

# Lessons learned and ways forward on CGIAR capacity development: A discussion paper

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- Processes: Monitoring and evaluation; documentation and sharing of past experiences; research on learning
- Products: CGIAR system-wide CD interventions in partnership

## Key messages

### Introduction

- CGIAR has recognized capacity development as a core function. Nevertheless, the role of capacity development in the Consortium has not yet been fully fleshed out.
- The Consortium Office has initiated a process to develop a CGIAR capacity development strategy.
- This discussion paper is a contribution to that process.

### A short history of capacity development in the CGIAR

- Capacity development in CGIAR has evolved to reflect a growing focus on agricultural research for development, with an emphasis on enabling innovation.
- Training as a stand-alone activity has declined over time, and has been decentralized by the Centers.
- Past attempts to establish collective action in CGIAR on capacity development have not lived up to expectations.

### The current state of capacity development in CGIAR

- Achieving CGIAR's System Level Outcomes will require integrating a range of research areas and involving many new partners; this has implications for the nature of capacity development in CGIAR.
- Questions about how the CGIAR Research Programs will deal with capacity development might be addressed by taking a broader view of the Program agendas, specifically the Intermediate Development Outcomes and their related Impact Pathways.

### The role of training

- Training is highly relevant for strengthening national research and extension capacity; as such, it needs to stay embedded in CGIAR Research Programs.
- CGIAR Research Programs bring new opportunities to raise the visibility and impact of training and to engage in global initiatives and alliances that enable progress in agricultural education.
- CGIAR Research Programs will yield promising research outcomes that have a huge potential to benefit targeted end-users and could be the subject of an intensified capacity development effort by the Consortium.

### Strengthening institutional capacity through agricultural research for development

- The requirement to deliver development outcomes is an opportunity for CGIAR Research Programs to build effective capacity development approaches within collaborative research.
- To meet this challenge, Program staff will need to enhance their own knowledge and skills for AR4D.
- Because partnerships and capacity play an important role in the up- and out scaling of research outputs, we need a better understanding of how research outputs are adopted, transformed and used by stakeholders.

- Strengthening the capacity for influencing policy effectively is a great opportunity for knowledge exchange and learning among members of the Consortium and a domain that CGIAR needs to excel in to make a difference in AR4D.

### **Monitoring and evaluating capacity development**

- CGIAR lacks a common framework for monitoring and evaluating its capacity development activities.
- Despite the challenges involved, it is essential for CGIAR to learn from its successes and failures.
- CGIAR must develop an agile system for monitoring and evaluating the inputs, outputs, outcomes and impacts arising from its capacity development activities.

### **Opportunities**

- People: The future CD network needs broad buy-in, participation of partners and a comprehensive approach to CD based on a thorough needs assessment.
- Processes: The Consortium Office should facilitate research on capacity development, and innovative approaches to monitoring and evaluation, documentation and sharing of experiences. Capacity development must be part of CGIAR's advocacy and communications strategy
- Products: The Consortium Office should explore, through the CD network, the added value of offering capacity development on themes of interest to multiple CGIAR Research Programs. It should explore a strategy with partners to influence higher education and should make learning resources more visible and accessible through an on-line information system. A common monitoring and evaluation system of CD is badly needed.

## Summary

### Introduction

This paper is a contribution to the establishment of a new capacity development (CD)<sup>9</sup> strategy, a process that the Consortium Office will facilitate, with external input, during 2013. The paper explores the lessons learned from CGIAR's experience with CD and reflects the findings of a working group that was brought together in late 2012.

The objective of the paper is to identify the roles that individual and institutional CD might play in CGIAR in order to increase CGIAR's impact on the welfare of smallholder farmers and the sustainability of their farming systems. A number of case studies have been included; these indicate the need for a more comprehensive approach to documenting the lessons learned to date. The paper also discusses possible interventions by the Consortium to ensure that CD contributes positively to achieving development outcomes through the CGIAR Research Programs. While the paper gives only partial answers, the authors have found it to be an important opportunity to learn and start to re-engage as a CD community. The paper is intended in the first instance for an internal CGIAR audience, to inform strategic planning and decision-making on future CD investments.

### A short history of capacity development in CGIAR

CGIAR's approach to CD has evolved considerably over the past few decades, as agricultural research has come to focus more sharply on development. A decline in core funding led most Centers to reduce or eliminate training as a stand-alone activity, and to embed it directly into research projects. While this decentralized responsibilities for CD in Centers and weakened the role of training units, it also allowed research teams to develop and foster strong research and training partnerships with a wide range of institutions.

Current approaches to CD have their roots in two closely related theoretical fields: social learning and innovation systems. The trend towards results-based management in CGIAR includes a perception of CD as means to enable social learning and innovation and promote sustainable development as a collective achievement. Nevertheless, it appears that CD efforts by the many CGIAR Research Programs are not keeping pace. In current Program proposals and work plans, CD activities are scattered and rarely presented in terms of an innovation or systems approach, continuing to focus on rather isolated interventions by research theme. Furthermore, the CD activities are not seriously backed by resources for implementation, which weakens accountability within the system.

If CD is to live up to its mandate to support agricultural research for development (AR4D), CGIAR must see it as an important complement to research and create the organizational and management

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<sup>9</sup> In this paper, we have chosen to use the term capacity development as opposed to capacity building (which refers to a process that supports only the initial stages of building or creating capacities) or capacity strengthening (which tends to focus on scaling up existing capacities). Capacity development implies a process of creating and building capacities and their use, management and retention.

structures that will allow the design, implementation, monitoring and evaluation of appropriate CD interventions.

### **The role of training**

Training is highly relevant to national capacity needs and a major contributor to achieving positive outcomes from research. An estimated 80 000 professionals have received such training from CGIAR since its inception; the system spends nearly a fifth of its funding on formal and informal training.<sup>10</sup> A past emphasis on long-term courses strengthened partner knowledge and practical skills, provided deep insight into the complexity of research management and significantly influenced the attitudes, values and motivation of trainees. Such training has been an essential tool for expanding and strengthening CGIAR's network of collaborators. CGIAR might consider creating a portfolio of training opportunities with partners on key AR4D issues. A dedicated network can help to share best practices with the CGIAR Research Programs and its partners and work with them to ensure a streamlined, comprehensive and sustained approach to such training.

While agricultural education and training (AET) systems in countries like Brazil have grown stronger and others, such as India, are currently discussing broad reforms, serious constraints to quality education on AR4D in many countries remain. Enrolment has declined and past neglect and low levels of investment have prevented many national AET systems from equipping graduates to meet the needs of modern agriculture and to contribute to agricultural innovation systems with a range of hard and soft skills. The needs of young people, in particular, must become a central focus of institutional CD programs. For its part, CGIAR needs to define the role it will play in agricultural higher education, beyond its involvement in post-doc and visiting scientists programs.

A common obstacle to CD is the absence of 'off-the-shelf' learning materials that can be used at various levels, from higher education and on-the-job training for professionals, to training at the community level. The transformation of research outputs into learning products for specific target groups is essential and should be part of the impact pathway design of the programs. Most Centers lack dedicated capacity for instructional design.

