evidence base for scaling up (GRiSP and RTB). A particularly important result of evaluation of the flood tolerant rice varieties was that the poorest farmers who tend to be clustered in flood prone areas benefited most from these varieties.

47 Walker et al (2015)

48 Raitzer et al (2015): Is Rice Improvement Still Making a Difference? Assessing the Economic, Poverty and Food Security Impacts of Rice Varieties Released from 1989 to 2009 in Bangladesh, Indonesia and the Philippines.

49 For example in Hotz et al (2012): A large-scale intervention to introduce orange sweet potato in rural Mozambique increases vitamin A intakes among children and women. British Journal of Nutrition

IA of other research products in C-CRPs has been limited although increasing. Both GRiSP and MAIZE report IAs of crop and natural resource management technologies at a specific site. RTB has conducted an innovative IA of institutional innovations in value chains to link smallholder potato producers to high value markets[50]. Given that a substantial share of C-CRP budgets are allocated to crop and resource management and to upgrading value chains, progress in IA in these areas is a priority.

### NON-COMMODITY CRPS

IA and assessment of outcomes in the NC-CRPs with the exception of PIM has been minimal. The evaluation of WLE does address impacts, noting particularly local impacts of watershed development, but lamenting the overall paucity of impact studies[51]. In some cases, especially the Systems CRPs, the CRP had little legacy research to draw on so lack of IA or even outcomes is understandable. Even so Dryland Systems, for example, built on considerable legacy research and the Evaluation does report some impacts although it does not cite specific supporting IA studies.

Outcomes are discussed but often based on anecdotal evidence from field visits and interviews by the evaluation teams rather than rigorous assessment which may partly be due to the early stage of the evaluation and the absence of impact assessment studies, especially for non-legacy research. For PIM the Womens' Empowerment in Agriculture Index and the Program on Collective Action and Property Rights (CAPRI) at IFPRI are strongly endorsed as having wide influence. In FTA, CIFOR is recognized as being 'visible in REDD+', an important international effort to provide incentives to halt deforestation. Stakeholders views on the influence of research of WLE on governance and management of the Mekong River basin was 'overwhelmingly positive'.

The paucity of IA in the Evaluations partly reflects the difficulties discussed earlier of attributing outcomes to the type of research products of NC-CRP. This was recognized for policy research products, and a PIM workshop in late 2014 laid out ways to better communicate and monitor the utilization of outputs of policy research along the impact pathway to enable credible IAs in the future. Within PIM, IFPRI does have a track record of assessing outcomes through influence with some eight studies published during the evaluation period. None, however, was able to track impacts further down the impact pathway to SLOs due to methodological limitations. Nonetheless, some investments had widely demonstrated influence, such as those in social protection (Nelson et al., 2015). The Evaluations of both PIM and L&F report economic impacts of improved smallholder dairy value chains in East Africa resulting from ILRI interventions. Very recently since the PIM evaluation, IFPRI has published a detailed synthesis of its outcomes and impacts over 40 years[52].

### IMPACT ASSESSMENT PROCESSES

The Evaluations generally rated the quality of IAs favourably although often noting considerable variability. Methodological rigor has the potential to improve with the increasing availability of panel data sets (i.e.,

50 Cavatassi et al (2011): Linking Smallholders to the New Agricultural Economy: The Case of the Plataformas de Concertación in Ecuador. The Journal of Development Studies.

51 WLE identifies a need for a systematic effort on impact assessment of NRM research, in particular of the major, long-term programs inherited by WLE.

52 Hazell, P.B. and Slade, R. (2016): Taking stock: Impacts of 40 years of policy research at IFPRI.

surveys of the same households at two or more points in time) and novel techniques such as RCTs to measure risk effects of technology use [53] and DNA fingerprinting to verify varieties grown by farmers[54]. CRPs are also linking with outside partners to include technology adoption as part of national surveys. SPIA is providing valuable networking, coordinating and funding as demonstrated by the DIIVA project on adoption and impacts of MVs in Africa.

Still a recurring theme in the evaluations' recommendations is the need for CRPs to adopt a systematic and adequately funded approach to IA, which would replace the present ad hoc processes that provide only very partial and sporadic coverage of CRP activities. Much of the IA work is being promoted by donor requirements for IA of bilateral projects. This type of IA has previously been strongly criticized by the ISPC review of social science as being focused on short-term local impacts and often of low quality [55]. Moreover, the requirement for detailed baseline surveys in many bilateral projects is drowning IA economists in data much of which are not analysed or used for IA (e.g., GRiSP, MAIZE).

One requirement that is closely linked to CGIAR's efforts to document progress along the Impact Pathways are the annual progress indicators required by CGIAR (see also Section 8.2). Several evaluations noted that many of the 34 indicators requested are difficult to assess on an annual basis and CRPs used proxy measures such as the amount of seed distributed as a proxy for hectares planted or number of farmers reached. In some cases these estimates appear to be far from reality (e.g., AAS). The evaluations indicate that many of the indicators are meaningless for aggregating across the highly diverse research products and impact pathways of the portfolio of CRPs. Output measures such as the number of tools or technologies/practices or policies analysed cannot be standardized across CRPs or even within a CRP. Proxy impact measures such as the number of farmers using improved practices require rigorous IA and in any event are only peripherally related to the SLOs.

Finally, one reason for the paucity of impact studies under the CRPs has been funding. Rigorous IA at scale depends largely on W1/W2 funding that has become increasingly scarce and volatile. Funding through SPIA has been important in sustaining IA, but that funding is highly constrained and can support only a fraction of the IA envisaged for the CRPs.

### EMERGING LESSONS ON IMPACT

The ***development of a systematic approach to IA*** that addresses CRP and System-level needs with respect to accountability for SLOs and learning is still ***a work in progress***. IA should be an ongoing activity that provides broad coverage of the major CRP research products and SLOs for specified time periods of 5-10 years, supported by the allocation of a certain percentage of funds to IA, and SPIA should continue to provide matching funds. The biggest challenge in IA is for the non-

53 Emerick et al (2016): Technological innovations, downside risk, and the modernization of agriculture. American Economic Review.

54 Rabbi et al (2015): Tracking crop varieties using genotyping-by-sequencing markers: a case study using cassava (Manihot esculenta Crantz). BMC genetics.

55 CGIAR Science Council (2009)

commodity CRPs. Given the state of the art, ***assessing impacts on SLOs is unrealistic in many cases, but assessing outcomes by rigorous and regular monitoring of influence of CRPs is feasible***. In most cases, influence will necessarily be assessed in terms of national and local decision makers, but a systematic program of IA should allow synthesis of results from a regional or global level.

At the System level, ***SPIA has a critical role in quality control***, providing a community of practice and promoting regional/global coverage, and this should be continued. The Consortium Office or its successor needs to go back to the drawing boards to develop progress indicators that focus on monitoring implementation of agreed research programs. ***Outcomes and impacts can be assessed periodically*** at intervals of 3-5 years ***based on application of rigorous state-of-the-art methods***.


# 6. GENDER

## 6.1 CONTEXT

CGIAR Centers started to address gender in the 1980s, and CGIAR evaluations have also dealt with gender since that time[56]. At the system-level, CGIAR initiated its first Gender Program in 1991, and in the late 1990s this program was replaced by two programs, the Participatory Research and Gender Analysis Program, launched in 1997 to support research on gender, and the Gender and Diversity Program launched in 1999 to enhance the role of gender in the work place. A CGIAR Scoping study in 2011 concluded that "in spite of some excellent examples of gender research, the level of commitment to gender analysis has varied considerably across the Centers", and that "in spite of a number of strategic gender initiatives, a robust, properly resourced and supported effort to embed gender analysis across the CGIAR system has not yet been attempted"[57] (p. 6-7).

The CGIAR reform in 2010 offered an opportunity to further integrate gender System-wide through the new CRP portfolio. On the basis of the Scoping Study, the two System-wide gender programs were closed in 2011, and the Consortium Board adopted a new "Consortium Level Gender Strategy" (more often referred to as the CGIAR Gender Strategy) with two components: (i) mainstreaming gender research in the CRPs; and (ii) promoting diversity and gender in the workplace. The Strategy also stipulates the establishment of a Network of Gender Experts (Consortium Board, 2011).

56 See Jiggins (1986) and Anderson et al (1988)

57 Kauck et al (2010): CGIAR Gender Scoping Study

Further each CRP proposal was required "to articulate clearly its strategy regarding gender research issues (Fund Council, 2010, p.4). The Scoping Study in its 2011 review of the CRP proposals identified major shortcomings. The CRP drafting teams did not have a clear understanding of what was expected regarding gender mainstreaming; the gender sections were strikingly brief and often lacked the basic elements of a concrete strategy; only five CRP proposals integrated gender in an innovative and effective way (RTB, L&F, AAS, FTA, PIM); and most CRPs did not have budgets allocated for gender analysis (Kauck et al., 2010: 10-12). In 2012 the Consortium Office requested all CRPs to formulate a Gender Strategy within one year, and in 2013 requested CRPs to integrate gender in their annual work and budget plans and annual reports. However, as the PIM evaluation observed, the Consortium has "not yet provided sufficient guidance on methodologies to capture the level of attention given to gender issues" (PIM Evaluation, p. 60).

Given the slow start to providing a clear strategic direction on how gender was to be incorporated into the CRPs, the timing of the evaluations was too early to assess to what extent the CRPs have addressed the shortcomings identified in the 2011 Scoping Study. However, the evaluations provide valuable information on the progress made. All evaluations performed an assessment of the way in which the CRPs had addressed gender, although the depth of the assessment varied across evaluations. All Evaluation Reports have a specific section on Gender (or case study for Humidtropics) and nearly all evaluations included at least one specific recommendation on gender.

## 6.2 GENDER STRATEGIES OF THE CRPS

Most evaluations only list or describe the main elements of the respective CRP gender strategies without providing a critical assessment. Only the FTA and the A4NH evaluations conducted a more detailed analysis of the respective CRP Gender Strategies. The FTA evaluation is overall positive, noting that the FTA Gender Strategy has clear objectives and impact pathways, explains the corresponding approaches, identifies gender-relevant scientific questions for each FTA component and defines initial indicators for monitoring progress and success. The A4NH evaluation provides a critical assessment in an excellent background paper (See volume on Background Papers for A4NH evaluation) that found that the A4NH Gender Strategy contains a strong analysis of the issues around integrating gender into A4NH research, as well as useful proposals for action. The RTB evaluation pointed out that the Strategy "has proven its worth as a basis for initiating significant pieces of work" (RTB evaluation, p. 53), and the Dryland Systems evaluation labelled the gender strategy to be "strong".

Another strategic theme is the type of approach that the CRPs take regarding gender. International development organizations often distinguish (i) gender-neutral, (ii) gender-sensitive or gender-responsive, and (iii) gender-transformative approaches[58]. Gender-responsive approaches consider attention to gender inequality as instrumental for reaching development objectives such as the eradication of hunger and poverty. This is the approach formulated in the CGIAR Gender Strategy, which emphasizes the role of increased access of women to resources as essential to increase productivity and nutritional outcomes

58 Christodoulou, and Zobnina, Anna (2009): Glossary of Gender-related Terms. Mediterranean Institute of Gender Studies. This distinction is also made in the relevant research-based literature. See, for example,. Farnworth, C. R., & Colverson, K. E. (2015). Building a Gender-Transformative Extension and Advisory Facilitation System in Sub-Saharan Africa.

[59]. Gender-transformative approaches go beyond this "instrumental view" and emphasize the goal of empowerment by transforming unequal gender relations and addressing the underlying societal norms that result in gender inequality.

An important strategic question is whether or not a CRP should have a dedicated component focusing on gender research, or concentrate on mainstreaming gender throughout the portfolio [60]. Several CRPs do have dedicated gender research components, typically as part of a cross-cutting flagship project (as in AAS, PIM and later A4NH). However, it is not clear that lack of a separate gender component affected the importance placed on it or the way the researchers approach gender mainstreaming (e.g., as noted in the L&F evaluation).

Five evaluations commented on the gender-transformative approaches used by the CRP (A4NH, AAS, Humidtropics, L&F, WLE). AAS and Humidtropics were explicit in using a gender transformative approach. Indeed Humidtropics explicitly distanced itself from "traditional gender approaches within agriculture which have separated gender and development from system thinking" (Humidtropics Evaluation, Annex 10.8, p.5). The A4NH evaluation indicated, however, that most researchers seemed to take a gender-responsive approach (labelled "practical" by the evaluation) rather than a transformative approach and recommended that future development of the gender strategy should more explicitly address the relationship between these different approaches. The L&F evaluation concluded that many of the L&F research lines have the potential to be gender - or socially-transformative in some way such as the training work done in the Bangladesh value chain. On the other hand, the WLE evaluation noted that the CRP's Gender Unit had "little capacity to … move beyond gender responsive work towards gender transformative research" (WLE evaluation, p.75).

### EMERGING LESSON ON GENDER STRATEGIES

The overall impression from the evaluations is that requesting the CRPs to develop Gender Strategies has been an important step in mainstreaming gender throughout CGIAR. The evaluations suggest that it would be helpful if the CRP Gender Strategies were more explicit about the approach (gender-responsive or gender-transformative) to be applied in the respective CRP. Likewise, more strategic thought could be given to the question of whether the respective CRP should have a dedicated gender component.

59 CGIAR Consortium (2011 b): Consortium Level Gender Strategy.

60 The Consortium Level Gender Strategy specifies that CRPs should clarify in the formulation of their research objectives "whether gender is a separate component of the CRP's agenda (it undertakes strategic research) or is a cross-cutting thematic area in which analysis is used to inform and deepen the relevance of other research themes." (CGIAR, 2011, p. 6).

## 6.3 CREATING AN ENABLING ENVIRONMENT FOR GENDER RESEARCH

### FUNDING FOR GENDER RESEARCH

The CRPs were requested to report funding on gender from 2013 onwards, but not all evaluations have reviewed how this provision was implemented. Evaluations that specify gender funding as a percentage of total budget found mixed results partly because no standard guidelines were used to count spending on gender. The Humidtropics evaluation concluded that the CRPs own goal of reaching 30% was met, the highest of any CRP. The WLE evaluation noted that WLE was one of the first CRPs to institute the obligatory 10 % gender budgeting across the program but the researcher survey suggested that "that in order to meet the 10 % gender expenditure guidelines, some researchers have had to introduce gender components that they do not consider to be totally relevant to their work". (WLE evaluation draft, p.75;)[61]. Although the WHEAT evaluation found the budgeted funding for gender increased to 16% in 2014, actual spending on gender in 2012 and 2013 was less than half of the budgeted amount. Grain Legumes reported a figure of only 4% to gender. An important finding from the evaluations of most CRPs is that most funding for gender was provided by W1/W2 funding (GRiSP, FTA, MAIZE, RTB, WHEAT).

### CREATING POSITIONS AND ORGANISATIONAL UNITS TO SUPPORT GENDER RESEARCH

The evaluations document that the CRPs used several approaches to create positions and organizational units to support gender research:

- Gender Coordinators/Gender Units: Several evaluations found that dedicated gender units where established (at least Dryland Cereals, CCAFS, MAIZE, RTB, WHEAT and WLE).
- Focal points: Three CRP evaluations (FTA, GRiSP, RTB) refer to the appointment of CRP Gender Focal Points by the CGIAR Centers participating in the CRP, but other CRPs may also have used this approach.
- Gender Teams: Some CRPs constituted gender teams comprising staff with gender expertise who work in different components and are "mapped" into the gender team. For example L&F and FTA have teams of about 5 gender specialists operating across participating centers.

### CAPACITY DEVELOPMENT OF STAFF

The CGIAR Gender Strategy requested each CRP to review its capacity for gender analysis and gender research [62]. According to the evaluations, the main capacity development activities for gender included training workshops (e.g., Grain Legumes, MAIZE), coaching of research teams by gender specialists, the development of tools (handbooks, guidelines, etc.) for gender research (e.g., A4NH, AAS), and the integration of gender components into different research tools used by the CRPs.

With regard to tools, PIM provided leadership in developing "Standards for Collecting Sex-Disaggregated Data for Gender Analysis," which were endorsed by the Consortium Office. PIM also

61 It has to be noted that "Flagship leaders can decide with their teams whether all projects include a gender budget or whether 10% of the overall research budget should be allocated to gender. Based on interview data, early indications are that gender work in flagships that have chosen to allocate larger amounts of funding to a few projects is having a greater impact" WLE Evaluation, p. 75.

62 CGIAR Consortium (2011 b).

developed several useful tools for analysing gender in value chains and that are available to other CRPs through the Value Chains Knowledge Clearinghouse. The RTB evaluation found that the participatory manner in which tools were developed contributed to buy-in and adoption. A4NH developed a guidance document on integrating gender into research plans, and this CRP was also commended for hosting a monthly blog with in-depth technical advice on gender. The three Systems CRPs made similar efforts to develop guidelines for integrating gender into bio-physical research [63] (e.g., AAS Science Handbook) and a toolkit on gender-responsive research and gendered systems research.

### PARTNERS FOR GENDER RESEARCH

A CGIAR Gender and Agriculture Research Network was established by the Consortium Office in 2011 to facilitate partnering among the CRPs but the Network does not feature strongly in the evaluations. Several evaluations point to the role of non-CGIAR partners with specific expertise in gender, which contributed to strengthening the capacity for gender research in the CRPs (KIT for MAIZE, WHEAT and L&F, the University of East Anglia and Johns Hopkins University for AAS and Wageningen University for WLE). The PIM evaluation praised the collaboration of PIM with FAO for its potential to influence national governments collection and use of sex-disaggregated data. Several evaluations (e.g., AAS, GRiSP) point out that the CRPs have partnered with local NGOs to better reach female farmers in participatory research and extension-type activities and in strengthening gender capacity in NARS. The RTB and L&F evaluations refer to the role that the CRPs played in strengthening the gender research capacity of their research partner organizations, specifically the NARS.

### STAFF PERCEPTIONS ON GENDER MAINSTREAMING

Staff perception assessed through the researcher surveys are an important indicator of success in creating an enabling environment for gender research within the CRPs. Comparable findings from eight CRPs indicate that the CRPs often faced challenges in getting buy-in of staff for their Gender Strategies. With the exceptions of WHEAT and AAS, more than 30% of the respondents disagree at least to some extent with the statement that the CRP Gender Strategy has been well communicated to teams and researchers. Likewise, again with the exception of WHEAT and AAS, almost 40% disagree, at least to some extent, that the gender and equity strategy influences the way in which their team plans and conducts their work (Table 7). Of particular interest with regard to buy-in is that at least 20% or more of the respondents agreed or strongly agreed with the statement “There is too much emphasis in gender, even in research where gender does not matter” and even higher percentages for MAIZE, RTB and WLE. Also revealing is that the share of male respondents who strongly agreed with the statement on over-emphasis of gender was higher than that of the female respondents except in L&F.

63 See for example the AAS Science Handbook (Puskur R. (2014).

TABLE 7: STAFF PERCEPTIONS ON GENDER* [64]

| Statement | AAS | WHEAT | MAIZE | GRISP | RTB | L&F | WLE | CCAFS |
|---|---|---|---|---|---|---|---|---|
| The CRP gender strategy has been well communicated to teams and researchers. | 4.6 | 4.1 | 3.9 | 4.1 | 4.1 | 4.1 | 3.9 | 3.8 |
| The CRP gender strategy influences the way most teams plan and conduct their work. | 4.5 | 3.8 | 3.7 | 3.5 | 3.6 | 4.0 | 3.6 | 3.5 |
| The CRP gender and equity strategy influences the way my team plans and conducts its work. | 4.8 | 4.0 | 3.7 | 3.8 | 3.8 | N/A | 3.8 | 3.5 |
| Gender dis-aggregated data on results are collected whenever appropriate. | 4.8 | 4.3 | 4.4 | 4.3 | 4.4 | 4.7 | 4.6 | 4.6 |
| There is sufficient funding to implement the gender-related activities. | 4.2 | 3.9 | 3.5 | 3.6 | 3.2 | 3.6 | 4.0 | 3.8 |
| There is too much emphasis in gender. | 3.1 | 3.9 | 4.0 | 3.8 | 3.9 | 3.3 | 3.8 | 3.2 |

* Cells display average rating of responses on a scale from 6 (strongly agree) to 1 (strongly disagree).
The survey question was: "Please rate your agreement with the following statements that relate to mainstreaming of gender issues in your work and the CRP"

Source: IEA researcher surveys, compiled by Sophie Zimm

This finding requires more analysis to know to what extent these ratings are based on a well-justified concern that gender work is pushed in areas where it is indeed not relevant, and to what extent these statements reflect resentment about the way in which gender issues are being promoted within the CRPs. Addressing the first would require changes in priority setting for gender research, while addressing the second reason would require changes in the approaches to mainstreaming gender in the CRPs. The "backlash" problem is well known in the literature on gender mainstreaming, and the findings indicate that this might be an issue to be considered in the future gender work of the CRPs, and in future evaluations.

### EMERGING LESSON ON THE ENABLING ENVIRONMENT FOR GENDER RESEARCH

Overall, the available evidence suggests that not all evaluations reached the 10% target set by the Consortium. A variety of organizational structures have been created within the CRPs to support gender research, but it was probably too early to assess their effectiveness. The evaluations certainly document a ***wide range of efforts to create an enabling environment for gender research*** and they provide numerous examples, especially regarding the development of tools and guidelines. It is also clear from the evaluations that there are wide variations in efforts across CRPs, but no clear trends among groups of CRPs could be observed. What the researcher surveys certainly show is a ***need to pay more attention on how to get the buy-in of staff for gender mainstreaming, especially buy-in of male staff members***.

64 Comparable questions were not provided in the PIM and A4H staff surveys, two CRPs with a strong legacy of gender research.

## 6.4 EVIDENCE OF GENDER MAINSTREAMING IN RESEARCH ACTIVITIES AND OUTPUTS

The CGIAR Gender Strategy requested the CRPs to establish a monitoring and evaluation (M&E) system to track progress towards gender-responsive objectives and to include gender in its impact assessments (p. 6). Some evaluations report on efforts to include gender in M&E activities (GRiSP, MAIZE, PIM, WHEAT) and the picture that emerges is that this is still work in progress. Systematic assessments in PIM and A4NH suggest that in the order of 30-35% of their CRP portfolio is explicitly addressing gender issues. However, the FTA evaluation, noted that "only" 45% of the project proposals that were reviewed integrated gender aspects, with no visible trend for improvement over time. (FTA evaluation, p. xv).

Almost every evaluation presented some examples of interesting gender research that had been conducted under the CRP. The evaluations of Dryland Cereals, GRiSP and WHEAT also document a range of successful initiatives for involving women in field research activities, such as participatory breeding and participatory technology development. These accounts are anecdotal rather than analytical, but they illustrate a wide array of interesting gender work, ranging from involving ex-combatant women in Burundi in rice enterprises to mapping the land use perceptions of male and female farmers in a trans-disciplinary socio-hydrology project in Ethiopia.

The collection of gender-disaggregated data is one of the activities foreseen in the CGIAR Gender Strategy, and several evaluations comment on progress made in this direction. In most CRP researcher surveys, more than half of the staff members believe that gender disaggregated data on results are collected, whenever appropriate. However, it is not clear how these data are being used since beyond descriptive data few evaluations found publications that report or analysed sex-disaggregated data (noted in the evaluations of GRiSP, L&F, WHEAT).

The quality of the gender research also requires specific attention since there is the "risk of mainstreaming a quick, low-cost 'gender fix' versus an evidence-based research process that uses quality social science", a problem that may be accentuated by a pressure to report rapid progress on mainstreaming [65]. Indeed, several evaluations (Dryland Cereals, GRiSP, L&F, WHEAT) commented on the low or mixed quality of gender research to understand social and cultural systemic barriers to women's equitable access to opportunities and resources or the impacts of technology adoption or policy interventions on women. However, the A4NH evaluation found that gender work in this CRP is consistently promoting high-quality research, both in its own strategic research program and throughout its mainstreaming work.

### EMERGING LESSON ON GENDER MAINSTREAMING

Overall, the evaluations point to a trend towards increased collection of gender-disaggregated data, which has not yet been matched by investments in the rigorous analysis and use of these data. It also appears that qualitative research has played a less important role, which is not surprising conside

65 quote from Ashby (2012) in A4NH evaluation, Background Papers, p. 46

ring the low representation of social science disciplines that specialize in qualitative research methods, such as sociologists and anthropologists (see Section 4.1.). Insights from the sociological literature, for example, draw attention to topics such as social constructions of masculinity in agriculture[66], which may well be relevant for CRP research.

***CGIAR has a unique potential for bringing gender topics into the mainstream literature on agricultural development*** - an important impact pathway for CRPs. Using this pathway requires innovative high-quality publications that demonstrate the importance of addressing gender issues in different fields of agricultural research, including crop, livestock and fish production as well as natural resources management, farming systems research, research on agricultural innovation and policy research. IFPRI's earlier work on intra-household analysis is a good example of achieving impact by "changing minds" and contributing to research as an international public good [67]. To what extent the CRPs are on the way to realizing this potential might be addressed in future gender-specific evaluations.

## 6.5 GENDER IN THE WORKPLACE

Promoting gender equality in the workplace is the second element of the Consortium Level Gender Strategy [68]. According to the Consortium Strategy, key areas of attention include recruitment, employment, retention, promotion and training. This component of the Gender Strategy focuses on human resource management, and builds upon the CGIAR's previous Gender and Diversity Program. However, most of the Evaluations Reports of the CRPs do not assess the role of gender in the work place, neither in the gender sections nor in the sections on governance and management.

The limited information that is provided by the evaluations suggests that there is still a long way to go. The MAIZE evaluation found that among scientists, team leaders and senior management, only 18% were women. The Dryland Cereals evaluation noted that it was not possible to get of numbers of men and women staff who are working in this CRP, an indication of lacking ability to track relevant information on gender in the workplace. The Grain Legumes evaluation noted a wide variation in the share of female staff across product lines from 10% to 30%. These evaluations emphasize the need for a more gender-conducive working environment.

The evaluations also observed positive achievements. The AAS evaluation found that 44% of the international personnel working on AAS are women, even though the picture was less balanced at country level, particularly in Bangladesh. The WLE evaluation positively noted that WLE had made efforts to ensure that women are present in all aspects of management.

66 See for example Peter, Gregory, Mayerfield Michael and Jarnagin, Susan (2000): Coming Back Across the Fence: Masculinity and the Transition to Sustainable Agriculture. Rural Sociology 65(2).

67 Jackson, Cecile (2005): Strengthening food policy through gender and intrahousehold analysis - impact assessment of IFPRI multicountry research.

68 CGIAR Consortium (2011 b).

### EMERGING LESSON ON GENDER IN THE WORKPLACE

The overall picture that emerges from the evaluations is that, with some exceptions, the role of gender in the workplace - the second major pillar of the CGIAR Gender Strategy - has received less attention than the first pillar (mainstreaming gender in in CRP research). Since the Centers have largely retained the authority over human resource management, leadership of the Centers may have a larger role to play than CRP leadership in changing this situation.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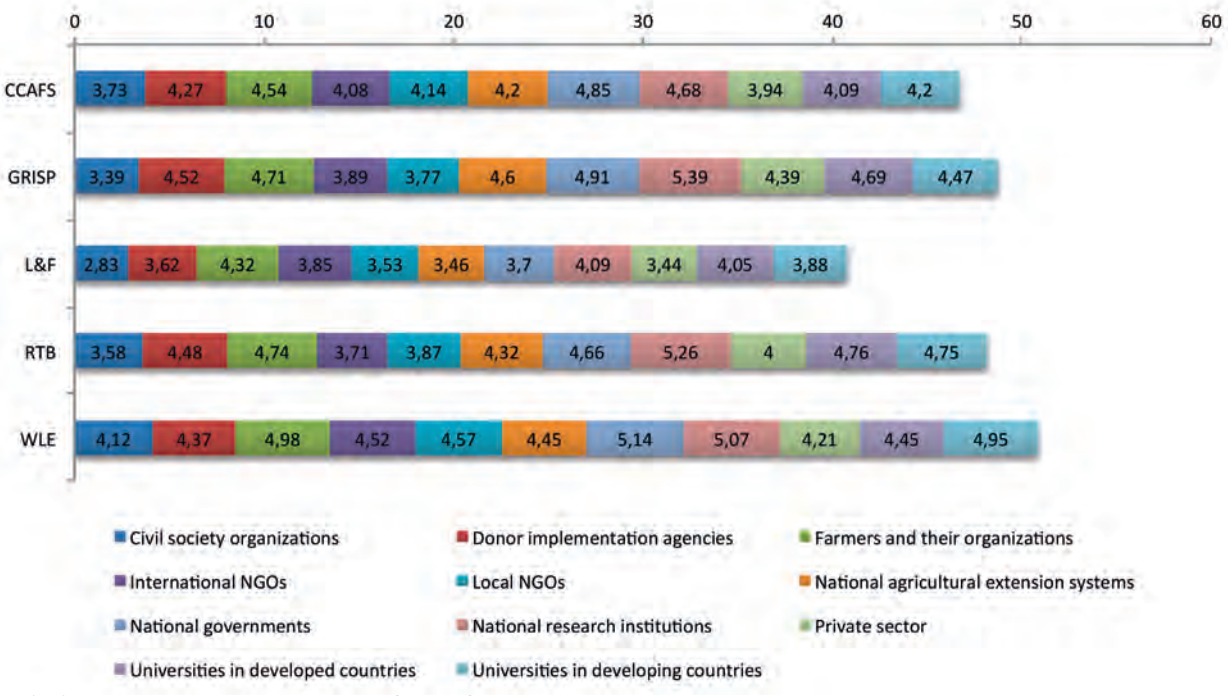
# 7.PARTNERSHIPS AND CAPACITY DEVELOPMENT

## 7.1 PARTNERSHIPS

CRPs have a large number of partners, reaching up to 900 for a single CRP. They play an important role for achieving impact. CRPs use various ways to classify partnerships in their planning and reporting documents. A basic distinction is usually made between partnerships with research organizations located in the target countries (National agricultural research system -NARS, universities) and in developed countries (ARIs) on the one hand, and partnerships with organizations that are relevant for achieving impact (e.g., governments, NGOs, private sector) on the other hand. (They are hereafter referred to as "development partners").

Many evaluations found that the choice of partners was often based on legacy research and on seizing opportunities, rather than on a systematic and strategic selection process. Even in those cases where CRPs had developed a formal Partnership Strategy (e.g., A4NH, CCAFS, WLE), the evaluations saw room for improvement, especially in terms of providing clear operational guidelines for the choice of partners. As noted in some evaluations (e.g., PIM), the choice of partners should be guided by the ToC and the Impact Pathways, but in practice, this link seems to be still evolving. Figure 4 below displays the results of the available researcher surveys regarding the perceived importance of different types of partners.

FIGURE 4: STAFF PERCEPTIONS OF THE IMPORTANCE OF DIFFERENT TYPES OF PARTNERSHIPS*




Source: IEA researcher surveys, compiled by Sophie Zimm

## PARTNERSHIPS WITH NATIONAL RESEARCH ORGANIZATIONS

For the C - CRPs the public NARS continue to be key partners, building on decades of CGIAR partnership. For most of the NC - CRPs, including those not listed in Figure 4 above, national research organizations were also identified as the most important partners. However, they include not only organizations that conduct research on agricultural production (as is typical for the NARS), but also a range of other research organizations, including, e.g., policy think tanks.

The feedback to the evaluation teams from NARS through partner surveys, field visits and interviews, was overwhelmingly positive. NARS highly appreciated the ready access to superior germplasm, management technologies, and the funding and training opportunities offered by the partnerships. They also appreciated the opportunity to participate in regional planning workshops and research networks.

However, several CRPs noted limitations regarding the nature of the involvement of national research organizations [69]. They are mostly involved in research implementation and outreach, but less in research prioritization, project planning and design, and publishing research results, including co-authorship. As noted by the A4NH evaluation, partners are typically subcontractors, which often creates an unequal balance of power in the relationship.
This problem is also evident in the feedback from advanced NARS, notably the NARS of India, China, Turkey, and Brazil, that have many of the characteristics of advanced research institutes discussed below.

69 Based on staff and partner survey results, the PIM evaluation found that CGIAR staff uniformly perceive their partners to be more involved in their research activities than the partners themselves perceive this to be the case.

While these advanced NARSs were important participants in almost all CRPs, they felt they could contribute much more to the global research partnership through their strong research capacities (as noted in the evaluations of, e.g., GRiSP, WHEAT, Grain Legumes). Further these NARS, especially those from India, would like more up front involvement in the CRP design.

For the other NARS, there is an ongoing tension on the amount of funding and capacity development opportunities provided by the CRPs. Almost all these NARS and especially those in Africa are under-resourced from national budgets and depend on external contributions. Funding from the CRPs is often critical in providing the operating budget to their corresponding national commodity research programs. However, available funding form the CRPs is necessarily constrained given the number of NARS, and variable depending on the vagaries of W1/W2 funds and bilateral projects. As further discussed in the Sections on Governance and Management, limited opportunities for NARS to participate in the CRP's governance bodies and the absence of rules on partner funding contributes to these tensions about funding.

Funding in these partnerships works, however, the other way as well. Some of the larger partner countries, especially countries that host CGIAR Centers, such as India, Philippines, Nigeria, Mexico and Colombia, are now funding CRP activities in their countries mainly for technology transfer and training. The evaluations did not critically review this relatively recent development but it did raise questions about both the capacity of these national systems as well as the role and comparative advantage of CRPs to engage in such downstream activities.

### PARTNERSHIPS WITH ADVANCED RESEARCH INSTITUTIONS

For the C-CRPs, the number and quality of partnerships with ARIs are generally rated as good. For the C-CRPs, the evaluations highlighted the important role of these partnerships in accessing the most recent science and in enhancing the quality of science in CGIAR through collaborative research, co-authorship and joint supervision of graduate theses. Some of these partnerships are developing into important global networks such as the International Rice Informatics Consortium, the International Wheat Yield Consortium, the Global Cassava Partnership, and ProMusa. The surge in interest in genomics/phenomics of crops relevant to the CRPs in ARIs provides an opportunity to deepen these partnerships.

For the NC-CRPs, the picture was somewhat mixed. Some CRPs benefitted from traditionally strong relationships with ARIs (e.g., A4NH, PIM, WLE), whereas for some others, the evaluations noted that new partnerships with leading ARIs or research networks would be beneficial to support specific research areas (e.g., AAS, Dryland Systems). Such partnerships could also help to address deficits in the skill mix, which have been noted in some evaluations (see Section 4.1 above).

### DEVELOPMENT PARTNERS

Engagement with development partners is a critical link in the R4D paradigm. Most C-CRPs have good links with development projects as part of their scaling out strategies. However, the evaluations often questioned the comparative advantage and impact pathway of engaging with large-scale extension-type activities, as further discussed below. Within the three Systems CRPs, which have a strong emphasis on participatory action research approaches, partnerships with development organizations were found to play a particularly important role. Acknowledging this role, AAS has involved two representatives

for development organizations in the Program Leadership Team. In Humidtropics and Dryland Systems, a diverse range development organizations play a key role in the innovation platforms established by these CRPs. Some evaluations noted that CRPs could benefit from the fact that participating centers have different types of partnerships. An example is PIM, which benefits from combining IFPRI's strong partnerships with national governments and the strong NGO partnerships of the other participating Centers.