The Consortium could work on two fronts to increase the visibility and use of learning materials. First, with support from current knowledge management efforts, Centers and programs could enhance access to existing resources through improved and coordinated repositories and online information systems. Second, the Consortium could select a number of promising research outputs – with the help of the CD network – and develop a CD strategy for them, including learning resources that are matched by investments in awareness and training for enhancing their use.

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<sup>10</sup> The CGIAR at 40 and Beyond, CGIAR, 2011

[http://library.cgiar.org/bitstream/handle/10947/2549/cgiar%4040\\_final\\_LOWRES.pdf?sequence=1](http://library.cgiar.org/bitstream/handle/10947/2549/cgiar%4040_final_LOWRES.pdf?sequence=1)

## **Strengthening institutional capacity through agricultural research for development**

Because of their size and scope, CGIAR Research Programs have excellent opportunities for embracing the consistently innovation system approach to CD, which puts a high priority on facilitating learning among people and institutions. This requires new knowledge, attitudes and skills to undertake collaborative research. It also raises the challenge of how to engage more systematically with a broader range of AR4D actors such as policy-makers in the public and private sectors, extension workers and NGOs.

A second important challenge is to develop the capacity of CGIAR researchers to undertake effective development-oriented research. For scientists and teams to conduct, for example, gender-sensitive research or to work in new partnership arrangements, many will need to acquire new skills.

The Consortium Office could facilitate consistent research on learning as a contribution to the evolving knowledge about collaborative efforts in AR4D. Research could concern, for example, partnership arrangements, institutional CD, whether and how CD supports the achievement of development outcomes; the role of ICTs in agricultural education, extension, farmer mobilization and empowerment; and the best social learning and multi-stakeholder models for a more equitable, sustainable and innovative agriculture.

CGIAR's outcome orientation requires understanding how research outputs are used, transformed and adapted by a wide range of stakeholders. Facilitating and learning from scaling-up and scaling-out processes are critical to delivering on the intended outcomes. There is a need to 'invest in the arrows' that link outputs to outcomes and CD, together with knowledge sharing and partnerships, has a key role to play. The CD network can facilitate the adoption of a range of strategic approaches, one being capacity development for influencing policy effectively, a great opportunity for knowledge exchange and learning among members of the Consortium and a domain that CGIAR needs to excel in to make a difference in AR4D.

## **Monitoring and evaluating capacity development**

CGIAR does not yet have a systematic approach to monitoring, tracking, and reporting CD activities. As a result, the assessment of CGIAR's performance in this area is challenging and does not do justice to the efforts that have been undertaken over time. A mere head count of people who have attended training courses is not enough to capture the extent to which capacity has been strengthened at individual, institutional and system levels. Many participatory monitoring and evaluation (M&E) approaches focus on outcomes and learning. Such approaches can provide research managers with useful information on the efficiency, relevance, sustainability, impact and effectiveness of CD. Through a continuous, inclusive, and well-organized exchange of information and experience, M&E can strengthen partner ownership of a CD intervention, increasing the chances of adoption and sustainability.

In order to truly understand CGIAR contributions to CD, it is necessary to identify specific inputs (human and financial resources expended on CD) and outputs (direct results of CD actions), using an impact pathway approach. There are numerous ways to collect information on inputs, outputs, outcomes and

impacts. The difficulty of tracking these indicators will vary across CGIAR Research Programs, specifically among programs with a commodity, systems, natural resource management or policy focus. Effective documentation is needed to record the contributions of researchers and research teams to CGIAR's CD goals.

## **Opportunities**

There are three entry points for Consortium Office-led initiatives: people, processes and products:

*People:* To be successful, the CD network will need broad buy-in from Centers. The active participation of partners and a range of staff with diverse skills are key to ensuring a comprehensive approach to CD. Collective action should be based on a thorough needs assessment and require fund raising through the Consortium Office.

*Processes:* The Consortium Office can facilitate CD advances in priority research areas. Research on CD has to be encouraged as well. Innovative approaches and significant indicators on different aspects of CD have to be developed. Experiences have to be documented and shared broadly as CD becomes part of CGIAR's advocacy and communications strategy

*Products:* The Consortium Office should explore – with help from the CD network – the value of offering CD on themes of interest to multiple CGIAR Research Programs. It should set up a strategy with partners to influence higher education, and should make learning resources more visible and accessible through an on-line information system. A common monitoring and evaluation system of CD needs to be developed.



# I. Introduction

## Key messages

- CGIAR has recognized CD as a core function. Nevertheless, the role of CD in the Consortium has not yet been fully fleshed out.
- The Consortium Office has initiated a process to develop a CGIAR CD strategy.
- This discussion paper is a contribution to that process.

In 2009, world leaders attending the World Summit on Food Security made a unanimous commitment to eradicating hunger from the face of the earth, with a first goal of reducing the number of undernourished people in half by 2015. In response, CGIAR undertook a major reform process, uniting 15 international research Centers in a Consortium that works towards the shared goals articulated in the *Strategic Results Framework (SRF)*.<sup>11</sup> CGIAR has identified a number of issues that cut across its current 15 research programs and directly affect the likelihood of success in achieving the four system-level outcomes: reducing rural poverty, increasing food security, improving nutrition and health and the sustainable management of natural resources. CD, particularly but not exclusively for partners in national agricultural research systems, is one of those crosscutting issues<sup>12</sup>. Nonetheless, the role of CD in the new CGIAR structure has not yet been fully fleshed out.<sup>13</sup>

The SRF anticipates an expansion in CGIAR's CD activities, "from imparting research skills to include more learning by doing, testing of new methodologies and participatory approaches, often building on a base of new knowledge. This implies more innovative approaches to CD, often tied to more effective knowledge management, and much more differentiated approaches, depending on immediate need within the implementation of the CGIAR Research Programs." The SRF builds on an independent review, which recognized CD as a core function of CGIAR, and the need for broadening the stakeholder base, enhancing the processes that strengthen the actors along value chains, rewarding CGIAR scientists for their contributions to CD and ensuring that CD is included in project and program proposals.

In this context, the CGIAR Consortium Office proposed a process for the creation of a CD strategy, establishing a working group in late 2012 to review and support the process. The Consortium Office then invited a number of CD professionals to write this discussion paper as a contribution to the strategy development process, which will unfold during 2013.

The paper seeks to clarify the role that the CGIAR might play in CD for AR4D in the future. The authors review the lessons learned from CGIAR's long experience with CD and identify opportunities for

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<sup>11</sup> Strategy and Results Framework, CGIAR, 2011

<sup>12</sup> Some other cross-cutting issues are impact assessment, gender, communication and knowledge management

<sup>13</sup> CGIAR working document: Proposal to develop a CGIAR Capacity Strengthening Strategy and initiate system level actions. 2012

collective action by the Consortium to help achieve the development outcomes of the CGIAR Research Programs.

Based on working group discussions, the authors of this paper have identified a number of challenging questions, which are addressed in the paper:

- What role should training play in the new CGIAR?
- How can we attract a new generation of agricultural researchers?
- How do we ensure that collaborative research processes strengthen the institutional capacities of stakeholders?
- How can we increase the impact and scale of CD interventions?
- How can we improve and harmonize efforts to monitor, evaluate and assess the impact of CGIAR's CD strategies and activities?