### PRIVATE SECTOR PARTNERS

Most C-CRP evaluations noted a growing engagement with the private sector, especially seed companies and tissue culture labs, or in some cases (e.g., Legumes) CBOs and NGOs with capacity in seeds. The CRPs now reach a large number of seed companies (MAIZE with 110 in Africa alone). Harmonization of seed laws and exchange within regions such as West and Central Africa and South Asia (rice only) is greatly facilitating this interaction, but seed exchange and varietal release procedures remain a major constraint in other regions. CRPs are also engaged with companies in processing and other value adding activities (e.g., RTB) and these partnerships are increasing as the value chain activities of the CRPs expand.

Among NC-CRPs, on the WLE evaluation noted a substantial involvement of private sector partners, especially manufacturers of irrigation technologies and beverage companies with an interest in water management. WLE was also found to be working with large-scale multinational companies (such as Unilever and Nestle) who are interested in incorporating sustainability into their operations. The A4NH recommended that A4NH adopts and widely publicizes a private sector engagement policy, which was seen as important not only for practice but also for reputation management as A4NH takes on new work in Food Systems that will engage more private sector partners. Considering the controversies surrounding multi-national companies in the development debate, this advice may be relevant for other CRPs, as well.

## 7.2 CAPACITY DEVELOPMENT

CRPs engage in a wide range of capacity development activities, mostly targeting the national research and development partners discussed in the previous section. Several evaluations (e.g., AAS, CCAFS, PIM, WLE) point out that these activities have not been guided by an explicit capacity development strategy, and criteria for priority setting were often not clear. There is, however, a trend towards a more strategic approach, since the CGIAR Capacity Development Community of Practice prepared a Capacity Development Framework for the 2nd Round of CGIAR Research Programs [70]. Dryland Systems already developed a capacity strengthening strategy in 2014, which the evaluation found to be well-planned and comprehensive.

The C-CRPs allocate the bulk of their capacity development activities to public NARSs, including universities. Many NARSs depend heavily on the short term and graduate training opportunities offered by the CRPs. Most of these training opportunities were from bilateral projects, but GRiSP and Dryland Cereals provided scholarship programs from W1/W2 funds while RTB and L&F that have access to state-of-the-art laboratories in Africa were magnets for African postgraduate students. It is worth noting that

70 CGIAR Consortium (2015 b): Capacity Development Framework for the 2nd Round of CGIAR Research Programs.

these laboratories, IITA's Bioscience and ILRI's BeCa [71], are the result of long-standing investments of the Centers, from which the CRPs could benefit in their capacity development activities. Staff surveys indicate that funding for capacity development was often perceived to be insufficient (e.g., WHEAT, MAIZE). The reduction in training opportunities including short-term training with the budget cuts in 2014 and 2015 was a serious blow to this highly valued dimension of the partnership.

One type of capacity development activity that is widespread in C-CRPs, but also in others (e.g., AAS and A4NH), is the capacity development of farmers through training and extension activities. As highlighted in the annual reports of those CRPs, tens of thousands of farmers are being trained, often under large-scale bilaterally funded projects. The evaluations, as noted above, often questioned the comparative advantage of CGIAR for such large-scale extension activities. This question has long been debated in CGIAR, but the evaluation findings indicate that the topic remains unresolved and requires further attention[72].

### EMERGING LESSONS ON PARTNERSHIPS AND CAPACITY DEVELOPMENT

Overall, the evaluations were mostly positive on partnerships and capacity development, but called for more strategic approaches. Challenges and lessons for the future that can be derived from the evaluations include:

- developing of explicit partnership strategies as well as capacity development strategies; linking these strategies to each other and to the ToC and Impact Pathways; providing operational guidelines and criteria for selecting partners, and for prioritizing capacity development activities;
- understanding the capacities of different types of NARSs and other types of research partners in the target countries, and ensuring appropriate funding to leverage maximum capacity development;
- engaging the research partners in the South along the entire research process from research design to co-authored publications, and addressing the power imbalances that may result from their role as subcontractors;

71 BecA stands for "Biosciences eastern and central Africa". The BecA-ILRI Hub is a shared agricultural research and biosciences platform located at and managed by ILRI in Nairobi. It was established as part of the African Union/ New Partnership for Africa's Development (AU/ NEPAD) African Biosciences Initiative. See http://hub.africabiosciences.org/aboutbeca .

72 Considering that the large-scale extension activities are typically funded through bilateral projects, this question needs to be addressed by the donors. As pointed out in the AAS evaluation, large-scale extension activities may not only be outside the comparative advantage of CGIAR; setting up a large-scale donor-funded CGIAR extension machinery in parallel with the public sector extension system may also undermine the incentives of the respective countries to strengthen their own innovation systems.

- maintaining the long-standing and highly valuable partnerships with ARIs in core areas of CGIAR research, and developing new partnerships with internationally leading research groups for new areas in the CRP portfolio;
- developing and publicizing private sector engagement policies with a view developing new impact pathways while at the same time managing reputational risks.


# 8. GOVERNANCE AND MANAGEMENT

## 8.1 CONTEXT

The creation of the CRPs, as a major element of the CGIAR reform, introduced a matrix structure into CGIAR. The evaluations reflect that, expectedly, this matrix structure created considerable challenges for governance and management. CGIAR had prior experience with programs that cut across Centers, such as the CGIAR Challenge Programs or the System-Wide Programs. A systematic analysis of the experience with the governance and management of such programs was apparently not conducted, and at the time when the proposals for the first phase of the CRPs were drafted, there was limited guidance on the design of the governance structures and management arrangements. The guidance document for the proposals of the first phase (Fund Council, 2010) included "appropriateness and efficiency of Program management" as a criterion for approval, but it was basically left to the CRP drafting teams to design a governance and management structure that they saw fit. As a consequence, a variety of governance and management structures emerged, which differ widely across CRPs. These arrangements were not necessarily in line with the provisions for CRP governance and management that were then formulated in the SRF of 2011 (p. 77). The SRF established that the Lead Center has fiduciary and operational responsibilities vis-à-vis the Consortium Office and the Fund Council and that the Lead Center, in consultation with other participating Centers, will appoint a Director for the CRP. Moreover, SRF foresaw (i) the creation of a Planning and Management Committee comprising members of all participating Centers as well as non-CGIAR partners involved in CRP implementation, and (ii) the establishment of a committee that would advise, report, and be accountable to the Planning and Management Committee.

Starting in 2013, at the request of the Consortium Office, IEA carried out a "Review of CRP Governance and Management" (referred to as RPGM), which was published in March 2014 [73]. All CRP evaluations use the terms governance and management in the same way as the RPGM [74]. Accordingly, the term governance refers to the "governing bodies" at CRP, Center and CGIAR levels, which are in charge of strategic direction, management oversight, stakeholder participation, risk and conflict management as well as audit and evaluation. Management refers to the activities by program leaders/directors, management teams and management committees, which fulfil the functions of program implementation, regulatory compliance, reviewing and reporting, and ensuring administrative efficiency (p. 23-24).

As shown in Table A 3 in Annex 1, at the end of the evaluation period, all CRPs had created three types of organizational structures for governance and management: (1) an advisory, steering or oversight committee as the main governance body; (2) a management or leadership committee, which - depending on the composition - has governance as well as management functions; and (3) a management unit, which is typically rather small, comprising the CRP Director and staff specifically hired to support the management and administration of the CRP. The findings of the evaluations regarding the functioning of these governance and management bodies are discussed in the following.

## 8.2 GOVERNANCE

### ORGANIZATIONAL STRUCTURE OF CRP GOVERNANCE

One of the main findings of the RPGM was that CRP governance could be simplified to clarify roles and increase efficiency and effectiveness. RPGM aimed to provide principles that support good governance and effective management rather than a rigid set of structures (Robinson et al., 2014: 14). As one of these principles, RPGM recommended the establishment of only one governance body for each CRP which should include a majority of independent expert members, and accommodate Lead Center and partner representation. This governance body is expected to have both advisory and oversight functions. RPGM informed a Fund Council – Consortium Office agreement on the future governance and management structure of CRPs, which was more rigid than recommendations [75].

Table A 3 in Annex 1 displays the names and compositions of the governance bodies that the CRPs had established at the end of the evaluation period. Their size and composition varies, but in the case of all CRPs, at least half of the members (including the chair) are external. They include eminent scientists and to some extent also representatives of stakeholder groups. The names of these governance bodies differ. Some names focus on the steering function (e.g, WHEAT and MAIZE have an "Independent Steering Committee"), some on the oversight function (e.g., GRiSP has an "Oversight Committee" and AAS has a "Program Oversight Panel"), and others on the advisory function (e.g., PIM has a "Science and

73 IEA (2014). Review of CGIAR Research Programs Governance and Management - Final Report http://iea.cgiar.org/sites/default/files/Final%20report%20CRP%20G%26M%201%20April%202014_0.pdf

74 In defining these terms, RPGM made reference to a Sourcebook on evaluating global partnerships published by the World Bank's Independent Evaluation Group (IEG, 2007). As pointed out in the Sourcebook (IEG, 2007: 71), governance refers to the "authorizing environment" of a program, where as management refers to the day-to-day activities. The boundary between governance and management is, however, not clear cut (IEG, 2007: 71), and this is also the case for the CRPs.

75 http://iea.cgiar.org/sites/default/files/FC_CB_Agreement%20on%20CRP%20Governance%20Structure.pdf

Policy Advisory Panel and A4NH has an "Independent Advisory Committee"). Governance bodies that, in line with RPGM recommendations, have both advisory and oversight functions include the DGs of participating Centers next to external members. In case of GRiSP, WHEAT, AAS, Dryland Systems and CCAFS, one or more members of the BoT of the Lead Center or participating Centers are also members of that governance body. The CRP Director and the DG of the Lead Center are usually as ex officio members. CRPs with governance bodies that only have advisory functions are either mostly or only comprised of external members (as in case of L&F and PIM) or they do not assign voting rights to Center and BoT members (as in case of CCAFS) [76].

### CRP GOVERNANCE CHALLENGES AND THEIR MANAGEMENT

With a view to the question how governance and management in the next phase of the CRPs should be structured, it is interesting to note what the evaluations found regarding the recommendation that each CRPs should have only one governance body with advisory and oversight functions, which includes Center representatives as well as independent experts and non-CGIAR partners. As pointed out in the PIM evaluation, this governance structure aims to fit the "hybrid nature" of the CRPs. On the one hand, CRPs are comparable to grant-giving organizations, which allocate the W1/W2 funds that they receive from the Fund Council to the participating CGIAR and non-CGIAR partners. On the other hand, they are collective action institutions, in which the Centers pool their W3 and bilateral resources to implement a joint program. These CRPs need to manage important governance challenges that are inherent in the hybrid nature.

One challenge is the potential of "organizational capture"[77] . The fact that the Lead Center has the ultimate fiduciary and operational responsibility for the CRP vis-à-vis the funders may create a disincentive to fully share governance and management authority with other the Centers and external partners.

Another challenge is the classical problem of collective action, which has several implications for CRPs. One is that Center representatives in governance bodies who decide on the allocation of W1/W2 funding have a potential conflict of interest between allocating funds in the best interest of the CRP, and ensuring funding for their own Centers. The abolishment of core funding exaggerates this problem, as noted in the PIM evaluation. Another implication of the collective action problem is the conflict of interest between investing in the branding of the CRPs (from which other participating Centers benefit) and investing in the branding of the Center. This conflict of interest also applies to the Lead Center, which could otherwise been expected to invest in the branding of the CRP on behalf of all participants. Managing such collective action challenges is especially problematic for CRPs that have many participating Centers, because not all of them can be involved in a governing body that is supposed to have a majority of external members. The benefits that the Centers can derive from collaborating in the CRPs, e.g., by

76 As can be derived from Table A 3 in Annex 1, the CRPs have followed the RPGM recommendations in so far as those CRPs that had both an advisory and an oversight committee (RTB, Dryland Cereals and Dryland Systems) have now replaced them by one single governance body with both types of functions. However, other RPGM have not been fully implemented: Not all CRPs have governance bodies with oversight functions, and several CRPs have management committees that include Center representatives and may be seen as having governance functions (see Section on Management below).

77 However, CRP management rejected the recommendation relating to the Program Oversight Panel.

using complementary assets and exploiting economies of scale (see Section 9 on Value Added), will provide incentives to overcome the collective action problems of CRP management. However, since the Centers do not have core funding any longer, it is reasonable to expect that funding considerations play an important role in their decisions on issues such as CRP branding.

CRP evaluations show a mixed picture regarding the extent to which the recommended governance structure has been conducive to address the governance challenges outlined above. CCAFS, GRiSP, MAIZE, RTB and WHEAT had the recommended governance structure, and the evaluations found that, overall, governance was performing well. The RTB evaluation pointed out that it was too early to assess the performance of the new governance body. The Dryland Cereals evaluation noted that the simplification of the governance structure had reduced transaction costs.

The other evaluations identified various problems with regard to the advisory/oversight bodies of the CRPs. The Grain Legumes evaluation was the only one that criticized the institutional set-up of having only one main governance body with advisory and oversight functions. It found that combining the Steering Committee with the Independent Advisory Committee made the new governance body unwieldy in number and annulled any sense of independence in advice offered to the Grain Legumes management. The evaluation strongly recommended a reassessment of this approach.

Other evaluations did not criticize the institutional set-up, but rather noted problems regarding the processes required to make this structure work. The AAS evaluation found that the Program Oversight Panel had not been able to effectively fulfil the oversight function that was assigned to it [78]. This was particularly problematic because the WorldFish BoT had abolished its programmatic oversight function for AAS when the CRP's Program Oversight Panel was established. The A4NH evaluation identified a similar problem. The Lead Center's BoT considers detailed technical oversight to be the responsibility of A4NH's Independent Advisory Committee. However, the time and the resources available to the Independent Advisory Committee do not allow its members to exercise a real oversight function [79]. A similar problem was identified for PIM. The GRiSP evaluation noted that the ability of the Oversight Committee to perform its oversight function would be enhanced by the capacity to enlist outside expertise on particular topics. The FTA evaluation criticized the lacking ability of the CRP's Steering Committee to set strategic priorities and influence resource allocation. It recommended strengthening and clarifying the mandate and the independent voice of the FTA Steering Committee. WLE was the only CRP for which the opposite problem was identified: The Steering Committee was considered to be too directional.

The evaluations imply that the problems of organizational capture and collective action outlined above have been resolved to a various degree. On the positive side, the FTA evaluation noted that the Lead Center's (CIFOR's) BoT and management have carefully avoided imposing themselves on other FTA Participant Institutions, thus avoiding the problem of organizational capture. The flipside of this approach, as the evaluation noted, was that the Lead Center representative has difficulties to freely express legitimate Center interests. This may impose risks for the Lead Center, since it has operational and fiduciary

78 See also IEG -World Bank (2007): Sourcebook for Evaluating Global and Regional Partnership Programs – Indicative Principles and Standards.

79 Both the AAS and the A4NH evaluations concluded that the external members of the CRPs' independent oversight bodies should allocate a larger number of days to the task, and that they should be paid to be able to effectively exercise an oversight function rather than merely provide advice.

responsibility for the CRP. While the FTA evaluation was most explicit in discussing this problem, it is a generic challenge inherent in the current structure of CRP governance. Problems of collaboration between Centers were also observed, and they often manifested themselves in controversies about the allocation of W1/W2 funds (see below). In the case of PIM, this problem seemed particularly pronounced [80], but lack of transparency of allocating W1/W2 funds was also identified in other CRPs. Another governance problem was observed for Grain Legumes and Dryland Cereals. ICRISAT had continued to operate a Dryland Cereals and a Grain Legumes program at Center level, which have their own management structures, but have the same names as the respective CRPs. As the Dryland Cereals evaluation noted, this led to confusion over the roles of the different governance bodies. The underlying problem is the collective action problem indicated above (limited incentives to invest in CRP vis-à-vis Center branding).

Adopting policies to manage conflict of interest (as recommended by RPMG) would be important to address the challenges of organizational capture and collective action in CRP governance. The PIM and A4NH evaluations note that existing policies on conflicts of interest focus on individual rather than institutional conflicts of interest. They recommend updating these policies to address the institutional challenges of conflict of interest inherent in CRP governance. This recommendation likely applies to the other CRPs, as well

### INCLUSIVENESS OF CRP GOVERNANCE

The CGIAR reform created new opportunities to involve partners and stakeholders into governance bodies and to address issues of gender and diversity in the leadership of CGIAR research. The RPGM findings indicate that this opportunity had not yet been realized, considering that less than 25% of the members of CRP governance bodies came from the target regions of CRP research, and less than 25% were women. The CRP evaluations did not assess inclusiveness of governance and management in a systematic way. They provide some evidence of efforts to increase female membership in governance bodies, e.g., in case of Grain Legumes, but inclusiveness in terms of members from target regions in CRP governance was hardly assessed. There is, however, no indication that inclusiveness of governance has substantially increased since RPGM was conducted [81]. The Grain Legumes evaluation, for example, criticized the poor representation of partners from the target regions, particularly NARS, in CRP governance. The shift to creating only one single governance body for the CRPs that involves Center representatives as well as external members leaves very few seats to such stakeholders, as the current composition of CRP governance bodies shows.[82] Thus, they have limited possibilities to have a say in priority setting and in the allocation of funds to non-CGIAR partners. Unlike the earlier CGIAR Challenge programs, CRPs have no

80 The evaluation found that principle investigators in the participating Centers perceived allocation of W1/W2 funds to have become increasingly biased in favor of the Lead Center. The share of W1/2 resources allocated to IFPRI increased from 48% in the initial 2012 research budget allocation to 68% of the 2015 research budget, not including the budget for the PIM Management Unit or the co-financing of IFPRI's bilateral activities (PIM Evaluation p. 87). The Evaluation did not perform its own assessment of whether the increase in budget was justified, e.g., according to performance criteria, but it noted that that the widespread perception of bias was a major problem.

81 See CRP websites that display the composition of CRP governance and management bodies. The leadership of CRPs may serve as an example. As of March 2016, 4 of the 15 CRP Directors were female (one of them acting), and 3 were from target regions. (See CGIAR website, accessed March 30, 2016. The count takes into account the appointment of a female Acting CRP Director for WLE and the apointment of a Director for MAIZE, which were not yet reflected in the website).

82 See CRP websites that display the composition of CRP governing bodies.

rules on the allocation of funding shares to non-CGIAR partners in the target regions, such as NARS [83]. This challenge seems to have been neglected. Since inclusiveness is essential for the legitimacy of CRP governance, this problem requires attention.

### EMERGING LESSONS ON GOVERNANCE

The governance structures of CRPs were evolving during the evaluation period. Since all CRPs have moved to a single governance body (steering committee) that is supposed to have oversight as well as advisory functions, there is a need to ensure that this function can be effectively executed. Since the "single body" governance structure is new for many CRPs, there is a need to monitor whether bringing together the voices of independent experts, partners and participating Centers in one single governing body will actually work and benefit the CRPs more than previous arrangements.

## 8.3 MANAGEMENT

### STRUCTURE OF MANAGEMENT

With the exception of AAS,[84] each CRP has two management bodies: (i) a management committee and (ii) a management unit in charge of day-to-day management. The names of these management bodies differ across CRPs (see Table A 3 in Annex 1 for details). All CRPs are now led by a CRP Director.[85] To manage the research components, CRPs have Flagship Leaders, and they may have regional coordinators. CRPs also have Focal Points in the participating Centers.

As shown in Table A 3 in Annex 1, the composition of the management committees differs considerably. The management committees of Dryland Cereals, GRiSP, MAIZE, RTB and WHEAT include the DDGs of the Lead Center and the Participating Centers. Other management committees include senior research managers from participating Centers, next to flagship leaders and, possibly, regional coordinators. RPGM treated management committees that had substantial inclusion of Center management representatives as governance rather than as management bodies [86]. These committees were seen as duplication and RPGM recommended to abolish such parallel governance structures with overlapping functions. With regard to future CRP management, it is important to note that the CRP evaluations came to a different assessment regarding the management committees. None of CRP evaluations took issue either with the inclusion of DDGs or other senior Center research leaders in the management committees.

83 The evaluations did not identify and discuss the share of CRP funding that is allocated to non-CGIAR partners in target regions, such as NARS.

84 As shown in Table A 3 in Annex 1, AAS has three management bodies: A Leadership Group, a Management Team, and a Program Support Unit.

85 WHEAT and MAIZE were originally run by managers and not by Directors. During its evaluation, WHEAT was still run by a manager, and the evaluation recommended to appoint a CRP Director. This recommendation has meanwhile been implemented.

86 RPGM considered five management committees of five CRPs (WHEAT, MAIZE, RTB, L&F and A4NH) as governance bodies, "based on the substantial inclusion of representatives of centers and partners in addition to managers of the CRP's research program (i.e. theme leaders and regional leaders)" (Robinson et al., 2014: 35).

Likewise, none of the evaluation criticized that these committees have strategic planning (i.e., governance) functions. To the contrary, the WHEAT, RTB, Grain Legumes and L&F evaluations all found the current composition and functions of the management committees to be very effective to ensure collaboration among Centers and to promote proper program implementation by ensuring the buy-in of the participating Centers [87]. As further discussed below, the systems required for effective CRP management, especially human resource and research management, remain under the control of the Centers. This is a major reason why the inclusion of senior Center managers in the management committees of CRPs was found to be beneficial. This finding raises, however, the question whether senior Center managers should play a substantial role in both the steering committees and the management committees (as is currently the case). If senior Center managers are key members in CRP management committees, it might be better to leave Center representation in the steering committees to BoT members so as to ensure that an appropriate independent oversight function can be exercised.

### ROLE OF THE CRP DIRECTORS, FLAGSHIP LEADERS AND MANAGEMENT UNITS

All CRP evaluations discuss the authority of the CRP Director, which is obviously an essential issue in a matrix management structure. RPGM highlighted that to ensure CRP performance, the CRP Director "should have the authority to manage for results, and the accountability for that performance should be to a CRP governance body designed to fulfil that role, rather than through the lead center DG"[88] . Some evaluations observed a move towards assigning more authority to the CRP leader. The appointment of CRP Directors for WHEAT and MAIZE is a case in point [89]. Likewise, the GRiSP evaluation noted that the CRP Director has appropriate management powers. In other cases (e.g., FTA, Grain Legumes, Dryland Cereals), the evaluations found that the authority of the CRP Director was limited, which was seen as an essential challenge[90]. As noted in the PIM evaluation, the obstacles towards assigning more authority to the CRP Director are linked to the collective action problem outlined above [91]. In two management areas, the limited authority of the CRP Director was seen to be particularly problematic: human resource management, and the management of bilaterally funded projects that are mapped into the CRPs. To overcome the limited authority of the CRP Director over the management of research staff, several evaluations (e.g., A4NH) recommended that the CRP Director should at least be involved in the performance

87 The WHEAT evaluation quotes from the recommendations of the Independent Steering Committee, which considered it "essential that CRP management decisions, which have ramifications across centers and their departments and for non-CGIAR partners, be consensus-based. Involving centers' Program Directors is the best way to ensure that all those responsible for the delivery of large project portfolios are behind decisions and implement them." Likewise, the RTB evaluation concluded that "that having a group composed of research managers with high status from the partner Centers facilitates consensus building and implementation of decisions at each Center." In a similar vein, the Grain Legumes evaluation noted that the "formation of the Research Management Committee with representatives from the four CGIAR Centres and one partner organisation was a major step towards coordinated decision-making."

88 IEA (2014), page 13

89 As mentioned in footnote 8, they were earlier led by managers.

90 In case of Grain Legumes and Dryland Cereals, the parallel structure identified above was a problem not only for governance, but also for management. There is one CRP Director for both CRPs, and at the same time, there is one Program Director at ICRISAT in charge of the Dryland Cereals program of ICIRSAT, and one in charge of the Grain Legume program of ICRISAT.

91 PIM evaluation (p. 89) noted that the "PIM Director and the small Management Unit find themselves in more of a collective action situation in which they play largely a coordinating role."

appraisal of key research leaders, such as flagship leaders [92]. With regard to the mapping of bilaterally-funded projects into the CRPs, a range of evaluations (e.g., L&F, FTA, WLE and A4NH) proposed a stronger involvement of the CRP Director. WLE, for example, recommended that the CRP Director should have the authority to approve the mapping of funding into the CRP [93].

The reporting relations of the CRP Directors are not discussed in detail in the CRP evaluations. Apparently, no CRP moved to a situation where the CRP Director only reports to the CRPs steering committee, as recommended by RPGM. There is rather a move towards double reporting lines for the CRP Director. For example, PIM envisages that the CRP Director will in the future report both to the Lead Center's DG and to the Steering Committee. The evaluation noted that this implies a "two masters" problem, but it was obviously too early to assess the arrangement.

Some evaluations comment on the management of the different components (flagships) of the CRPs. The role of the flagship leaders was generally identified as important, and it was acknowledged that some are internationally recognized leaders in their fields. The GRiSP evaluation found that delegating considerable management authority to the flagship leaders was an effective management approach, which reduced transaction costs. Other evaluations also found that it is, in principle, a useful strategy to "decentralize" management and establish "distributed leadership" according to the subsidiarity principle by empowering flagship leaders. However, the evaluations present evidence that, in practice, this strategy was hampered by the CRPs' matrix structure, because flagship leaders have no management authority outside their home Centers [94]. What contributes to this problem is an element of institutional culture. As noted in several evaluations, researchers have a strong sense of belonging to their home Centers, whereas their identification with the CRPs has remained limited [95].

The program management units, which are in charge of day-to-day management and administration of CRPs, were not systematically assessed by the evaluations. Their size, composition and capacity differ considerably across CRPs. CCAFS, for example, has a Program Management Unit of six members (in addition to the CRP Director). On the other end of the spectrum are Grain Legumes and Dryland Cereals, which share the same program management unit that comprises three administrative staff members. Some CRPs employ a senior manager as leader of the management unit [96]. Overall, the evaluations imply that investing in the capacity of the program management units in areas such as M&E, and communication enables CRPs to better overcome the management challenges inherent in the complex CRPs,

92 GRiSP has already implemented this provision.

93 This provision would also address management problems that arise from the limited information available to CRP Directors on W3/bilaterally-funded project that was mentioned in several evaluations.

94 For example, the A4NH evaluation found that flagship leaders "have no responsibility or power, and little incentive, to manage, monitor or mobilize resources for research activities which are mapped to their Flagship but carried out in other Centers. … Apart from HarvestPlus, the other three Flagship leaders were unable to describe to the evaluation team the activities being undertaken in 'their' Flagships outside their own Centers." (Background papers of the A4NH evaluation, p. 5). Likewise, the FTA evaluation noted that some flagship leaders struggled with applying their responsibilities beyond their home Center, and the WLE evaluation points out that flagship leaders have more a coordinating than a leadership role.

95 An example is the PIM evaluation (p. 89), which noted that "indeed, some CGIAR scientists have told the evaluation team that they regard PIM as little more than another donor."

96 This function is referred to as Program Manager in WHEAT and MAIZE, and as Head of Operations in AAS.

e.g. regarding gender mainstreaming and the development of Theories of Change. Considering that the evaluations included rather limited information on the program management units, it appears useful to assess the performance and cost-effectiveness of the diverse program management units in more detail in future evaluations with the aim to develop recommendations on the appropriate size and capacity of these units.

### MANAGEMENT INFORMATION, M&E AND RESULTS-BASED MANAGEMENT

This section focuses on three aspects of managing CRPs: management information systems, M&E and Results-Based management. The management of research staff has been dealt with in Section 4.1 above, and the management of funding is discussed in Section 8.3 below.

In view of their complexity and matrix structure, CRP managers need effective systems that provide accurate and timely management information (e.g., about allocation of human and financial resources across program components). Moreover, CRPs need to establish systems for effective M&E. In 2013, the Consortium initiated a System-wide effort among all the CRPs to put in place a collective reporting framework. The Consortium is also promoting RBM and several CRPs participated in a pilot program of the Consortium on RBM.

It can be derived from the evaluations that the efforts to establish systems for management information differ widely across CRPs. Positive examples include the innovative efforts of CCAFS, which is investing in a 'FAIR' – findable, interpretable, accessible, and re-useable – information management system that sits in the public domain: The Planning and Reporting platform. In other cases, little progress was noted. For example, in case of Grain Legumes, Dryland Cereals and L&F, even basic management information comes from manually updated spreadsheets rather than real-time data bases. Due to the mapping of projects and staff into the CRPs that is done by the Centers, many CRPs seem to have problems to provide up-to-date information even on rather basic indicators, such as the distribution of CRP researchers by flagship, region and type of funding, or publications produced by flagship.

One instrument to facilitate the complex management of CRPs is "One Corporate System" (OCS), a management system that was introduced by the Consortium in 2013. OCS needs to be implemented by the Centers (a process that is still going on), and it was designed to meet the information needs of both Centers and CRPs. The AAS evaluation found that the quality and timeliness of financial information has improved in AAS since the introduction of OCS, but the system was not yet used for program management [97]. L&F registered high expectations regarding the introduction of OCS, but also noted that it will take time until the system will be functional for L&F.

M&E, as an important aspect of CRP management, was addressed in all evaluations. Some CRPs have moved to the concept of Monitoring, Learning and Evaluation (e.g., AAS, Dryland Systems, GRiSP, MAIZE and WHEAT). The evaluations overall document progress towards better M&E. While some evaluations criticize that progress has been slow (e.g., Grain Legumes), there are many examples on the positive side. They include Dryland Systems, which was commended for implementing a forward-looking, innovative and functional Monitoring, Evaluation and Learning system. In GRiSP, systems for Monitoring,

97 The evaluation noted that better use should be made of the BUS ("Basic Unit of Science") codes of OCS.

Learning and Evaluation were found to be evolving quickly, though the evaluation noted that they should be better integrated among the participating Centers. The Dryland Cereals also commented positively on the evolving M&E framework and the A4NH evaluation praised the program management unit for the substantial investments made in M&E. The FTA evaluation noted that the Monitoring, Evaluation and Impact Assessment team had reinforced a culture shift from focusing only on publications towards tangible development outcomes. AAS evaluation was particularly positive about the culture of learning that was promoted in this CRP.

While noting substantial progress, several evaluations (A4NH, CCAFS, FTA, PIM, WLE) express serious concerns regarding the realism of the emerging RMB System of CGIAR. Three types of concerns are expressed in the evaluations. One concern are unrealistic assumptions about the attributability of development outcome indicators to CRP research, considering that IDOs, as currently formulated, are not achievable by CRP research alone and often involve time lags. [98] The second concern is that monitoring the development outcome indicators with adequate methodologies across the entire portfolio would exceed the available resources by far. This requires a selective approach, as pursued, e.g., in WLE[99]. The third – related - concern are the heavy reporting requirements for research staff, which is likely to reduce their productivity and morale. The evaluations indicate that the Consortium needs to address these concerns with a sense of urgency.

### EMERGING LESSONS ON MANAGEMENT

The evaluations suggest that CRPs benefit from having Management Committees in which senior managers of the Centers are included, and that have governance functions such as strategic planning in addition to management functions. This finding raises, however, the question of whether senior Center managers should play a substantial role in both the steering committees and the management committees, or whether Centers should be represented differently in the Steering Committees, such as by members of their BoT.

The evaluations also indicate that in most cases, the challenges of matrix management inherent in the CRPs could be addressed more effectively by allocating more authority to the CRP Directors.

98 This concern was expressed by several evaluations. The FTA evaluation was most explicit and found that the emerging approach contradicts textbook knowledge in the evaluation sciences. The evaluation (p. 142) found that "it was surprising to see that pronounced scepticism about the system, as it appears to be currently envisaged, is wide-spread among evaluation professional within and external to the CGIAR but that, anyhow, related work seems to be diligently implemented by some of the very same professionals."

99 The WLE gives instructive examples of this concern, using the example of indicators such as "gender-equitable control of productive assets and resources," "increased resilience of agro-ecosystems and communities, especially those including smallholders," and "land and water degradation minimized and reversed." The WLE evaluation points out that "each of these would present a substantial challenge for empirical measurement, even in a limited geographic area. Hence, the selective approach adopted by the M&E Team to select a small number, so outcomes and targets on which measurement is being focused is going in the right direction. The Evaluation Team believes the program should pursue its efforts to focus on a prioritized set of activities that can make important contributions to assessing the eventual outcomes and possible impacts of WLE. This includes providing information to inform the iterative adaptation and improvement of, for example, research outputs and change processes" (p. 76).

Priority areas highlighted in the evaluations include the participation of CRP Directors in the performance assessment of staff members with management responsibilities in the CRP (such as flagship leaders), and involvement of CRP Directors in decisions to map bilateral projects into a CRP. The evaluations indicate also that systems to provide adequate management information need to be improved in most CRPs. OCS is expected to play a positive role in this regard.

## 8.4 FUNDING AND ITS MANAGEMENT

As the allocation and management of funds is a crucial area of CRP management, it is discussed in a separate sub-section here.

The CGIAR reform introduced three funding windows for the CRPs[100]. W1/W2 funds are especially important to the success of the CGIAR reforms since they are the funds that the Fund Council can allocate among CRPs to influence the overall direction of the research portfolio in accord with the strategic framework (W1 funds only). Likewise CRP managers can potentially allocate W1/W2 funds across Centers according to priorities and performance and to incentivize collaboration across Centers participating in the CRP. W3 and most bilateral funds are under the control of the Centers [101]. The evaluations indicate that there is variation regarding the extent to which CRP directors can influence the mapping of W3 and bilateral funds to CRPs.

At the System level, the Fund Council and the Consortium Office have made limited use of W1 funds to influence the overall allocation among CRPs. Individual donors of course can influence the allocation by contributing W2 funds to specific CRPs and some donors have done so. The Consortium Office has then used W1 funds to fill shortfalls in W1/W2 funding of specific CRPs essentially eliminating incentives to CRPs to attract W2 funds (as noted in the evaluations of L&F, PIM, RTB) [102]. The Consortium Office itself noted that the lack of an agreed set of priorities across the CRP portfolio in the SRF 2011 and subsequently throughout the implementation of the SRF was an impediment to using W1 funds more strategically.[103]

Against this background, the rationale for the final allocation of W1/W2 funds across was not clear and was questioned by some evaluations (MAIZE, WHEAT). In some cases, such as CCAFS, CRPs started with less legacy research so a higher allocation of W1/W2 funds was needed to finance the new research initiated under the CRP. For the CRPs that were initially based on legacy research, the share of W1/W2 funds in total funding in 2014 was in several cases less than one third (Dryland Cereals, WHEAT, and MAIZE relative to a portfolio average of 41%).

100 Window 1 funds that can be allocated across CRPs, Window 2 funds that are allocated to specific to CRPs, and Window 3 funds that are allocated to specific Centers.