CGIAR has contributed to the inclusion of learning and innovation approaches in research and partnership arrangements and has learned a great deal from the experience. The authors summarize a number of case studies, which are found throughout the paper.

As these examples illustrate, CD is obtained "by a large variety of actors and through a range of practices such as collaborative or participatory research, action learning or learning by doing, thesis research, mentoring, targeted research fellowships and internships, specialized group training workshops, production of learning materials and resources for re-use, and collaboration with education institutions to provide inputs to curriculum development. All of these interventions build both individual and institutional capacity."<sup>14</sup> Nevertheless, from a Consortium perspective they are probably still islands of success, and we recognize that a more comprehensive and systemic analysis of experiences, which includes the perspective of partners, is required to develop impact pathways that bring an ocean of change.<sup>15</sup>

This discussion paper is initially intended for an internal CGIAR audience, to inform the Consortium's strategic planning and decision-making on future CD investments. Eventually, it may be disseminated more widely to share the lessons learned with external partners, stakeholders and practitioners.

This paper was written collaboratively on a wiki by the following authors:

- Simone Staiger (CIAT) provided overall coordination and input to the chapters.
- Iddo Dror (ILRI) took the lead on the *Current state of CD in the CGIAR*.
- Petr Kosina (CIMMYT), Joyce Maru (ILRI), Ndeye Ndack Diop (GCP) and Simone Staiger (CIAT) produced the section on *The role of training*.
- Simone Staiger, Petr Kosina (CIMMYT), Per Rudebjer (Bioversity International) and Zoumana Bamba (IITA) wrote the section on *Institutional capacity development*.

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<sup>14</sup> Staiger et al. 2010. Towards a Capacity Development Platform, Working document for the CGIAR change process

<sup>15</sup> Vidal, A. 2012. An ecosystems approach: From islands of success to oceans of change

<http://waterandfood.org/2013/02/25/an-ecosystems-approach-from-islands-of-success-to-oceans-of-change/>

- Suresh Babu (IFPRI) wrote the section on *Monitoring and evaluating capacity development*.
- Ruth Raymond (consultant) edited the paper.

Case studies were kindly provided by IITA, CIMMYT, Bioversity International, IFPRI, ILRI, IRRI, the Generation Challenge Program (GCP), the Challenge Program on Water and Food (CPWF) and YPARD, the young professionals' platform for AR4D.

## II. A short history of capacity development in CGIAR

### Key messages

- CD in CGIAR has evolved to reflect a growing focus on agricultural research for development, with an emphasis on enabling innovation.
- Training as a stand-alone activity has declined over time, and has been decentralized by the Centers.
- Past attempts to establish collective action in the CGIAR on CD have not lived up to expectations.

### Evolution over time

CD in CGIAR has evolved considerably over the decades, as agricultural research has come to focus more broadly on development and as many countries have significantly strengthened individual and institutional capacities. Table 1 (Staiger, 2012) summarizes the shift from a relatively narrow focus on training to improve food production to a more systemic approach to rural innovation.<sup>16</sup>

Decade	Research focus	Key partners	Principle mode of knowledge exchange	Entry points for capacity development
1960s and 1970s	Improving food production through plant breeding	National agricultural research institutes	Technology transfer through extension	Training
1980s and 1990s	Natural resource management and sustainability	Advanced research Institutes	Networks	Participatory research
2000s	Development challenges and innovation systems	Multi-stakeholder partnerships	Multi-stakeholder innovation platforms	Learning alliances

Source: Based on Ekboir and Sette (2010).

### The early years

The 70s and 80s were marked by core-funded training activities on research areas, such as plant breeding and research station management. Training courses were organized and delivered by specialists, based on reusable learning materials. Then as now, many universities were producing graduates who tended to lack the practical experience and skills needed by NARS. CGIAR training mostly took the form of courses for NARS scientists, with the advantage that participants became long-term allies in disseminating CGIAR outputs within NARS.

<sup>16</sup> Staiger-Rivas, S.; Alvarez, S.; Ashby, J.; Lundy M.; Muthoni, R.; Victoria, P. A.; Quirós, C. A.; Sette, C.; Rajasekharan, M.; Russell, N. [Strengthening Capacity to Achieve Eco-Efficiency through Agricultural Research for Development](#). In: Eco-Efficiency: From Vision to Reality. CIAT, 2012

The report “Evaluation of Impact of Training in the CGIAR”<sup>17</sup> provides an insight into the changing context that has influenced CD in recent years. Starting in the 1990s, a major shift in the amount and type of donor funding to CGIAR had a massive impact on how training was organized, funded and implemented across the system. The decline of core funding led to a reduction or elimination in most Centers of training as a stand-alone activity. The Centers relied on the ability of their scientists to attract funding for training within their research projects. Training units were weakened, with few staff qualified in training, pedagogy or adult education. The responsibility for training itself was often passed on to national or regional partners, with mixed results. On the positive side, this decentralization connected the Centers more directly with field activities, which allowed the Centers to involve extension, farmer, and market capacities.

### **A shift in focus**

As agricultural research began to focus more on development and the importance of training as a practical instruction practice declined, CGIAR searched for better ways to reach a large number of end users. Social scientists began to question the so-called “pipeline” approach for addressing farmers’ problems by providing them with scientifically proven technologies. Starting about 30 years ago, various participatory approaches were developed and tested, in which users of agricultural research products and services learn together through partnerships and stakeholder engagement, thus increasing the chances of research results being put to use.<sup>18</sup>

In parallel, two important shifts in thinking about agricultural research have taken place. The first is a progressive move towards a more systems-oriented perspective in CD. Second, there has been a shift from CD to deliver research and technology to a focus on enabling innovation.

Current approaches to CD have their roots in two closely related theoretical fields: social learning and innovation systems. Social learning assigns a central role to multi-stakeholder platforms that facilitate interaction and promote learning for change. The facilitator’s role is to help establish these platforms and catalyze dynamics that foster synergy. Innovation systems depend on effective collaboration, networking interdependent social actors and other forms of coordinated action. Innovation is thus a collective achievement, rather than the result of individual adoption. The important role of the former CGIAR Center ISNAR in introducing these lines of thinking has to be highlighted (see Text box). Since its closure and the partial passing of its responsibilities to IFPRI, it has become clear that the domains of ISNAR’s activities are still relevant and have not been taken up sufficiently by other entities.

It is important to note that the evolution of CD approaches in CGIAR occurred at different rates in different Centers, projects and countries. However, the recognition that important learning can occur outside of formal instruction became clearer over time, raising the challenge how to measure the

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<sup>17</sup> Evaluation of Impact and Training in the CGIAR, July 2006. Science Council:  
[http://www.fao.org/sd/erp/documents2009/Evaluation\\_and\\_Impact\\_of\\_Training.pdf](http://www.fao.org/sd/erp/documents2009/Evaluation_and_Impact_of_Training.pdf)

<sup>18</sup> Staiger-Rivas, 2012

quality, relevance, efficiency and effectiveness of non-traditional CD.<sup>19</sup> The outcome orientation of CGIAR puts new demands on CD for partners who will be instrumental in scaling up/out research outputs.

Several unsuccessful attempts by CGIAR Centers to work together on CD have been recently documented.<sup>20</sup> The biggest obstacles, it appears, have been a lack of leadership and support from Center management, difficulties in identifying entry points for collective action and in integrating CGIAR initiatives into existing external programs or organizations.

### ***CD at the International Service for National Agricultural Research (ISNAR)***

In their recent book “Capacity Building for Agricultural Research for Development: Lessons from Practice in Papua New Guinea,” Adiel N. Mbabu and Andy Hall describe ISNAR as follows: “ISNAR was unique in the CGIAR system in that unlike all the other international centres it had an explicit capacity building agenda rather than research (although as will be related, this eroded over time). The institute was also unique in that it was staffed by an eclectic set of professionals: economists, sociologists, human resource specialists, organisational development specialists, research management specialists, evaluators and policy researchers. As a result of this, it drew on professional perspectives outside of agricultural research. Many of these perspectives were already using systems ideas, particularly in the fields of evaluation, and organisational development. So, for example, ISNAR’s capacity development activities were already making use of learning and evaluation as ways of upgrading organisational performance (see Horton et al., 2003). The organisation was also unique in that it was focusing on retooling professional skills of agricultural researchers and research managers to help them cope with the changing context of agricultural development. This led to the rolling development of a series of capacity development modules aimed at helping research staff learn their way into new roles and ways of working.”<sup>21</sup>

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<sup>19</sup> Science Council, 2006

<sup>20</sup> Mehta-Bhatt, P.; Beniast, J. 2011. [Collective action in CGIAR capacity development](#). Capacity Development Unit, International Livestock Research Institute, Nairobi. 85 p.

<sup>21</sup> Mbabu, A.N. & Hall, A. (Eds.). 2012. Capacity Building for Agricultural Research for Development: Lessons from Practice in Papua New Guinea. 274pp. United Nations University-Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT), Maastricht: The Netherlands.

### III. The current state of capacity development in CGIAR

#### Key messages

- Achieving CGIAR's System Level Outcomes will require integrating a range of research areas and involving many new partners; this has implications for the nature of CD in CGIAR.
- Questions about how the CGIAR Research Programs will deal with CD might be addressed by taking a broader view of the Program agendas, specifically the Intermediate Development Outcomes and their related Impact Pathways.

#### Underlying principles and domains

The views of CGIAR Consortium Board on CD, as expressed in the Strategy and Results Framework (SRF), centered on a few principles, notably innovation, partnerships and a community of practice of CGIAR CD experts, educational institutes and the private sector. Achieving CGIAR's System Level Outcomes (SLOs) will require the integration of a wide range of research areas and the involvement of a large number of new partners. This will in turn require a change in the nature of CD from imparting research skills to include more learning-by-doing, testing of new methodologies and participatory approaches. The community of practice would assist CGIAR Research Programs, Centers and partners to undertake more innovative approaches to CD.

The Consortium Office reiterated this view in October 2012<sup>22</sup> when it suggested three domains for CD that are strongly related to CGIAR's objective of delivering development outcomes:

- 1) Capacity for applied or downstream agricultural research for development;
- 2) Capacity to move innovations from the lab into the hands of farmers;
- 3) Capacity to maintain efficient and effective international partnerships.

The choice of these particular domains reflects the fact that CGIAR regards CD as a means to enhance social learning and innovation. The approach enables all partners and stakeholders to enhance their knowledge, attitudes and skills through collaborative research. This includes CGIAR research staff, national research and extension organizations, private sector partners, NGOs and farmer organizations, among others.

#### Capacity development and the CGIAR Research Programs

A review of "Collective Action in CGIAR Capacity Development"<sup>23</sup> noted that virtually all CGIAR Research Programs highlighted CD as an integral part of their research strategy and agenda; most Programs have included a specific chapter or paragraphs dedicated to CD. Nevertheless, there are shortcomings in the way CD is captured in some of these documents, notably:

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<sup>22</sup> Proposed Action Plan to develop a CGIAR Capacity Development and Partnership Development Strategy, Oct. 2012

<sup>23</sup> Mehta-Bhatt, 2011.

- CD strategies are very ambitious and often lack focus or clear priorities. The CGIAR Research Programs tend to list a very broad range of partners and audiences as collaborators or beneficiaries. Attempting to strengthen the capacity of all potential stakeholders is unrealistic, even if in the intention is to do so in collaboration with other CD institutions and providers.
- Most The CGIAR Research Programs see CD as closely linked to other cross-cutting areas, such as partnerships, communication, knowledge management and gender/youth, yet it is often not clearly demonstrated how these areas will interact.
- Most Program proposals list a range of CD activities (e.g. short and long-term courses, workshops, conferences, individual learning, on-the-job-training, farmer field schools, information and knowledge platforms, curriculum development, extension materials, etc). However, they usually do not present these activities within a strategic framework or impact pathway. Some form of coordination and standardization would be useful; this reinforces the need for a community of practice of CD practitioners in CGIAR.

### **Intermediate Development Outcomes**

Mehta-Bhatt and Beniast note that there are still many questions about how the CGIAR Research Programs will deal with CD, individually and collectively, in the future. Some of these questions might be addressed by taking a systematic view of the CGIAR Research Program agenda, specifically the Intermediate Development Outcomes (IDOs) and their related Impact Pathways. The CGIAR Working Group on IDOs has recently communicated guidelines for developing IDOs,<sup>24</sup> which reiterate the Consortium's commitment to a performance management system that emphasizes development results in planning, implementation, learning and reporting. The IDOs will play a critical role in the Consortium, encapsulating the ambition of the CGIAR Research Programs and providing the building blocks for achievement under the Strategic Results Framework.

CGIAR's Independent Science and Partnership Council (ISPC) defines IDOs as:

*"Changes that occur in the medium term that are intended to affect positively the welfare of the targeted population or environment, and which result, in part, from research carried out by the CGIAR and its partners. The intermediate development objectives are attributable to CGIAR Research Programs -level activities and are necessary precursors and logically linked to the SLOs."*<sup>25</sup>

The authors divide Program activities into three categories: research, CD, and engagement. The identification of CD as a key activity reinforces its importance in the SRF, as can be seen in the figure below.