101 In this regard it should be noted that many donors are now giving clear instructions about how W3 should be used (as opposed to the original idea of W3 being unrestricted funding to centers).

102 CGIAR Consortium (2013): 2014-15 Financing Plan: Document presented for Agenda Item 12 of 10th Fund Council Meeting,

103 CGIAR Consortium (2012): Interim 2013 CGIAR Financing Plan: Document presented for Agenda Item 5, 8th Fund Council Meeting.

The increased use of W3 funding is another disturbing trend. Over the period in which all CRPs were active, the share of W3 funds received as a percentage of total CGIAR funds (W1/2/3 [104]) received, increased from 17% in 2012 to 29% in 2014 and to around 47% in 2015 [105]. By reallocating from W1/W2 funding to W3 funding, the donors appear to be indicating a loss of confidence in the CRP process.

Given the decline in W1 funds, the CRPs proposed in early 2016 that in the second round of CRP proposals, W1 funds would be distributed equally across the CRPs. This agreement also reflects the fact that W1 were expected to fall to such an insignificant share (about 8%) of total CRP funding (W1/2/3/ and bilateral) for 2016 [106] that they can no longer exert any real influence on the direction of the CRP portfolio. Since W2 funds are allocated by individual donors, the System no longer has a mechanism to directly steer the CRP portfolio. Of course, a well conceived SRF and portfolio of CRPs is important for attracting funds, even if the funders choose to fund specific activities within the portfolio through W2 and other funding mechanisms. Even so, one of the original intentions of the CGIAR reform process for the Fund Council and/or CO to steer funds to high priority research and well-performing research programs is no longer relevant.

At the CRP level, the use of W1/W2 funds varies among CRPs and in some cases was not clear to the evaluation teams. After subtracting overall management and coordination costs, funds have been generally allocated into three groups.

1. Competitive or commissioned funding of cross-Center research activities of strategic relevance to the whole CRP. Some CRPs (CCAFS, PIM and WLE) have allocated most research funds through such grants although there were important differences among these CRPs in the openness of the competition to researchers outside of CGIAR. Most others (A4NH, Dryland Cereals, FTA, Grain Legumes, GRiSP, L&F, RTB) have used a relatively small part of their total research budget for such grants. MAIZE and WHEAT used such grants for external partners only. Evaluations generally found that these grants were particularly effective in getting beyond legacy research by initiating new research activities and providing incentives to participating Centers and external partners to collaborate around a strategic research theme (e.g., GRiSP, MAIZE, MAIZE).

2. Funds allocated by a formula based on 'unrestricted funding' received by the participating Centers prior to the reforms. At least A4NH, FTA, GRiSP, L&F and RTB used this approach for the bulk of their W1/W2 funds throughout the first phase. Most commonly the evaluations reported that Centers used these funds for filling gaps in priority research within the CRP portfolio. In several cases (FTA, Grain Legumes, PIM), evaluations reported use of funds, among other things, for paying overheads on bilateral projects that are mapped to the respective CRPs.

3. Funding central services such as gender mainstreaming, networking, monitoring, evaluation and learning systems, and capacity building. GRiSP and Dryland Cereals, for example, established competitive scholarships from such funds.

104 This does not include bilateral funding.

105 According to CGIAR Financial Reports 2012-2014 and Preliminary - CGIAR Financial Report 2015, issued 26 April 2016. In absolute terms this means USD 55 million in 2012, USD 182 million in 2014 and USD 247 million predicted for 2015.

106 CGIAR Consortium (2015 c): 2016 CGIAR Research Program Financial Plan, issued 14 December 2015.

Although more costly to administer, use of competitive or commissioned funds provided more power to CRP management since funds can be directly allocated in terms of overall priorities and quality of science. Grants can also be constructed to incentivize collaboration between Centers. Formula funds are more cost effective and politically easier since they avoid potential conflicts among Centers in allocating funds. This was certainly a concern in the early years of the CRPs but several evaluations (FTA, GRiSP, RTB) recommended moving more funds to competitive processes now that the CRPs have achieved a certain level of maturity.

W3 and bilateral projects are almost exclusively the province of the Centers, and since in 2015 they made up 67% of CRP funding[107], and even higher for some CRPs, they remain the major funder of the CRP research agenda. Of course, to the extent that the Centers and donors buy into the strategic framework, W3 and bilateral funds can and should be aligned to the CRP. Many evaluations noted a good congruence between the CRP strategic framework and W3 and bilateral funding. However, being Center specific they are, in view of the collective action problems discussed above, less likely to foster collaborative research across Centers. Bilateral funds at the country level that are often managed by different arms of donor organizations to those who manage W1/W2 and W3 funds are also more focused on achieving short-term impacts (Section 5.2).

As CRPs develop a more distinct 'brand name', CRPs themselves might be able to raise more bilateral funds. The governance challenges involved in CRP branding have already been noted above, and some evaluations note the lack of CRP branding and even a reluctance to brand their activities (A4NH). Exceptions include AAS and GRiSP that have made substantial efforts to be recognized as entities rather than programs of the Lead Center. The uncertain future of the individual CRPs as experienced in 2015 may be a major factor impeding such branding and CRP fund raising through bilateral projects. The evaluations rarely recorded a bilateral project that cut across Centers within a CRP - the large Stress Tolerant Rice for Africa and South Asia project and the Cereal Systems Initiative for South Asia are exceptions.

Almost all the evaluations highlighted the uncertainty of W1/W2 funds from year to year, and even with year that undermined their value for funding long-term research. W1/W2 funds are allocated one year at a time and it has been hard for the CRPs to make long-term commitments based on these funds. Adding to this uncertainty, the evaluations took place as the Consortium Office was advising CRPs of significant budget cuts well into the fiscal year after funds had already been allocated and CRP commitments made. This uncertainty along with failure of the CGIAR donors to transition from bilateral to W1/W2 funding has undermined confidence in W1/W2 funds as the 'core funds' of the system. In fact, evaluations noted that W3/bilateral funds are now not only the bulk of the funds but the more stable 'core' of the CRPs.

Going into the CRP 2 process, this analysis of evaluations indicates that the reform process based around CRPs is facing challenges due to declining W1/W2 funds both as a share of the total CRP budget and in absolute terms. The guidelines for the base budget for the CRP 2 portfolio provide USD 209 million of W1/W2 funds or 23% of a total indicative budget of USD 900 million for 2017[108]. Although the

**107** According to CGIAR Consortium (2016 b): Preliminary - CGIAR Financial Report 2015, issued 26 April 2016.

**108** CGIAR Consortium (2015 a)

base budget is a conservative guideline, indicative W1/W2 funding levels represent a decline from the 2014 peak W1/W2 expenditure of USD 362 million or 42% of the total CRP expenditure. Both absolute W1/W2 funding level and their share of all funds would be less than the unrestricted funds in the pre-reform period. This is a matter of concern since one of the motivations of the reform was to reverse the trend toward restricted funding. The 2008 Independent Review of the CGIAR, which informed the reform, had also identified the decline of unrestricted funding as a major challenge of CGIAR that needed to be addressed[109].

The peaking of overall funding of the system in 2015 is understandable given the rapid rise in funding of CGIAR in recent years and recent fiscal stringencies in many of the key donor countries. However, the consistent and wholesale shift away from W1/W2 funds toward W3 and bilateral funds threatens the fundamental objective of the reform. There could be many reasons for such a shift, but one plausible reason is that donors have lost confidence in the CRP superstructure as a way to allocate funds and have returned to exercising their prerogative to allocate funds to those Centers and research activities that they perceive as meeting their priorities and quality standards for science.

Under the CRP 2 guidelines, some CRPs would receive as low as 11% of their budget as W1/W2 funds and several would be under 20%[110]. A decline in the W1/W2 funding share of this order undermines the power of CRP managers to incentivize collaboration around strategic priorities, even if more funds are moved toward competitive grants. In absolute terms, seven of the 12 proposed CRPs would receive USD 15 million or less. W1/W2 annual budgets of USD 10-15 million distributed across several Centers, after subtracting management and coordination overheads risks creating disincentives for Centers to participate in the CRP process at all. This is especially the case, since the reform has led to higher transactions costs.

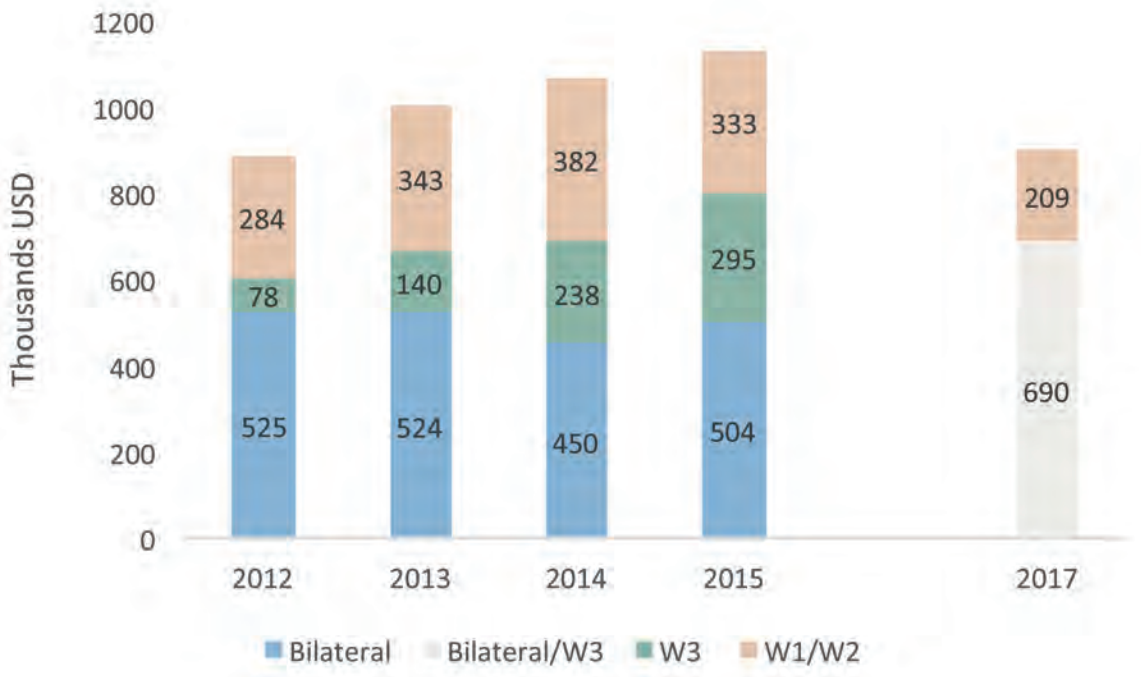
In assessing the role of W1/W2 funding, there is the need, of course, to take into account that the CRPs create an added value for the participating Centers, as discussed in more detail in Chapter 9. Hence, the transaction costs of collaboration should partly be considered as an investment in a partnership that will deliver benefits later on. Moreover, the introduction of the CRPs was designed to address a number of serious problems that had emerged within CGIAR, such as lack of coordination, duplication of efforts and limited mission-orientation [111]. Hence, reverting to the pre-reform mode of operation is not an option for CGIAR. Still, considering the challenges of collective action and matrix management analysed in Section 8.2 above, it seems unrealistic to expect that the CRP structure to function without sufficient W1/W2 funding.

109 CGIAR Independent Review Panel (2008), page 7.

110 CGIAR Consortium (2015 a)

111 See CGIAR Independent Review Panel (2008)

FIGURE 5: CRP EXPENDITURE BY TYPE OF FUNDING, 2012 -2015 AND BASE GUIDELINE FOR 2017




Source: Preliminary - CGIAR Financial Report 2015, issued 26 April 2016 (page 5) and 2017-2022 CGIAR Research Program Portfolio (CRP 2) Final Guidance for Full Proposal.

### EMERGING LESSON ON FUNDING

While there is no strong evidence base, the review of the CRPs that were evaluated as successful as well as logic s*uggest that a minimum share of W1/W2 funds in a CRP budget should be 30-35% if W1/W2 funds are to provide sufficient leverage* to implement an integrative and collaborative research program across Centers. Successful implementation of the CRP 2 process must revisit the compact between the donors and the Centers. On the one hand, the CRPs will have to articulate a compelling case for their priorities and potential impacts on the IDOs and SLOs, and move way from formula funding to transparent mechanisms to allocated funds to the highest priorities and the best science, at the same time demonstrating a willingness to close off legacy research that does not meet these criteria. On the other side, the donors have to reassert their commitment to providing funds in the most flexible way possible to the CRPs to implement such a program.


# 9. THE VALUE ADDED OF CRPS

## 9.1 RATIONALE FOR THE CRPS

The added value of CRPs is best reviewed against the original rationale for their establishment. According to the SRF 2011, "the CRPs involve three core principles: a) a strategic approach to organizing research around impact on SLOs; b) integration of research across core competencies as fundamental to the strategic approach; and c) clarity on and differentiation of partnerships at the various stages of the R&D process" [112].

For purposes of this review, these principles are unpacked into five potential areas of added value of the CRPs over the pre-reform process of research organized at the Center level.

1. Clear impact orientation. The CRPs were to be designed with a strong emphasis on results. CRPs are expected to contribute to the SLOs by targeting outcomes on IDOs, which were introduced to make planning and targeting more realistic. As outlined in Chapter 5.1, CRPs were required to develop explicit ToC and Impact Pathways, which should also guide the development of partnerships with both research and development organizations and respective capacity development activities.

2. Integration around a strategic framework to address the System's four SLOs.[113] The reform process clearly argued that CRPs should be strategic in addressing high priority research based on its potential

112 CGIAR Consortium (2011 a)

113 As CGIAR Consortium (2011 a), SRF published in 2011.

to impact the four SLOs. CRPs were expected to prioritize research against the SLOs and integrate a coherent portfolio of research for development activities from across the System.

3. Building synergies by exploiting complementary assets and comparative advantages. The complementary assets and/or comparative advantages of the Centers that could be exploited through the CRPs might include location in terms of agro-climatic or socio-economic setting, proximity and access through trusted relationships to users of CGIAR outputs (farmers, policy makers and others), different skill mixes in terms of disciplines or type of research (discovery, delivery), and other assets related to germplasm, data bases, models, and tools.

4. Sharing and learning. Scientists in different Centers could gain through closer interaction that speeds exchanges of knowledge, tools, and germplasm, if the CRP puts in place mechanisms to foster those exchanges.

Scale through efficiencies. CRPs might also enhance efficiencies by allowing certain types of research or management protocols to be organized at scale at one of the participating partners of the CRPs.

These potential added values of course have to be balanced against potentially increased transactions costs at both management and scientific levels. Transactions costs may be direct costs (hiring additional managers or directors or travel costs) as well as unrecorded costs in terms of time for coordination meetings, more complex interactions and additional reporting requirements. As indicated in the previous chapter, these transaction costs can partly be considered as investment costs required to establish partnerships that yield benefits over time.

## 9.2 OVERALL FINDINGS ON VALUE ADDED

The evaluation reports and the researcher surveys broadly concluded that the CRPs have added value. In the case of GRiSP and MAIZE the assessment on value added is strongly positive. The value added of the other commodity CRPs (C-CRPs) was assessed to be positive as were PIM, A4NH, and FTA. A4NH and FTA both concluded (in a qualitative assessment) that the added value outweighed the increased trans- actions costs. The evaluations of Dryland Cereals and Grain Legumes seem ambivalent about the added value, although both evaluations recognize their potential value added and note the very short time period of implementation since these were the last CRPs to start (two years only). All three evaluations of the Systems CRPs (AAS, Humidtropics and Dryland Systems) stressed the high value of the systems approach for promoting integrated research within CGIAR.[114] For various reasons, this value has not been fully exploited, as further discussed below.

The researcher surveys that included common questions about value added broadly support these findings, with GRiSP scoring best for the commodity CRPs and WLE with the lowest overall score (Table 8). The high scores of AAS reflect the strong commitment of staff to the RinD approach promoted by this CRP as a tool for adding value.

114 AAS stressed the high value of the system as an object of research, but questioned the approach and tools used.

TABLE 8: SCORES FOR SPECIFIC QUESTIONS IN THE SCIENTIST SURVEY THAT WERE COMMON ACROSS CRPS[115]

| Statement | AAS | WHEAT | MAIZE | GRISP | RTB | L&F | WLE | CCAFS |
|---|---|---|---|---|---|---|---|---|
| CRP provides a better framework for guiding and focusing research planning. | 4.82 | 4.39 | 4.28 | 4.93 | 4.08 | 4.35 | 3.94 | 4.33 |
| Research is becoming strategically better focused on development outcomes. | 4.90 | 4.41 | 4.39 | 4.81 | 4.25 | 4.34 | 4.28 | 4.61 |
| CRP is improving synergies between participating Centers. | 4.60 | 4.00 | 4.10 | 4.57 | 4.43 | 4.35 | 3.83 | 4.38 |
| Research is becoming better integrated across disciplines and teams towards results. | 4.76 | 3.95 | 4.05 | 4.42 | 4.03 | 4.28 | 3.78 | 4.22 |
| CRP is enabling research to be better aligned to beneficiary needs. | 5.26 | 4.47 | 4.36 | 4.48 | 3.95 | 4.20 | 3.99 | 4.35 |
| CRP has improved the way in which gender issues are integrated to research | 4.95 | 4.19 | 4.04 | 4.20 | 4.45 | 4.45 | 4.06 | 4.10 |
| Due to CRP, capacity development is now addressed more strategically to improve research effectiveness | 4.49 | 4.22 | 3.89 | 4.13 | 3.13 | 3.48 | 3.62 | 3.84 |
| CRP has good potential to help streamline administrative procedures | 4.17 | 3.78 | 3.69 | 3.84 | 3.18 | 3.39 | 3.74 | 3.95 |
| CRP has good potential to help streamline monitoring and reporting | 4.71 | 3.70 | 3.97 | 4.37 | 3.96 | 3.95 | 4.10 | 4.38 |

* Cells display average rating of responses on a scale from 6 (strongly agree) to 1 (strongly disagree).