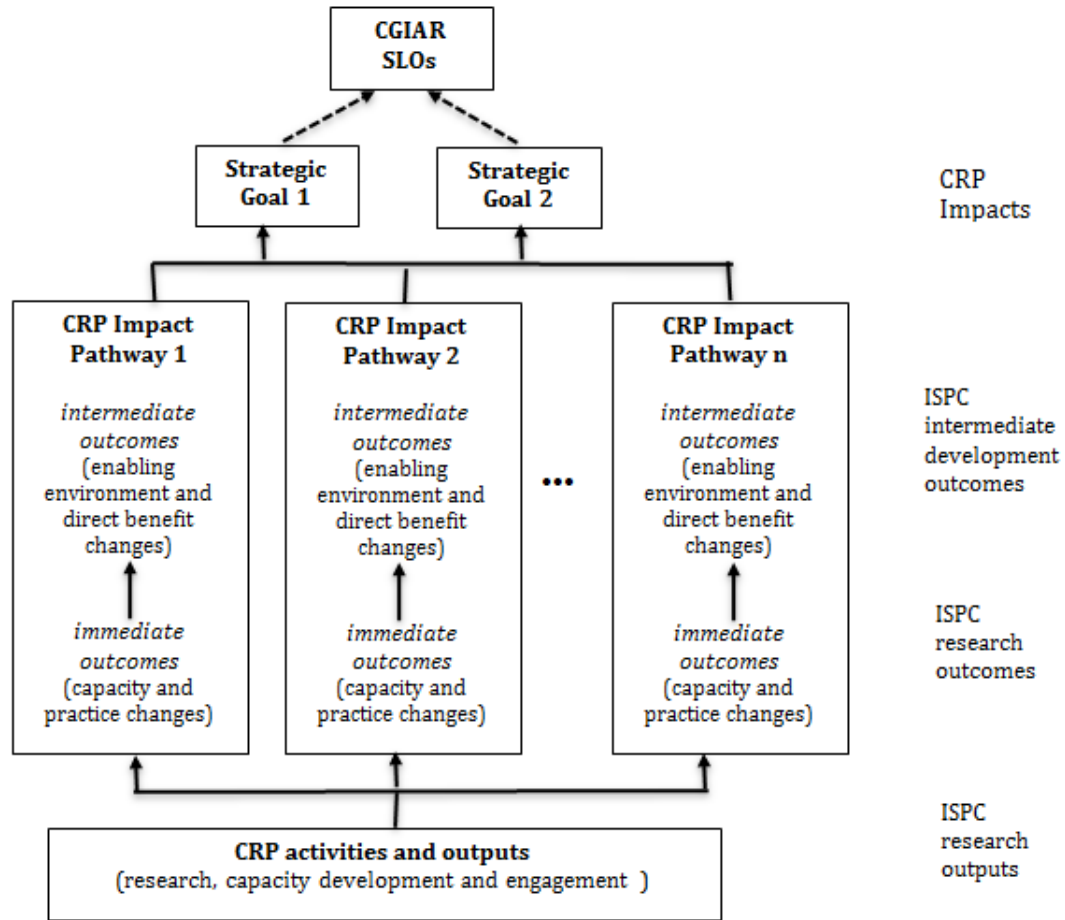
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<sup>24</sup> CRP IDO Working Group (12 February 2013), Guidance on Developing CGIAR Intermediate Development Outcomes

<sup>25</sup> Independent Science and Partnership Council (2012). Strengthening Strategy and Results Framework through prioritization



### A CRP Results Strategy Framework



Linking CD to the CGIAR’s development outcomes underlines the need for multiple actions by many actors, both inside and outside of the Consortium. This focus on ensuring that investments in research lead to tangible development outcomes is commonly known as agricultural research for development (AR4D); the approach has been adopted not only by CGIAR but by many other organizations in the sector as well, such as the Global Forum on Agricultural Research (GFAR), the Forum for Agricultural Research in Africa (FARA), and the Global Conferences on Agricultural Research for Development (GCARD).

### Systems perspectives and innovation thinking

In a recent publication on CD for agricultural research for development,<sup>26</sup> Mbabu and Hall suggest that AR4D’s use of systems perspectives on learning, innovation and change has fundamental implications for the way agricultural research is conducted and the way capacity is built. In AR4D, CD must be able to continuously respond to a changing environment – an orientation that recognizes the systemic nature of the innovation process and makes the link between research and development outcomes explicit and mandatory.

<sup>26</sup> Mbabu, 2012

The authors suggest that the idea of AR4D is anchored in a few key principles that reflect recent thinking on innovation systems and notions of capacity as a systemic phenomenon. These principles include the need for CD to be learning-based and participatory; to be results-driven, explicitly linking research to development; to take a systems view, where research is planned and executed as part of a wider development agenda; to involve partnerships with policy and practice stakeholders; and to be a continuous process of learning, where CD responds to the evolving context of the agricultural sector.

#### **The CCAFS approach: Social learning**

The CGIAR program on Climate Change, Agriculture and Food Security (CAAFS) is working with colleagues and partners to practice communication and social learning on climate adaptation and mitigation at scale, referring to social learning as collective action and reflection that takes place among both individuals and groups when they work to improve the management of the interrelationships between social and ecological systems, taking into account the political, historical and institutional context to determine how social learning processes will translate into outcomes, and successful innovations (or adaptations). CCAFS holds that because “adapting to climate change and developing mitigation strategies are knowledge intensive, our approach to capacity enhancement encourages co-learning between researchers and others, building on and enhancing knowledge and skills through collaboration.” In this context, CCAF’s research theme on “Integration for Decision Making” studies approaches and methods for enhancing links between knowledge and action. The team has explored social learning as an approach to knowledge production and intends to take a leadership role on this line of thinking.

The CGIAR has come a long way towards implementing the AR4D approach through its CGIAR Research Program portfolio and continuing work on Intermediate Development Outcomes. However, most CD efforts in the individual CGIAR Research Programs have not kept pace. Most CD activities are not systemic in nature and continue to largely focus on CD of individuals or individual organizations. Many Programs urgently need to take steps to create the enabling environment and planning tools that allows the right kind of CD to support the achievement of the Intermediate Development and Systems Level Development Outcomes.

## IV. The Role of Training

### Key messages

- Training is highly relevant for strengthening national research and extension capacity; as such, it needs to stay embedded in CGIAR Research Programs.
- CGIAR Research Programs bring new opportunities to raise the visibility and impact of training and to engage in global initiatives and alliances that enable progress in agricultural education.
- CGIAR Research Programs will yield promising research outcomes that have a huge potential to benefit targeted end-users and could be the subject of an intensified CD effort by the Consortium.

### Training in CGIAR

The original CGIAR Centers – IRRI and CIMMYT – were established in the 1960s as research and training organizations. It has long been understood that the effectiveness and impact of CGIAR research depends on the strength of its partnerships, which depends in turn on national capacity. For this reason, CGIAR has made a considerable investment over the years in strengthening the capacity of national partners through formal and informal training and other learning activities. An estimated 80 000 professionals have received training so far in the CGIAR,<sup>27</sup> which spends nearly a fifth of its funds on formal and informal training to help partners boost partner skills and knowledge.<sup>28</sup> Today, training at CGIAR is mostly integrated with research. Training topics emerge from collaborative research and, as a result, remain focused and relevant.

#### Public-private collaboration on CD

The technical and business skills of the small and medium seed enterprises have been identified as a constraint to their efficiency and growth in the sector. As a response, an innovative training program was designed at CIMMYT for mid-level managers of seed companies from 13 African countries, and facilitated by representatives from the public and private seed sectors in Africa. Training methods included simulation games and the development of scenarios and plans derived from the enterprises of participants. Notably, the resource people from the private sector were more than willing to share their experience and successes with smaller competitors.

According to the external evaluation carried out by the Science Council in 2006, training plays an important role in responding to national capacity needs. Evidence from seven country case studies suggests that CGIAR training is a “significant contributor to positive outcomes from research.”<sup>29</sup> The value of training is reflected in the development of research capacity in NARS, the consequent increase in agricultural yields over time and the ability of trainees to continue to respond to new challenges.

However, training alone is not the solution for long-term CD of CGIAR research partners. Starting in the 1990s, a shift in funding and a new research focus on agricultural systems led to a sharp decrease in the number of training staff employed by the

<sup>27</sup> The CGIAR at 40 and Beyond. Impacts that Matter for the Poor and the Planet  
[http://library.cgiar.org/bitstream/handle/10947/2549/cgiar%4040\\_final\\_LOWRES.pdf?sequence=1](http://library.cgiar.org/bitstream/handle/10947/2549/cgiar%4040_final_LOWRES.pdf?sequence=1)

<sup>28</sup> CGIAR Web site: <http://www.cgiar.org/partnerships/> consulted on April, 2, 2013

<sup>29</sup> Science Council, 2006

Centers. Training courses were shorter and focused on the topics of interest to the projects that funded them.<sup>30</sup> Centers and their projects invested more in individual on-the job professional development through fellowships for visiting scientists and opportunities for degree students to conduct thesis research in collaboration with CGIAR scientists. They also began to support informal CD for national partners through collaborative research projects, where the partners worked alongside research leaders from the Centers.

### **Influencing higher education and national agricultural education and training (AET) systems**

A recent review of investment in agricultural education and training (AET) in projects supported by the World Bank in Africa found that the same low level of investment had persisted since the end of the 1970s. One outcome of this low investment in AET, according to the study, has been the marked reluctance of students to choose agriculture as their preferred academic pursuit<sup>31</sup>. It has also prevented the students who do choose agriculture from receiving the education they need to meet the needs of modern farming. The institutional divide between academic departments is a further obstacle to teaching the multi-disciplinary, multi-stakeholder approaches used in innovation systems research. In particular, the divide between biophysical and socio-economic sciences is a constraint.

#### **Cutting edge training at GCP**

The Generation Challenge Program has initiated a three-year course on integrated breeding. One hundred and seventy participants from Africa and Asia are learning how to use modern molecular breeding methodologies and cutting edge bioinformatics tools in their work. Face-to-face coursework is supported by online learning resources available through the Integrated Breeding Program coordinated by GCP. Trainees are given assignments where they practice what they have learned, using data from their current project activities. Successful completion is a prerequisite for admission to the next stage of the training.

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<sup>30</sup> Science Council, 2006

<sup>31</sup> Agricultural Innovation Systems: An Investment Sourcebook. The World Bank, 2012

<http://siteresources.worldbank.org/INTARD/Resources/335807-1330620492317/9780821386842.pdf>

### Curriculum

The findings of a survey and regional workshops on the status of agrobiodiversity education in selected countries in Sub-Saharan Africa and Latin America in 2006 and 2007, pointed at the need for better tools and guidelines for universities.

Bioversity therefore developed a curriculum guide with partners- a flexible tool that could be used according to local needs and settings-, which was and distributed to libraries in 227 universities and to 236 influential individual teachers and agriculture specialists

Serious constraints to quality education and training in developing countries indicate a strong need for a broad reform of national AET systems.<sup>32</sup> Some countries have been able to engage in reforms. In Brazil, this required a 40 year effort to link problem-oriented research centers to local postgraduate programs and international centers, modernize curricula, establish national MSc programs etc.<sup>33</sup> India is currently discussing a reform of its AET system. The Congress on Agricultural Education: Shaping India's Future, which took place in February 2013 in Orissa, India,<sup>34</sup> concluded that the country's agricultural universities have increased in number and size in recent years, but they face a number of common challenges. These include poor governance and a lack of meritocracy; limited national/state coordination; fragmentation among

research, extension and education; inadequate investment and imbalances in resource allocation; a lack of reforms and slow, or no, implementation of the reforms that have been adopted. University leaders attending the conference described curricula and infrastructure outdated and deteriorating in quality at precisely the time that new agricultural experts are needed to deal with tomorrow's challenges. Conference participants developed a roadmap for transforming Indian agricultural education. The roadmap sets out to mobilize cutting edge global knowledge and meet local needs through greater effectiveness and impact of educational institutions and associated research.

Universities and technical colleges are critical in scaling up research outputs in several respects. Universities play a triple role of education, research and outreach, so influencing them can kill three birds with one stone. Graduates bring their competencies to the job market. Working with students and their supervisors often leads to long-term productive partnerships between CGIAR Centers and universities. Staff turnover in universities tends to be lower than in many other government organizations, so capacity often stays in the institution.

As the CGIAR Research Programs further define their role in agricultural higher education, a dialogue between Centers and partners, facilitated by the Consortium Office, could shed light on the best strategies for linking with universities, polytechnics, institutes and colleges in developing countries to improve curricula so that they are better able to respond to emerging challenges, provide fellowships and opportunities for thesis research and the professional development of university staff. There is also scope for working with developed country universities, the private sector and other stakeholders to

<sup>32</sup> The World Bank. 2012.

<sup>33</sup> Agriculture Education and Research in Africa. Peter Materu, Lead Education Specialist AFTED, September, 2010, <http://www.ruforum.org/sites/default/files/file/CHEA/Presentations/055.pdf>

<sup>34</sup> National Academy of Agricultural Sciences, XI Agricultural Science Congress, Bhubaneswar, Orissa: 7-9 February 2013 Agricultural Education: Shaping India's future <http://www.egfar.org/news/transforming-agricultural-education-india>

design professional development opportunities for young and mid-career NARS scientists, provide fellowships and opportunities for thesis research, develop public access teaching and learning materials using information and communications technology. Such efforts would benefit from alliances with research partners, such as CIRAD and EMBRAPA (as has been noted by the Consortium Office), as well as organizations involved in higher education, such as the International Foundation for Science (IFS) and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), and other entities and actors who work on agricultural education and training.

### Visiting researchers

CGIAR has long experience in training MSc and PhD fellows, post-doc programs, visitors and interns. The work of these visiting researchers is tied to specific initiatives and Programs, with field and laboratory work targeting defined project milestones and outputs. They gain knowledge and experience as important members of project teams. Fellows are either drawn from national program teams collaborating on Center research or from open calls. Using fellows from national programs helps build national institutions by exposing young scientists to cutting edge technologies and informatics tools. The student's university supervisors often become long-term research partners.

The challenge to increase food and livestock productivity to meet growing global demand, while, at the same time reducing the impact of agriculture on the environment, will require a new generation of scientists, researchers and policy-makers who are equipped with knowledge and skills in leadership, communications, negotiation, facilitation and management. A recent study by the Young Professionals' Platform for Agricultural Research for Development (YPARD) confirms that employers increasingly demand these skills, which foster active participation in agricultural innovation systems.<sup>35 36</sup> According to the study, today's young professionals consider that they must be able to work across different disciplines and in partnership with different stakeholders, to understand value chains and the potential for profit and entrepreneurship at different points along the chains. According to Adipala and Blackie, "Sustaining socio-economic growth in developing countries in the backdrop of recent economic challenges for nations dependent upon agriculture demands a dynamic human capital: *knowledgeable, flexible, innovative, passionate and able to adapt to technologies to local realities.*<sup>37</sup>

#### Impact at GCP

A fellowship program of Challenge Program on Water and Food that addressed issues of governance enrolled 60 fellows from Mekong region countries who were assigned a mentor each. An evaluation revealed that the initiative has ramped up research outputs, introduced diversity into research, and has exceptionally influenced regional scientists' perception on 'water governance'. Consequently, the CPWF network increased to 60 new partner contacts.