Several CRPs have included non-CGIAR core partners - research institutions from high-income countries with an international mandate - who play an important role in implementation and are represented in the CRP's governance/management bodies. FTA, GRiSP and RTB all included CIRAD, and in case of CCAFS, the University of Copenhagen is a core partner, which also hosts the CRP's coordination unit. In general, the evaluations on the value added of including the non-CGIAR core partner(s) are positive, especially for discovery-type research and the application of innovative research approaches.

The evaluations are uniformly in agreement that the potential value added of the CRPs is much higher than what has been realized to date. A common finding is that two to four years is only sufficient to lay the basis for strong CRP partnerships across Centers and that several more years are needed to continue to learn from experience and build trust in order to develop truly integrated programs. Also funding controlled at the CRP level from W1/W2 sources that is especially important for building value added is less than 25% of total funds in some CRPs. Bilateral funds are nearly all raised and controlled at the Center level (see Funding section).

## 9.3 SPECIFIC FINDINGS BY AREAS OF POTENTIAL VALUE ADDED

### IMPROVING ORIENTATION TOWARD IMPACTS

The evaluations all comment favourably on an emerging results culture in the CRPs with much greater awareness and attention to getting beyond research outputs to outcomes. This has also stimulated

115 This survey analysis does not include the results of the FTA and PIM survey because of lack of comparability.

hundreds of partnerships aimed at scaling out delivery. The introduction of the ToC concept across all CRPs has improved orientation towards impacts. Still, this is a work in progress, especially in developing more disaggregated ToCs tailored for specific research activities, products and sites, while assuring that the TOCs also facilitate the production of International Public Goods (see Section 5.1).

In principle, the systems approach introduced through the three Systems CRPs also has high potential to serve as a tool for improving impact orientation towards impact across CRPs. An example from Humidtropics is the identification of impact zones or domains, where innovations developed in a specific action site can be up-scaled, due to similarities in the farming system. The evaluations indicate that the time frame was still too short to realize the full potential of this systems approach.

IDOs and specific targets have only been established for most CRPs as part of the 2015-2016 extension. It is, therefore, too soon to expect the CRPs to have produced impacts in terms of the IDOs (except from legacy research), but most evaluations pointed to significant achievements (see Section 5).

### INTEGRATION AROUND STRATEGIC FRAMEWORKS FOR A RESULTS ORIENTATION

A pre-requisite for success with a CRP appears to be a strong and coherent strategic framework, as presented in the original proposal that has wide buy in from both managers and scientists in the particpating Centers. This was particularly the case for GRiSP and MAIZE that received strong endorsements from ISPC reviews. ISPC on the other hand was critical of the strategic framework for AAS and this was echoed by the evaluations.

Integration around the strategic framework has been greatly facilitated in several of the CRPs (A4NH, GRiSP, MAIZE, PIM, RTB, WHEAT) by allocating some W1/W2 funds competitively or semi-competitively to support research projects designed from the bottom up that support high priority global initiatives such as phenomics or the global IMPACT model. However, for GRiSP, L&F, RTB and WHEAT, the bulk of the funds have been allocated through formula funding that puts the onus on the Centers to allocate funds according to the strategic framework for the CRP. AAS used most W1/W2 funding to develop and promote the RinD approach, which facilitated collaboration. In contrast, W1/W2 funding in Dryland Systems was so limited that it was mostly spent for program management and coordination.

Many CRPs used formula funding to allocate a fixed share of W1/W2 funds to each Center. Most evaluations of these CRPs (e.g., GRiSP, L&F and RTB) argue that these CRPs should move more funds to competitive grants to incentivize collaboration and synergies. However, the evaluations of A4NH, PIM and CCAFS that most extensively use competitive grants caution that the processes need to be much more transparent.

Another mechanism to move to full integration is to integrate management of the CRP across the participating Centers. WHEAT and MAIZE have endorsed this concept of full integration and appointed a CRP Director for each CRP, presumably with budgetary powers over the two Centers participating in each CRP. The RTB evaluation recommended fully integrating the IITA and CIAT cassava breeding programs and identified a clear potential for integration and consolidation of all RTB research on banana and plantain by IITA and Bioversity. Note however, that in each case, the integration is being implemented or recommended for a single commodity across only two centers. It will be difficult to replicate this management model for more complex CRPs. As noted in the evaluations, the Directors in the other CRPs

have, so far, limited authority over key management areas (such as human resources and W3/bilateral projects mapped into the CRPs) and play, therefore, more of a coordinating role.

### COMPLEMENTARY ASSETS

Many evaluations pointed to the role of the CRPs in generating synergies by exploiting complementary assets. In GRiSP, for example, most of the gene discovery work is done at IRRI, and Africa Rice is quickly able to use these products. Likewise CIAT has the comparative advantage in transgenic work due to a blanket biosafety approval for its work in Colombia. In PIM, IFPRI has strong disciplinary skills in economics, while the partner Centers have strong skills in the natural sciences. PIM has allowed IFPRI's impact model to involve 12 centers and tap biophysical expertise on crop, livestock and fish systems to improve estimates of model parameters, while economists working at the commodity Centers have benefited from interaction with the strong disciplinary skills in economics at IFPRI. WLE has facilitated interaction between IWMI and World Fish on water management. Humidtropics has promoted the use of Innovation Platforms and R4D platforms as a tool to promote participatory integrated research among the participating institutions. AAS, in contrast, could have benefitted more from leverage the expertise of the Commodity Centers for the agricultural component of aquatic agricultural systems. [116]

There is also interest in expanding the use of complementary assets in the future. For example, several CRPs have identified a role for A4NH in their extension proposals to provide expertise in specific methods for research on nutrition (e.g., nutritional efficacy and bioavailability trials or high throughput diagnostics for micronutrients).

### SHARING AND LEARNING

Interaction, learning and sharing between scientists in different Centers has increased under many of the CRPs (GRiSP, L&F, MAIZE, RTB) relative to the pre-reform situation. CIAT's and Latin American expertise more generally in direct seeded rice is now much more widely appreciated in IRRI and Asia, while ILRI is gaining from CIAT's forage expertise for application in Africa. After GRiSP was formed there was a sharp increase in the number of IRRI and CIAT advanced lines tested in the Africa Rice Breeding Task Force. The evaluation of A4NH also highlights the increased cross learning between participating Centers working on nutrition. However, there is little evidence of increased co-authorship of publications across Centers in any of the CRPs, although it is probably too early to expect this.

The three Systems CRPs also placed emphasis on sharing and learning. In AAS, "knowledge sharing and learning" was established as a research theme, under which tools such as "after action reviews" were consistently applied throughout the program. As a consequence, the CRP was able to establish a culture of self-reflection and learning. AAS also made efforts to foster exchange between the lead Center (WorldFish) and the other participating Centers (Bioversity and IMWI) through the joint leadership of the research themes by staff from different Centers and the posting of focal staff from other Centers at WorldFish Headquarters.

Groups of scientists within the CRPs are also interacting and learning from each other. The work on value chains is a good example. PIM has facilitated skill development in value chain analysis through

116 In this case, the allocation of more than 90% of CRP funding to one Center (WorldFish) turned out to be a constraint.

leading a working group on value chains and developing a website including tools for value chains analysis[117]. A similar learning environment is being created among the teams working on value chains and nutrition in A4NH. Among the Systems CRPs, Humidtropics created a "Tools for Systems Analysis" (TOSA) toolbox although it was too early to assess its effectiveness.

### EFFICIENCIES THROUGH SCALE

Efficiencies can be realized at the scientific level or management level. In science, the CRPs by involving diverse Centers and locations, as well as external partners, provide a unique opportunity for synthesis of results into globally relevant conclusions or toolkits. However, this is as yet an unexploited opportunity and the evaluations of WLE and L&F strongly recommend priority to this activity.

Efficiencies are also being realized through common protocols and tools. This is being achieved by designing and employing common data recording protocols for phenotyping, as in GRiSP. AAS developed a "Roll-Out Handbook", which serves as a protocol on implementing the "Research in Development" approach, a participatory action research approach promoted by the CRP. Most CRPs have also promoted a strong gender dimension in the CRPs by withholding funds for centrally organizing gender capacity building and tool kits to promote a gender-transformative approach throughout the CRP. Most CRPs have registered significant progress on gender relative to the pre-reform situation (see Section 6).
On the management side, all CRPs are struggling with management information systems and with M&E, largely because of the complexity of the CRPs and the different systems used across Centers. Efforts are being made to introduce OCS for management, and common M&E systems that envisages a tight link with the ToC and contributes to Results-Based Management (see Section 8).

## 9.4 OVERALL FINDINGS ON CONSTRAINTS TO VALUE ADDED

The main negatives of the CRPs are well known. First, all evaluations commented on the increased transactions costs for CRP managers to coordinate and comply with CRP requirements for reporting, and for scientists in terms of additional planning and reporting. The most negative aspect of the CRPs revealed in the researcher surveys was that staff did not believe that the CRP had 'good potential to streamline administrative procedures' (Table 8: Scores for specific questions in the scientist survey that were common across CRPs). Relations between CRPs and the Consortium Office have often been undermined by poor communication, frequently shifting guidelines and lack of trust, which has increased transactions costs.

Second, W1/W2 funding has been low for some CRPs and uncertain for all CRPs. As reviewed in Section 8.3, W1/W2 funds are especially important for achieving CRP objectives since they are the only funds that are or potentially can be used at the CRP level to influence priorities and reward science quality. Significant year to year variability in W1/W2 funds funding and mid-year withdrawal of W1/W2 funds in 2014 and 2015 have undermined the ability to use W1/W2 funds strategically for long term research.

117 www.tools4valuechains.org

### EMERGING LESSONS ON VALUE ADDED

To fully realize the potential value added, system stability is essential. The CRPs were meant to run for ten years, subject to a mid-term evaluation. The CRPs that are making progress need to be assured of their continuity and the funds to implement their agreed research portfolio. Likewise, administrative procedures need to be harmonized and agreed on for the next several years.


# 10. CONCLUSIONS

## 10.1 CONTEXT

Any effort to draw conclusions from this synthesis of 15 evaluations needs to take into account that the creation of CRPs was probably the most far-reaching and ambitious reform effort undertaken since CGIAR was established. As noted (Chapter 1), CGIAR was not designed from scratch, but became increasingly complex as it evolved over time, which led to the challenges that the reform aimed to address. These included the lack of a clear mission-oriented research focus, the proliferation of uncoordinated CGIAR entities and programs, and the growing dependence on bilateral funding often with a strong focus on development at the expense of science. The CRPs were designed to address these problems by integrating the entire research portfolio of all Centers around one strategic framework that articulated the CGIAR's overarching goals of reduced rural poverty, improved food security, improved nutrition and health, and sustainably managed natural resources.

The CRPs were not the first CGIAR programs that were jointly implemented across Centers - the previous System-Wide Programs and Challenge Programs, some of which were large scale had operated for a decade. What makes the CRPs much more ambitious than previous multi-center programs is that they covered virtually the entire research portfolio of all Centers. Such a far-reaching reform approach obviously has a much greater potential to reach the CGIAR's goals than earlier efforts (Section 9.1). However, the introduction of a matrix management structure across the entire CGIAR system introduced a major challenge. As is well documented in the business management literature, successfully implementing a matrix management structure is a challenge in a single organization, but in CGIAR - a group of

legally autonomous individual Centers - the challenge is far bigger. The matrix structure could only partially be imposed in a hierarchical manner from above and has to rely to a large extent on the collective action and good will of the fifteen Centers.

The reform started at a time, when incentives to overcome the challenges inherent in such a far-reaching organizational reform were very strong. After decades of neglect, the food price crisis of 2008 brought food security and agriculture to center stage in the international development agenda, and with it, a new sense of urgency to reinvest in agricultural research. Given CGIAR's unique role and strong track record in contributing to global food security, the increase in resources to CGIAR was unprecedented. By 2014, CGIAR had more than double the budget than it had in the pre-reform period[118].

Against this backdrop, what does this Synthesis of the 15 CRP evaluations tell us about the extent to which the CRPs have succeeded in realizing the substantial potential benefits of the reform on the one hand, and to manage its many challenges on the other?

As every evaluation noted – the timing of the evaluations was rather early to answer these questions. The reform was in full flux during the entire evaluation period, associated with an evolution of organizational structures and procedures. Moreover, research, especially in agriculture, is a long-term endeavour, and the full benefits of the reform cannot be expected to be visible within the short period evaluated. However, the timing of the evaluations provides the opportunity to get early insights on what is – and is not – working well, so as to inform the ongoing reform efforts as the CRPs enter into their second phase.

## 10.2 AREAS OF ACHIEVEMENT

The evaluations provide strong evidence that many of the reform elements are indeed steering the system in the intended direction. Interaction, learning and sharing between scientists in different Centers, has clearly increased (Section 9.2-9.3), thus realizing an important objective of a matrix system. Horizontal linkages between Centers have been created or strengthened at all levels - researchers from different Centers are working together in the thematic flagships and in joint research locations, managers from different Centers share responsibility in the management committees at CRP level, and the Centers are also jointly represented in the CRPs' governing bodies (Section 8.2–8.3). These new horizontal linkages have allowed the Centers to create synergies, especially by combining expertise and research approaches from different fields and regions and by creating new platforms for knowledge sharing and learning (Section 9.2-9.3).

As for quality of science, the picture that emerges from the evaluations is that, overall, CRPs have been able to engage research leaders of adequate qualification and scientific standing to lead the wide ranging CRP research activities on a par with global standards. The analysis of the publication record showed that CRPs are home to highly productive world-class researchers in a range of disciplines (Section 4.1). Likewise, the analysis of publications indicated that CRPs are, overall, able to produce quality of science at a level that can be expected from international agricultural research organizations, although there is considerable variation within and across CRPs (Section 4.2).

118 Rijsberman, Frank (2014): CGIAR Consortium 2013 Reflections and 2014 Outlook: A Mid-Term Review for the New Billion $ CGIAR.

Another achievement is the greater orientation of CGIAR through the CRPs towards results and impact, an important goal of the CGIAR reform. Efforts to foster an impact culture in CGIAR have been underway prior to the reform, but the evaluations suggest that the request for each CRP to develop Impact Pathways and ToC has forced CRPs to consider more systematically the processes for achieving impacts and led to a stronger results orientation throughout CGIAR (Section 5.1).

The evaluations also document progress towards gender mainstreaming (Chapter 6). At the time when the CRPs were created, the CGIAR had undertaken a number of strategic gender initiatives, but a robust, properly resourced and supported effort to embed gender analysis across the CGIAR portfolio had not yet been attempted (Section 6.1). The evaluations suggest that important steps in this direction were made by developing a Consortium Gender Strategy and requesting all CRPs to develop their own gender strategies, allocate a dedicate budget to gender, and report on progress (Section 6.2). Substantial efforts have been made to create an enabling environment for gender research (Section 6.3) and to mainstream gender throughout the research portfolio (Section 6.4). However, gender in the workplace, the second pillar of the CGIAR Gender strategy received relatively little attention (Section 6.5).

"Making the most out of partnerships" was also one of the goals of the reform laid out in the SRF of 2011. Partnerships and capacity development are essential for achieving impact at scale, and the evaluations were largely positive in this regard, even though a more strategic approach was generally recommended (Section 7.3). Important achievements were identified in engaging a wider range of development partners to achieve impact, using new approaches to partnership, e.g., in form of innovation platforms, and expanding partnerships with the private sector, thus potentially opening new impact pathways (Section 7.1). Strong partnerships with advanced research institutions have continued to grow and nourish the quality of science in the system. Challenges, however, remain in engaging research partners from national systems in the entire research process (Section 7.1), and in providing adequate opportunity for them to be represented in the CRP governing bodies to provide greater legitimacy (Section 8.3).

There is, of course, variation across CRPs in all these areas of achievement as detailed in Chapters 3-9. This is not surprising considering that the participating Centers had their specific strengths and weaknesses prior to the reform, which are partly reflected in CRP performance, and that some CRPs began much later in the evaluation period. With more time, the opportunity for maturing, collaboration, sharing and learning created by the CRPs is, however, expected to reduce these differences.

## 10.3 UNEXPLOITED POTENTIALS AND AREAS OF CONCERN

Notwithstanding the important achievements highlighted above, the evaluations also indicate that there is still a long way to go on the way to realize the full potential of organizing CGIAR research across CRPs. The vision of the SRF 2011 was that the "CGIAR will function as a single institution, with its centers collaborating in pursuit of shared goals and objectives"[119]. Achieving this goal requires the development of joint guidelines and systems for the management of CRPs. In several important areas of management, comprehensive guidelines and management systems were not yet available at the time the CRPs were created, but were developed piece meal over time. These areas include guidance on the organizational structure of CRP governance and management, the implementation of a joint management system (e.g.

119 CGIAR Consortium (2011 a), page 5.

OCS), the use of ToCs as a planning tool, the strategy for gender mainstreaming, the framework for M&E and the framework for capacity development. Several evaluations expressed concerns regarding the high transactions costs caused by the evolving nature of these guidelines and tools (Section 9.3). To some extent this can be expected--organizing the entire CGIAR research portfolio in the form of CRPs was a massive effort that required learning processes, sometimes involving trial and error. Hence, the transaction costs can partly be considered as investment into the new CGIAR structure.

Still, the evaluations reflect concerns regarding some of the management instruments that have been created. Several evaluations were particularly critical regarding the emerging RMB System, which was found to lack realism regarding the assumptions of attributability of outcomes to CRPs, and regarding the feasibility of measuring and monitoring the required indicators with appropriate methodologies across the entire CRP portfolio (Section 8.2). Similarly, the evaluations suggest that the ToC concept needs considerable adjustments, including links to the relevant literature, to become a management instrument suited to large and complex research programs (Section 5.1). In the area of gender mainstreaming, the evaluations noted a trend towards collecting gender-disaggregated data, but a lack of investment in the analysis of such data and their use in high-quality publications that could influence mainstream research, an important impact pathway (Section 6.4). All three cases indicate a problematic trend of forcing the CRPs to apply management instruments that have been designed for development projects without sufficiently adjusting them to the specific needs of large-scale complex research-for-development programs. This may be viewed as a missed opportunity since CGIAR could well become a leader in this field by using the opportunity to draw more intensively on the expertise of its researchers when developing guidelines and management instruments. Positive examples of this include the CGIAR Network of Gender Exports and the Community of Practice on Capacity Development. Involvement of researchers may also be useful to develop guidelines for other important areas of CRP management, such state-of-the-art methods for priority setting and impact assessment - areas where many evaluations identified weaknesses.

The evaluations draw attention to another critical issue: the appropriate position of CGIAR in research-development continuum. Several CRPs engage in large-scale extension activities involving the training of tens of thousands of farmers, often under large bilaterally funded projects. The evaluations questioned the comparative advantage of CGIAR for such activities vis-à-vis national systems and development organizations. This question has long been debated in CGIAR, but the evaluation findings indicate that the topic remains unresolved and requires further attention (Section 7.2).

Another area that requires attention is the buy-in of research staff into the CRPs. On the positive side, researcher surveys indicate that a large share of staff recognizes the potential of the CRPs to add value (Section 9.1). However, the evaluations also found a rather low identification of research staff in some CRPs with the CRP concept to the extent that some staff consider them to be little more than another donor (Section 8.3). The impression that emerges is that researchers often feel overwhelmed by reporting and compliance requirements that are burdensome and imposed “from above.” The finding that researchers implement M&E systems that are against their professional judgment is symptomatic (Section 8.3). Researchers are the CGIAR’s main asset – and maintaining a motivating environment for them to be productive, and for the CRPs to remain attractive to the best talent, are critical to long term success of the reform process and to CGIAR more generally.

The evaluations also reveal some concerns and unexploited potentials regarding quality of science. The variation in quality of science within and across CRPs indicates that the CRPs have only been partly successful to date in using the potential of the new matrix management structure for combining the strengths of the participating Centers to boost the overall quality of science. Encouraging co-authorship across Centers could be useful as would stronger individual incentives for performance. These strategies could also help to address one area of concern that was noted in several evaluations: a comparatively large share of publications in journals without impact factor or with low impact factors, which was seen as a problem since peer review and acceptance within the research community remains an important instrument to ensure quality of science. The evaluations also indicate that several CRPs would benefit from a better integration of social science research, and the CRPs overall would benefit from integrating a wider range of social sciences beyond economics in their disciplinary portfolio. The CRPs also created the opportunity to share data across Centers and make comprehensive data sets publicly available - an important international public good, and a distinct comparative advantage of CGIAR. The evaluations indicate that more efforts are required to better utilize this potential.

An area that is of particular concern is the instability and the declining share of W1/W2 funding. This concern was strongly expressed in every single evaluation. The shift back to W3 and bilateral funding has reversed one of the fundamental tenets of the CGIAR reform and risks undermining the potential of CRP matrix management. Moreover, the evaluations pointed to the problems the Centers face in sustaining their research infrastructures and other research support under the CGIAR Reform. This topic requires urgent consideration, since W1/W2 funds provide the critical leverage to implement an integrative and collaborative research program across Centers (Section 8.3).

## 10.4 CONCLUDING REMARKS

In view of these findings, one may ask what to conclude overall from these evaluations. Was the creation of CRPs a valuable reform approach for CGIAR? There are good reasons to consider the CRP approach to be valuable, especially if funding flexibility can be regained. The ***evaluations provide evidence of a substantial willingness to collaborate at all levels, and across all CRPs***. This increased collaboration was achieved in spite of the challenges inherent in the CRPs' governance structure: potential conflicts of interest, the potential of organizational capture, and the challenges of dual accountability (Section 8.2). The evaluations indicate that ***this would not have been possible without the leadership qualities of CRP Directors and managers, which are well documented in the evaluations, and without the willingness to cooperate among the leadership of the Centers, and among scientists themselves***. As outlined above, the incentives to collaborate in a major reform effort of CGIAR were strong at the beginning of the reform–and ***to maintain the reform momentum it is important to maintain strong incentives, especially CRP funding, for collaboration*** if the goal of the "CGIAR functioning as one institution" is to be achieved.

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# ANNEX 1: OVERVIEW OF THE 15 CRPS

TABLE A 1: CRP PARTICIPATION BY CENTER

| Objective Improve... | CRP / Center | AfricaRice | Bioversity | CIAT | CIFOR | CIMMYT | CIP | ICARDA | ICRISAT | IFPRI | IITA | ILRI | IRRI | IWMI | ICRAF | WORLD | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Productivity, Profitability, Sustainability, Resilience of Entire Farming Systems* | DS | | ■ | ■ | | | ■ | LC | ■ | | | ■ | | ■ | ■ | | 8 |
| | HT | | ■ | ■ | | | ■ | | | | LC | ■ | | ■ | ■ | | 7 |
| | AAS | | ■ | | | | | | | | | | | ■ | | LC | 3 |
| *Policies and Markets* | PIM | | ■ | ■ | | ■ | ■ | ■ | ■ | LC | ■ | ■ | | ■ | ■ | ■ | 12 |
| *Yields and Profits from Crops, Fish, and Livestock* | Wheat | | | | | LC | | ■ | | | | | | | | | 2 |
| | Maize | | | | | LC | | | | | ■ | | | | | | 2 |
| | GRiSP | ■ | | ■ | | | | | | | | | LC | | | | 3 |
| | RTB | | ■ | ■ | | | LC | | | | ■ | | | | | | 4 |
| | GL | | | ■ | | | | ■ | LC | | ■ | | | | | | 4 |
| | DC | | | | | | | ■ | LC | | | | | | | | 2 |
| | L&F | | | ■ | | | | ■ | | | | LC | | | | ■ | 4 |
| *Nutrition and Diets* | A4NH | | ■ | ■ | | | ■ | | ■ | LC | ■ | ■ | | | ■ | ■ | 9 |
| *Sustainability & Environ. Integrity, Adapt to and Mitigate Climate Change* | WLE | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | | LC | ■ | ■ | 11 |
| | FTA | | ■ | | LC | | | | | | | | | | ■ | | 4 |
| | CCAFS | ■ | | LC | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 15 |
| *Preserve Genetic Crop Diversity* | GeneB | ■ | LC | | | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | ■ | | 11 |
| Total CRPs per Center | | 3 | 10 | 12 | 2 | 5 | 8 | 9 | 8 | 4 | 9 | 8 | 3 | 6 | 8 | 6 | |

*RED=Commodity Center, GREEN= Eco regional Center, BLUE= Natural Resource Management Center, YELLOW=Policy Center*

Source: IEA 2014, p.33, with amendments by Ufer and Birner (2015)

TABLE A - 1

| CRP Name<br>Abbreviation<br>Lead Center | CRP Objectives<br>(according to initial Proposal Documents) | Flagship Projects<br>(according to Extension Proposals) |
|---|---|---|
| | **Systems CRPs** | |
| **Dryland Systems**<br>ICARDA | The overall objective of the Dryland Systems CRP is to improve food security and livelihoods in rural communities of the dry areas through:<br>• enhanced and equitable agricultural innovation systems that link interventions to policy and improve the impact of research and development;<br>• less vulnerable, more resilient rural communities that can better mitigate risk;<br>• productivity growth through sustainable intensification of dryland systems at the farm and landscape levels; and<br>• more resilient and productive dryland agroecosystems that can cope with increased land pressure, climate variation, and other forms of stress | FP1: West African Sahel and Dry Savannas<br>FP2: North Africa and West Africa<br>FP3: East and Southern Africa<br>FP4: Central Asia<br>FP5: South Asia |
| **Integrated Systems for the Humid Tropics (Humidtropics)**<br>IITA | CRP objective is to "To strengthen research and stimulate institutional innovation that increases economic and social returns among rural households adopting enhanced and sustained agricultural production and marketing strategies, while improving the biological and ecological integrity of their natural resource base." – Later simplified as follows: "To improve overall agricultural productivity in a sustainable manner, and transform the lives of the rural poor in the humid tropics." | FP1: West Africa Humid Lowlands<br>FP2: East and Central Africa Humid Highlands<br>FP3: Central Mekong<br>FP4: Central American and Caribbean<br>FP5: Cross-cutting Themes<br>*Research Themes*:<br>1) Systems Analysis and Global Analysis<br>2) Integrated Systems Improvement: Productivity x NRM x Institutions<br>3) Scaling and Innovation |
| **Aquatic Agriculture Systems (AAS)**<br>WorldFish | The mandate of AAS is "to confront this paradox of high ecological productivity mingled with high prevalence of poverty, vulnerability and inequity among social groups. Its goal is to transform AAS into systems that realize their full development potential while remaining resilient as societies and environments change."<br>Systems included: "agricultural systems in which the annual production dynamics of freshwater and/or saline or brackish coastal systems contribute significantly to total household income" | FP1: Program level research and synthesis<br>FP2: Asia's Mega-Deltas<br>FP3: Island systems of South-East Asia and the Pacific<br>FP4: African inland waters<br>*Research Themes*:<br>1) Sustainable increase in system productivity<br>2) Equitable access to markets<br>3) Social-ecological resilience and adaptive capacity<br>4) Gender and equity<br>5) Policies and institutions<br>6) Knowledge sharing, learning and innovation |

TABLE A 2: GOALS AND COMPONENTS OF CRPS

| CRP Name<br>Abbreviation<br>Lead Center | CRP Objectives<br>(according to initial Proposal Documents) | Flagship Projects<br>(according to Extension Proposals) |
|---|---|---|
| | **Commodity CRPs** | |
| **Wheat (WHEAT)**<br><br>CIMMYT | Objective is to ensure that "publicly-funded international agricultural research helps most effectively to dramatically boost farm-level wheat productivity and stabilize wheat prices, while renewing and fortifying the crop's resistance to globally important diseases and pests, enhancing its adaptation to warmer climates, and reducing its water, fertilizer, labor and fuel requirements." | FP1: Maximizing value for money and social inclusivity through prioritization of WHEAT R4D investments<br>FP2: Novel diversity to faster adapt wheat to climate change and resource constraints<br>FP3: Global partnership to accelerate genetic gain in farmers' field<br>FP4: Sustainable intensification of wheat - based cropping systems<br>FP5: Human and institutional capacities for seed systems and scaling -out |
| **Maize (MAIZE)**<br>CIMMYT | Objective is to ""double productivity and significantly increase the incomes and livelihood opportunities from more productive, resilient and sustainable maize-based farming systems on essentially the same land area while contending with climate change and increasing costs of fertilizer, water, and labor." | FP1: Sustainable intensification and income opportunities for the poor<br>FP2: Novel tools, technologies and traits for improving genetic gains and breeding efficiency<br>FP3: Stress resilient and nutritious maize<br>FP4: Aligning with strengthening maize seed systems for effective product delivery<br>FP5: Inclusive and profitable maize futures |
| **Global Rice Science Partnership (GRiSP)**<br>IRRI | "Objective 1: Increase rice productivity and value for the poor in the context of a changing climate through accelerated demand-driven development of improved varieties and other technologies along the value chain;<br>Objective 2: Foster more sustainable rice-based production systems that use natural resources more efficiently, are adapted to climate change and are ecologically resilient, and have reduced environmental externalities;<br>Objective 3: Improve the efficiency and equity of the rice sector through better and more accessible information, improved agricultural development and research policies, and strengthened delivery mechanisms." | FP1: Technology targeting, evaluation, and prioritization along the value chain;<br>FP2: Harnessing genetic diversity and development of genomics tools<br>FP3: Accelerated development of new varieties<br>FP4: Sustainable intensification along the value chain (includes management of rice-based production systems and post-harvest activities)<br>FP5: Catalyzing scaling out and capacity building |
| **Roots, Tubers and Bananas (RTB)**<br>CIP | Objective is "to more fully realize the potential of mandate crops (roots, tubers and bananas) for improving nutrition, income generation, and food security - especially among some of the world's poorest and most vulnerable populations."<br>Crops included: banana, plantain, cassava, potato, sweetpotato, yams, and other tropical and Andean root and tuber crops | FP1: Enhanced Genetic Resources<br>FP2: Productive Varieties and Quality seed<br>FP3: Resilient Crops<br>FP4: Nutritious Food and Added Value<br>FP5: Integrated Livelihood Systems |

| CRP Name<br>Abbreviation<br>Lead Center | CRP Objectives<br>(according to initial Proposal Documents) | Flagship Projects<br>(according to Extension Proposals) |
|---|---|---|
| **Dryland Cereals**<br>ICRISAT | CRP objectives are to "Achieve a critical mass of expertise and resources focused on otherwise neglected crops and areas, and to provide a unified channel for individually inadequate and fragmented efforts; Utilize the comparative advantage of the Centers, and other partner agencies, particularly in high---tech areas of genomics, phenomics and bioinformatics applied via modern breeding methods, including heterosis; and use the presence and prestige of an explicit international program to lift the in---country profile of inadequately resourced poor man's crops – supporting internal infrastructure and human capacity development that will be necessary for lasting implementation."<br>Crops included: barley, finger millet, pearl millet and sorghum | FP1: Priority Setting & Adoption<br>FP2: Improved Varieties & Hybrids<br>FP3: Integrated Crop Management<br>FP4: Seed Systems & Input Services<br>FP5: Postharvest Value & Output Markets |
| **Grain Legumes**<br>ICRISAT | CRP objective is to "are to increase production, sales, consumption and beneficial contribution of farming systems of grain legumes that reduce poverty, hunger, malnutrition of smallholder farmers and their households, while improving the health of mankind and sustainability of farming systems."<br>*Crops included*: chickpea, common bean, cowpea, faba bean, groundnut, lentil, pigeon pea and soybean | FP1: Managing Productivity through crop interactions with biotic and abiotic constraints<br>FP2: Determination of traits that address production constraints and opportunities<br>FP3: Trait Deployment of those traits through breeding<br>FP4: Seed Systems, post-harvest processing and nutrition<br>FP5: Capacity-Building and Partnerships<br>Note: In the first phase, the CRP was structured along 8 product lines (each focusing on specific traits in a specific set of crops) |
| **Livestock & Fish (L&F)**<br>ILRI | CRP objective is to "increase productivity of small-scale livestock and fish systems so as to increase availability and affordability of meat, milk and fish for poor consumers and, in doing so, to reduce poverty through greater participation by the poor along animal source food value chains". ("More meat, milk and fish by and for the poor")<br>Species included: Cattle (dairy & dual purpose), pigs, sheep, goats, fish (tilapia and catfish) | FP1: Animal Health<br>FP2: Animal Genetics<br>FP3: Feeds and Forages<br>FP4: Systems Analysis for Sustainable Innovation<br>FP 5: Value Chain Transformation and Scaling |
| | **NRM CRPs** | |
| **Water, Land and Ecosystems (WLE)**<br>IWMI | CRP objective is to "to learn how to intensify farming activities, expand agricultural areas and restore degraded lands, while using natural resources wisely and minimizing harmful impacts on supporting ecosystems." | FP 1: Integrating Ecosystem Solutions into Policy and Investments<br>FP 2: Sustainably Increasing Land and Water Productivity<br>FP 3: Regenerating Degraded Agricultural Ecosystems<br>FP 4: Recovering and Reusing Resources in Urbanized Ecosystems<br>FP 5: Managing Water Resource Variability and Competing Use |

| CRP Name<br>Abbreviation<br>Lead Center | CRP Objectives<br>(according to initial Proposal Documents) | Flagship Projects<br>(according to Extension Proposals) |
|---|---|---|
| **Forests, Trees and Agroforestry (FTA)**<br>CIFOR | FTA aims at "[…] enhancing the management and use of forests, agroforestry and tree genetic resources across the landscape, from forests to farms (to plantations) and strives to "be the leading global comparative research initiative focused on forestry, agroforestry and tree diversity across the developing world as a vehicle for delivering on relevant aspects of the CGIAR's SRF". | FP1: Enhancing the contribution of forests, trees and agroforestry to production and incomes of forest dependent communities and smallholders;<br>FP2: Managing and conserving forest and tree resources for today's and tomorrow's needs<br>FP3: Co-management of forests, agroforestry and trees in multifunctional and dynamic landscapes<br>FP4: Climate change adaptation and mitigation<br>FP5: Enhancing the contribution and reducing the negative impacts of globalized trade and investment |
| **Climate Change, Agriculture and Food Security (CCAFS)**<br>CIAT | CRP objective is "to promote a food-secure world through the provision of science-based efforts that support sustainable agriculture and enhance livelihoods while adapting to climate change and conserving natural resources and environmental services". | FP 1: Climate-smart agricultural practices<br>FP 2: Climate information services and climate-informed safety nets<br>FP 3: Low-emissions agricultural development<br>FP 4: Policies and institutions for climate-resilient food systems |
| | **PIM and A4NH CRPs** | |
| **Policies, Institutions, and Markets (PIM)**<br>IFPRI | CRP objective is to "identify and promote implementation of policies, institutions, and markets to improve food security and incomes of the rural poor on a sustainable basis." The program seeks to produce a body of knowledge to support appropriate policies, institutions and markets for pro-poor, sustainable agricultural growth. | FP1: Foresight Modeling<br>FP2: Science Policy and Incentives for Innovation<br>FP3: Adoption of Technology and Sustainable Intensification<br>FP4: Policy and Public Expenditure<br>FP5: Value Chains<br>FP6: Social Protection<br>FP7: Natural Resource Property Regimes<br>FP8: Cross-cutting: Gender, Partnerships, and Capacity Strengthening |
| **Agriculture for Nutrition and Health (A4NH)**<br>IFPRI | CRP objective is to "work to accelerate progress in improving the nutrition and health of poor people by exploiting and enhancing the synergies between agriculture, nutrition, and health through four key research components: value chains, biofortification, control of agriculture-associated diseases, and integrated agriculture, nutrition, and health development programs and policies." | FP1: Biofortification<br>FP2: Integrated Programs and Policies<br>FP3: Value Chains for Enhanced Nutrition<br>FP4: Agriculture-Associated Diseases |