<sup>35</sup> ILRI's Capacity Strengthening Strategy (2009)

<sup>36</sup> YPARD 2012.

<sup>37</sup> Adipala, E. & Blackie, M. 2012. Breaking out of poverty through enhanced scientific networking in Africa: The Regional Universities Forum for Capacity Building in Agriculture. In Second RUFORUM Biennial Meeting Vol. Volume 2, pp. 763-779, 20-24 September 2010, Entebbe, Uganda.

Recent discussions of the CGIAR working group reveal that, as a complement to CGIAR Research Program efforts, a CGIAR post-doc program is welcome for the Consortium to become a player in developing the capacity of the next generation of scientists. Young scientists aiming to work in agricultural science should see CGIAR as the best place to get the training they need, be inspired by innovative ideas and master new technologies. Efforts at the MSc level need equally to be considered to ensure the inclusion of countries with few PhD students. Posting MSc fellows in Centers will make an important contribution to strengthening national research. Effective mentorship should feature highly in CGIAR's efforts to create a pool of innovative and creative researchers who can eventually become scientific mentors themselves. It will be particularly important to develop and explore new approaches to mentorship that respond to the challenges of multi-disciplinary research.

The implementation of a global CGIAR graduate fellowship program requires quality assurance in processes like recruiting, administration, the payment of stipends, mentoring, and monitoring and evaluation of the training programs. CGIAR Research Programs will need to harmonize remuneration, conditions and benefits to avoid competition and the unequal treatment of fellows.

### **Short courses and on-the-job training**

Short courses have been a key element in CGIAR's approach to training for many years. Such courses not only strengthen trainees' knowledge and practical skills, they also provide deep insights into complexity of research management and influence the attitudes, values and motivation of the participants. Trainees serve as an important channel of communication between Centers and national partners and, as such, do much to support and promote the work of CGIAR. The Centers often continue to support former trainees, involving them in collaborative research, providing them with genetic material, publications and support for participation in scientific conferences and meetings. In this, the Centers differ from most other training agencies. Many former trainees reach high professional and political positions in their respective countries and become important Center allies.

#### **Hands-on training**

The BecA-ILRI Hub is world-class biosciences agricultural research facility located at and managed by ILRI in Nairobi, Kenya. Through its capacity development program in form of hands-on training, visits to BecA countries, and fellowships, the Hub strengthens the capacity of scientists and institutions to develop and deliver new technologies to smallholder farmers. Through the Africa Biosciences Challenge Fund (ACBF), early career African scientists receive support for their research.

A reflection at the Consortium level might result in the identification of some common or overlapping training themes of interest to multiple CGIAR Research Programs and the collaborative design of training courses around those themes, to be delivered either by the Centers or by partner organizations.

**Train the trainers:** As the Generation Challenge Program comes to an end, it is essential to ensure that the marker technologies it has developed reach a critical mass of trainees who will be able to access and apply them in their breeding programs. The Program is teaching interested former GCP trainees how to carry out training in their program, institution, country and/or region. This includes awareness training and forming technicians on how to use decision support tools.

Training partners to be AR4D educators is a very cost effective approach to CD. National universities and agricultural research institutes are a major source for current and future generations of researchers, teachers, extension personnel and policy-makers in developing countries and therefore logical partners in CD.<sup>38</sup>

### **Learning resources**

The CGIAR Centers have always produced information, tools and methods as learning resources for national researchers. These include protocols, handbooks, research guides, GIS tools, data portals, e-learning, etc.

In addition to educational materials for national program scientists, the Centers have also produced learning resources targeting extension personnel and farming communities. These include, to mention only a few, farmer participatory videos, produced by farmers to share their own experiences in real time, mobile technology for interacting with farmers, field diagnostics, such as the ‘crop doctors,’ the Crop Genebank Knowledge Base, the Rice and Cereal Knowledge Bank and country knowledge banks, which facilitate knowledge sharing through networks (see text box).

Nevertheless, the limited availability of teaching materials for higher education and on-the-job training of professionals, not to mention training at the community level, is an obstacle to scaling up research outputs. There is a great potential for providing universities with interesting case studies based on CGIAR research. These can serve the rapidly expanding off-campus university education programs as well. These products should be promoted through targeted CD activities and communications activities. Most Centers lack dedicated capacity for instructional design that is required to develop eLearning training courses, but collaborating with organizations that have such expertise can address the problem.

Centers and CGIAR Research Programs now have a major opportunity for identifying the contribution that learning resources can make to the achievement of their development outcomes. The Roots, Tuber and Banana Program, for example, is currently mapping the impact pathways for a series of flagship research products, which will themselves give rise to the development of product-specific learning resources. While this process is primarily the business of each CGIAR Research Programs, the Consortium Office could identify a few research products with a huge potential to benefit end-users and develop a deployment strategy for them. The strategy – executed in partnership- should employ a range of learning resources in different languages, including guidelines, e-learning modules, curricula and

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<sup>38</sup> Ojango, J.M.K., Malfors, B.; Mwai, O. and Philipsson J. (2011). Training the Trainers – An Innovative and Successful Model for Capacity Building in Animal Genetic Resource Utilization in Sub-Saharan Africa and Asia. Nairobi: ILRI and SLU



social media. Ideally, the products should relate to areas of common interest to a number of CGIAR Research Programs. Another useful task would be to pool existing learning resources in an online system with a user-friendly interface and take steps to ensure that the system is both visible and accessible to all potential users.

#### **Knowledge banks<sup>39</sup>**

The concept of country knowledge banks grew out of the success of the Rice Knowledge Bank (RKB), which was launched by IRRI in 2002. Working with national programs in South Asia, IRRI facilitated the development of independent information management and knowledge sharing platforms in Bangladesh, Indonesia, Nepal, Pakistan, Sri Lanka, Tanzania, Thailand, and Vietnam. Each country knowledge bank contains comprehensive information about national research in local languages. Additional countries in the region are in the process of setting up their own knowledge banks, with advice and support from IRRI and CIMMYT.

The achievement of the RKB also prompted an IRRI-CIMMYT project to include maize and wheat information in the RKB, which in January 2008 became the Rice and Cereal Knowledge Bank (RKB/CKB).<sup>40</sup> The RKB/CKB is a digital extension service as well as a comprehensive, digital rice/maize/wheat production library, with fact sheets, practical field diagnosis and management tools, reference manuals, self-paced e-courses and training materials. The ASEAN countries (Association of Southeast Asian Nations) have welcomed the RKB/CKB as a valuable mechanism for sharing information.

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<sup>39</sup> <http://www.knowledgebank.irri.org/>

<sup>40</sup> Rice Doctor (<http://www.knowledgebank.irri.org/RiceDoctor>) ; Maize Doctor (<http://maizedoctor.cimmyt.org>); Wheat Doctor (<http://wheatdoctor.cimmyt.org>)

## V. Strengthening institutional capacity through agricultural research for development

### Key messages

- The requirement to deliver development outcomes is an opportunity for CGIAR Research Programs to build effective CD approaches within collaborative research.
- To meet this challenge, Program staff will need to enhance their own knowledge and skills for AR4D.
- Because partnerships and capacity play an important role in the up- and out scaling of research outputs, we need a better understanding on how research outputs are adopted, transformed and used by stakeholders.
- Strengthening the capacity for influencing policy effectively is another great opportunity for knowledge exchange and learning among members of the Consortium and a domain that CGIAR needs to excel in to make a difference in AR4D.