TABLE A 3: GOVERNANCE AND MANAGEMENT STRUCTURE OF THE CRPS

| | Advisory / oversight body | Composition* | Management bodies | Composition* | Assessment of the structure of governance and management in the CRP evaluations |
|---|---|---|---|---|---|
| **Dryland Systems** | **Independent Steering Committee** | 13 members:<br>8 external (incl. chair)<br>DG ICRISAT<br>DG ICRAF<br>Ex officio:<br>CRP Director<br>DG ICARDA<br>BoT Chair ICARDA | **Research Management Committee (RMC)** | 14 members;<br>CRP Director (chair)<br>Representatives of 8 participating Centers<br>5 Flagship Coordinators | The current governance structure and management processes are largely suitable for effectively implementing the CRP. Delay in filling staff positions of the PMU was identified as a problem. Establishment of a functioning M&E system (using a CGIAR-supported platform) was positively assessed. |
| | | | **Program Management Unit** | CRP Director<br>& Staff | |
| **Humidtropics** | **Independent Advisory Committee** | 10 members:<br>*(composition not clear from documentation, includes external members (incl. chair) as well as DG Bioversity)* | **Management Committee** | CRP Director<br>5 Research Theme Leaders<br>4 Area-based flagship managers | Evaluation did not comment on governance arrangements. Decentralized management arrangements were seen as positive. Institutional and management arrangements were seen to be still evolving, and better documentation of key management decisions was recommended. |
| | | | **Executive Office** | CRP Director<br>Chief Officer Management<br>& Staff | |
| **AAS** | **Program Oversight Panel (POP)** | 10 members:<br>8 external (incl. chair)<br>DG WorldFish<br>BoT member of IMWI | **Leadership Group** | 22 members:<br>CRP Director<br>CRP Head of Operations<br>9 research leaders<br>5 regional/country leaders<br>Representatives of IMWI and Bioversity<br>4 external | The evaluation found that, in order to fulfil its oversight role, and thus provide AAS with a more robust governance structure, the position of the POP must be significantly strengthened. AAS was found to benefit from the well-functioning systems of WorldFish for financial and human resource management. The introduction of e introduction of One Common System (OCS) was seen positive, but the collection of management information was found to be deficient. |
| | | | **Management Team (MT)** | CRP Director and 5 research leaders (HQ) | |
| | | | **Program Support Unit (PSU)** | CRP Director<br>CRP Head of Operations<br>& Staff | |
| **WHEAT** | **WHEAT-Independent Steering Committee (W-ISC)** | 12 members:<br>8 external (voting; incl. chair)<br>5 ex officio (non-voting)<br>CRP Director<br>DG CIMMYT<br>DG ICARDA<br>BoT Program Committee Chairs of CIMMYT and ICARDA | **WHEAT-Management Committee (W-MC)**<br>reports to W-ISC and CIMMYT BoT | 10 members:<br>WHEAT Director (Chair)<br>DDG ICARDA (Co-Chair)<br>DDG CIMMYT<br>3 Program Dir.'s CIMMYT<br>1 Program Dir. ICARDA<br>3 external members | Revised governance structure and processes of WHEAT were found to be suitable for effectively implementing WHEAT and facilitating increased programmatic collaboration between CIMMYT, ICARDA and other partners; changes were seen to have promoted greater authority and capacity of the CRP director to manage for results; and ensure that the CRP governance is free of conflicts of interest. |
| | | | **WHEAT Program Management Unit** | WHEAT CRP Program Manager<br>& Staff | |
| **MAIZE** | **MAIZE Independent Steering Committee (M-ISC)** | 10 members:<br>5 external (incl. chair)<br>DG CIMMYT<br>DG IITA<br>Program Dir. CIMMYT<br>DDG CIMMYT (ex officio)<br>MAIZE CRP Program Manager (ex officio) | **MAIZE Management Committee (M-MC)** | 11 members:<br>MAIZE Director (Chair)<br>DDG CIMMYT<br>DDG IITA<br>3 Program Dir.'s CIMMYT<br>1 Program Dir.'s IITA<br>1 IITA senior scientist<br>3 external | Inclusiveness, transparency, and responsiveness of the G&M bodies was found be good; CRP was found to be well-managed, with clear reporting lines and transparent decision-making.<br>Evaluation recommended appointing a CRP Director to give the position greater authority and resources to manage for results; CRP Director should report directly CIMMYT BoT and Program Committee of IITA. (Note: CRP Director has meanwhile been appointed). |
| | | | **MAIZE Program Management & Team** | MAIZE CRP Program Manager (reports to CIMMYT DDG)<br>Staff | |
| **GRiSP** | **GRiSP Oversight Committee (OC)** | 14 members:<br>7 external (incl. chair)<br>DR IRRI<br>DG AfricaRice<br>4 BoT members of IRRI, AfricaRice and CIAT | **GRiSP Program Planning and Management Team (PPMT)**<br>reports to IRRI DG & BoT | CRP Director<br>DDG IRRI<br>DDG AfricaRice<br>Dir. Agrobiodiv. CIAT<br>3 external members | Program oversight responsibilities of the OC and Center Boards were found to be effective and efficient for the separate elements of the program; at the GRiSP level, the ability of the OC to perform its oversight function could be enhanced by enlisting outside expertise. |
| | | | **Program Management Unit** | CRP Program Manager<br>& Staff*** | |
| **RTB** | **Steering Committee** | 9 members:<br>7 external<br>DG CIP<br>DG Bioversity | **Management Committee (MC)** | DDGs of CIP, CIAT, Bioversity and IITA<br>External member (CIRAD) (assisted by Theme Leaders and Center Focal Points) | RTB was found to have made significant progress in establishing governance and management structures and processes; The creation of the ISC was seen to have improved governance and works well with the Program Management Unit. Overarching business framework was found to be missing. RTB Centers were advised to develop an alliance compact. |
| | | | **Program Management Unit (PMU)** | CRP Director<br>& staff | |
| **Grain Legumes** | **Steering and Advisory Committee** | 15 members:<br>10 external (incl. chair)<br>DGs of IITA, ICARDA & CIAT<br>*Ex officio:*<br>DG ICRISAT<br>CRP Director | **Research Management Committee (RMC)** | CRP Director***<br>9 Flagship Coordinators<br>8 Product Line Coordinators<br>2 Resource Persons | Evaluation concluded that combining the Steering Committee with the Independent Advisory Committee led to a body that is too large and not independent. The Grain Legumes Director and Product Line Coordinators were found to have too limited authority vis-à-vis the participating Centers. |
| | | | **Program Management Unit** | CRP Director<br>Senior Program Manager and staff*** | |

| | | | | | |
|---|---|---|---|---|---|
| **Dryland Cereals** | **Steering and Advisory Committee** | 12 members:<br>9 external (incl. chair)<br>DG ICARDA<br>*Ex officio:*<br>DG ICRISAT<br>CRP Director | **Research Management Committee (RMC)** | CRP Director***<br>*Core team:*<br>DDG ICARDA<br>DDG ICRISAT<br>6 external<br>*Technical team:*<br>9 FP Coordinators<br>5 Resource Persons<br>(8 ICRISAT, 3 ICARDA, 2 external, 1 vacant) | Parallel management structures of Dryland Cereals CRP and the management of the ICRISAT Center Dryland Cereals research program were found to have created confusion and inefficiency and resulted in duplication of efforts. Removing overlap in nomenclature was recommended. The CRP Director was found not to have sufficient authority to manage resources for implementation. |
| | | | **Program Management Unit** | CRP Director<br>Senior Program Manager and staff*** | |
| **Livestock & Fish** | **Science and Partnership Advisory Committee (SPAC)** | 7 members:<br>All external | **Program Planning and Management Committee (PPMC)** | CRP Director<br>Representatives of the 4 CGIAR Centers<br>CRP Head of Partnerships<br>Leaders of each of the 3 main CRP areas of science<br>ILRI Director of Corporate Services | Governance arrangements were found to be clearly structured well-functioning after adjustments were made in the relations between SPAC and the other governance bodies. The evaluation has identified a number of problems with systems for managing research, reporting, staff and finance, which fully meet the demands of a large and complex program. |
| | | | **L&F Management Unit** | CRP Director<br>Staff | |
| **WLE** | **Steering Committee** | 11 members:<br>8 external (incl. chair)<br>DG IMWI<br>DR ILRI<br>CRP Director (ex officio) | **Management Committee** | CRP Director<br>Flagship and Research Theme Leaders | The evaluation observed tensions caused by perceptions that the Steering Committee was too directional and dogmatic. Insufficient diversity of SC was a contributing factor, but tensions were observed to have diminished lately. The operational management of WLE was judged to be very good, but strategic management was seen as a matter of concern due to insufficient guidance on key research issues. Frequent change in CRP leadership was identified as an underlying problem. |
| | | | **Operations Team (OT)** | 7 members:<br>CRP Director<br>& Research Leaders<br>& Staff | |
| **FTA** | **Steering Committee** | 8 members:<br>5 external (incl. chair, and incl. representative of CIRAD)<br>DC CIFOR<br>DDG ICRAF<br>CRP Director (ex officio) – who is also DDG CIFOR | **Leadership Group** | CRP Director<br>Coordinators of Flagships 1-5, Gender and Sentinel Landscape Coordinators, Members of the Monitoring, Evaluation and Impact Assessment Team<br>DDGs may also attend meetings | The evaluation found that the Lead Center (CIFOR) had performed well, but the evaluators had fundamental concerns regarding the governance structure of the CRP, which was judged to be too complex. The evaluation found that the mandate of the Steering Committee should be considerably strengthened. The arrangement that the Lead Center has legal and fiduciary responsibility for the CRP was criticized. Moreover, the CRP Director's mandate was found to be too weak. |
| | | | **Management Support Group (MSG)** | CRP Director<br>& Staff | |
| **CCAFS** | **CCAFS Independent Science Panel (ISP)** | 11 members:<br>8 external (voting), incl. chair<br>3 ex-officio (non-voting):<br>CRP Director<br>CIAT BoT member<br>Future Earth Member<br>*ToR envisage 10 external members | **Program Management Committee (PMC)** | 6 members:<br>CCAFS Director (reports to CIAT DG & ISP)<br>3 research leaders from CIAT, IMWI & ICRISAT<br>2 external | CCAFS was found to have advantage of its ability to 'outsource' the management of key components of the Program to non-CGIAR specialist organizations; evaluation quotes CCAFS-commissioned review, which concluded that ISP and PMC have set up effective mechanisms for strategic decision-making. Management mechanisms (including at CIAT) which have been put in place to support CCAFS, were also assessed positively. |
| | | | **Coordinating Unit** | Head of Research<br>Head of Program Coordination & staff hosted by University of Copenhagen | |
| **PIM** | **Science and Policy Advisory Panel (SPAP)** | 9 members:<br>8 external<br>DG Bioversity | **Management Committee** | CRP Director<br>5 IFPRI research leaders<br>Research leaders from ICRAF and Bioversity<br>2 external | The evaluation found that SPAP does not exercise oversight functions. The evaluation noted that the CRP Director has considerable autonomy to establish procedures, but no influence on researchers' performance appraisals and bilateral projects. Dissatisfaction among staff in other Centers was noted regarding PIM's allocation of W1/W2 funds. |
| | | | **Management Unit** | CRP Director<br>& Staff | |
| **A4NH** | **Independent Advisory Committee (IAC)** | 8 external<br>Ex officio:<br>DG IFPRI<br>DG IITA | **Planning and Management Committee (PMC)** | CRP Director<br>4 Flagship leaders<br>2 other Center Focal Points<br>2 external | IAC was found to play only an advisory role, even though its TOR envision an oversight role. The evaluation identified potential conflict of interests in the CRP's governance and management. The evaluation noted that the CRP (like other CRPs) has little room for manoeuvre as key systems (e.g., human resources) are under the authority of the Centers. |
| | | | **Program Management Unit (PMU)** | CRP Director<br>& Staff | |

* Composition in March 2016, according to the websites of the CRPs. Changes made during the evaluation period are discussed in the text. The appointment of a WHEAT CRP Director is not reflected in the table since it was not indicated on the CRPs website yet.

** Staff in this column refers to staff members who are specifically hired for CRP management (in most cases, 3-4 staff members). They may include staff in charge of administration and finance of the CRP, coordination, communication, and monitoring and evaluation.

** Grain Legumes and DrylandCereals have the same CRP Director and same Program Management Unit (comprising 3 staff members).

# ANNEX 2: OVERVIEW OF CRP EVALUATIONS

TABLE A 4: OVERVIEW OF THE CRP EVALUATIONS

| | CRP/IEA * | completed | Team members | No of countries visited | No of interviews | No of researchers survey was sent to | Response rate | Systematic review of publications | H index analysis | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| DrySys | CRP | Nov-15 | 3 | 3 | > 100 | 144 | 27% | no | no | also conducted partner suurvey |
| HT | CRP | Feb-16 | 3 | 4 | 242 | 260 | 58% | no | no | |
| AAS | IEA | Apr-15 | 6 | 6 | 173 | 120 | 76% | yes | no | |
| WHEAT | IEA | Apr-15 | 5 | 6 | 191 | 109 | 61% | yes | yes | |
| MAIZE | IEA | Apr-15 | 6 | 4 | 107 | 294 | 23% | yes | yes | |
| GRiSP | IEA | Dec-15 | 7 | 10 | 275 | 204 | 55% | yes | yes | |
| RTB | IEA | Dec-15 | 5 | 9 | > 300 | 190 | 56% | yes | yes | |
| L&F | IEA | Jan-16 | 7 | 7 | >270 | 194 | 49% | yes | yes | |
| GrainLG | CRP | Mar-16 | 4 | 7 | > 300 | 377 | 33% | yes | no | |
| DC | CRP | Jan-16 | 6 | 5 | ~ 150 | 90 | 40% | no | yes | also conducted partner suurvey |
| WLE | IEA | Mar-16 | 5 | 8 | > 200 | 313 | 33% | yes | yes | |
| FTA | IEA | Jul-14 | 6 | n/a | ~150 | 312 | 62% | no | yes | also conducted partner suurvey |
| CCAFS | IEA | Jul-16 | 4 (+3) | 6 | ~150 | 407 | 40% | yes | yes | |
| PIM | IEA | Apr-15 | 5 (+4) | 11 | 300 | 312 | 61% | yes | yes | also conducted partner suurvey |
| A4NH | CRP | Sep-15 | 4 | 3 | 250 | n/a | 30% | no | no | also conducted mini survey of applicatnts for A4NH seed grants and external experts |

*indicates whether evaluation was commissioned by IEA or the respective CRP

Source: IEA.

# ANNEX 3: REVIEW TEAM - PROFILES

REGINA BIRNER has been the Chair of Social and Institutional Change in Agricultural Development at the University of Hohenheim (Germany) since 2010. She has more than 20 years of experience in development-oriented agricultural research and has led numerous research projects in Asia and Africa. From 2004 to 2010, she was the leader of IFPRI's Research Program on "Governance for Agricultural and Rural Development". In 2008 she served in the core author team of the World Development Report on "Agriculture for Development." Dr. Birner has acted as advisor to international organizations, including the World Bank, FAO and USAID and participated in various evaluations. Her research focuses on socio-economic issues in the context of agricultural development, including topics such as participatory research, institutions, knowledge and innovation, and gender. Dr Birner has extensive experience in evaluation – she led and participated in major evaluations of major programs of FAO, World Bank and IFAD. Dr. Birner has a PhD in Socio-Economics of Agricultural Development from University of Göttingen.

DEREK BYERLEE is an Independent Researcher based on Washington DC. He is currently Visiting Scholar at Georgetown University, USA. In 1978 he joined the International Maize and Wheat Improvement Center (CIMMYT), based in Mexico and South Asia, and spent the bulk of his career there, working as an economist and research manager. In 1994, he joined the World Bank where we worked as Lead Economist, Rural Strategy and Policy Adviser and Leader of Agricultural and Rural Development in the Ethiopia Country Office. He finished his career in the Bank by co-directing preparation of the Bank's flagship World Development Report 2008, the first on agriculture since 1982. Since leaving the World Bank, he has continued working with a number of international organizations with an emphasis on investment in agribusiness, large-scale farming and plantations, and intensification and land use. In 2009-12 he served as Chair of the Standing Panel on Impact Assessment of the CGIAR's Science Council. He was elected a Fellow of the American Association of Agricultural Economists in 2004. Dr. Byerlee has a PhD in Agricultural Economics from Oregon State University, USA.