### The value of strong institutions

A lack of strong institutional capacity is considered one of the main constraints preventing NARS from contributing more strongly to reducing hunger and poverty. Institutional CD can involve improving staff and stakeholder skills, knowledge and experience as well as developing infrastructure, financial resources, organizational culture and learning.

CD has traditionally concentrated on developing the capacity of individuals. However, the effectiveness of researchers depends largely on the institutional capacity. The internal environment influences the capacity of an organization to achieve its goal and mandates. The rationale for strong institutions in

**MIRACLE:** This IITA-led project that uses agricultural innovation to improve productivity and contribute to sustainable livelihoods of people living with HIV/AIDS in southern Africa, facilitated the establishment of 68 community-based innovation platforms in four countries that included local residents, R&D organizations and the private sector. A participatory research and extension approach helped strengthening the platforms and to build the capacity of R&D organizations by involving them directly in implementation, formal and informal training.

AR4D is the notion that it will lead to implementing organizations that are equipped to address challenges and deliver development outcomes. AR4D seeks to build links between research and development outcomes. Therefore CD has implications on all aspects of the organisational development process, from developing agricultural research agenda to the dissemination of research outputs to the end-users, as well as monitoring and evaluating their outcomes.

Key lesson learned on institutional CD for AR4D is that CD needs to be learning-based and participatory, and it involves managing partnerships with all stakeholders. Research needs to be results-driven and explicitly link research to farmers' needs. Finally the CD needs to take a systematic view, and

adaptable to respond to the evolving context of the agricultural sector.

The ability of CGIAR to mobilize partnerships for research-intensive interventions is considered a core capacity and a strategic asset.<sup>41</sup> However, the type of partners and partnerships has evolved over time as CGIAR's research focus expanded to include development.

### Strengthening institutional capacity

Today, there are many opportunities and partnerships supporting institution building for AR4D. Donors are taking a new interest in improving institutional capacity for agricultural research. The US, the European Union, the Bill & Melinda Gates Foundation, Rockefeller Foundation, the UK, Germany, Australia and Japan are very active in this area. The private sector is actively involved in providing services and technical expertise to farmers and is becoming more influential in shaping research priorities.

All CGIAR Centers have, at one time or another, worked through, supported or coordinated networks as vehicles for developing institutional capacity. Multi-stakeholder platforms, which gather a community around a particular issue of common interest, are today a very common approach to AR4D. Including a strong ICT element in these platforms can enable them to provide important services, but they tend to require strong facilitation and can be costly.

Recent discussions in the Consortium concern the need to fully incorporate both outcome and systems thinking in its approaches to institutional CD. To do so means expanding the scope of CD beyond national agricultural research programs to include other AR4D actors, such as organizations that facilitate the dialogue between science and policy, downstream partners, policymakers in the public and private sectors and NGOs. In a review of organisational development experience in agricultural research organisations, Horton (2012) says that: "For agricultural research organisations to shift their focus from doing research to using research to foster innovation, they are likely to need changes in the following areas: strategy formulation; accountability to end-users and beneficiaries; partnership policies; planning and evaluation systems; incentives; administration and finance; and organisational arrangements."<sup>42</sup> This calls for constructive interaction between these actors. Consequently a collective capacity must be built, and the notion of CD is not seen any more as a one-way process, but an outcome of multiple actors working together. This implies adopting new approaches for supporting agricultural development. While strengthening research systems may increase the supply of new knowledge, but it may not necessarily improve the capacity of institutions to

**Learning Alliances:** CIAT and Catholic Relief Services are using learning alliances to facilitate more effective and consistent connections between research and development organizations. Learning alliances differ substantially from typical training practices, involving an iterative learning process by multiple stakeholders, with the aim of improving the innovation capacity of agencies that support farmer associations. Under this approach 33 000 rural families, and approximately 175 000 people, in Central America have been involved.

<sup>41</sup> Ekboir, J.; Sette, C. 2010 Breakthrough partnerships: ILAC's contribution to the change process in the CGIAR

<sup>42</sup> Horton, D. (2012). "Organizational Change for Learning and Innovation". In Agricultural Innovation Systems: An Investment Sourcebook. World Bank: Washington, D.C.

innovate throughout the agricultural sector.<sup>43</sup> CGIAR must give more attention to the development of institutional capacities, linkages and practices that allow knowledge to be put into productive use. New types of institutional processes and skills must be built, if organizations are to learn from their own and others' experiences. This effort may include organizational processes that can promote knowledge sharing and learning to respond to change effectively<sup>44</sup>.

#### **Diagnosis across boundaries**

IITA established a network for the regional surveillance of banana diseases, which includes representatives from national research organizations and national plant protection organizations. The network has shared information on the diagnosis and management of these diseases and has mapped their distribution across locations. The network played a critical role in interpreting and acting on results from the field and laboratory, in increasing awareness and allowing the deployment of management strategies to prevent further spread.

Nevertheless, discussants argue, it is important to establish boundaries, based on CGIAR competencies and comparative advantage, which indicates that Consortium members have still much to learn about choosing the right partners, understanding their needs and ways of working and making appropriate budget allocations to them.

It is said that CD interventions should address management as well as scientific issues, closely linking the research process and development objectives of the various CGIAR Research programs and employing the most appropriate tools and approaches –public-private sector partnerships, innovation platforms, policy forums, farmer participation or competitive

innovation funds<sup>45</sup> – to ensure that the objectives are properly addressed. Relevant stakeholders should be involved in the design and implementation of CD interventions to increase the likelihood of generating impact. Development investments should be tightly linked to impact pathways for specific CGIAR research programs. It is not the role of the Consortium Office to intervene or coordinate the CD activities of the CGIAR Research Programs.

#### **Enhancing collaborative research**

The Global Rice Science Partnership (GRiSP) provides a good example of how to enhance collaborative research through partnerships and CD. While the GRiSP CD strategy concentrates on preparing strong science leaders through short courses and on-the-job-training, such as sabbaticals and internships, the partnership approach brings together around 900 partners in different consortia, platforms, networks, development hubs and time-bound programs and (grant) projects. Those partnership arrangements are

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<sup>43</sup> Rajalahti, R., J. Woelcke, and E. Pehu. 2005. "Development of Research Systems to Support the Changing Agricultural Sector". Proceedings. Agriculture and Rural Development Discussion Paper 14. World Bank, Washington DC

<sup>44</sup> Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems. World Bank, 2006.

<sup>45</sup> CRP IDO Working Group, 2013.

thought to “evolve in size and composition across the impact pathway from product development to having impact at scale.”<sup>46</sup>

The Consortium Office should reflect on the degree to which CD links to other crosscutting disciplines, such as partnerships, knowledge management and gender, and whether there is a need for it to play a coordinating role in assuring cross fertilization and collaboration among these disciplines, which are all highly relevant to research, but differ in terms of scope. For example, gender equity is an outcome or strategic-result for the CGIAR, while CD is a means to an end. And while there is clearly a relationship between CD and strong partnership skills, there are elements of partnership development that are outside the scope of CD.

For the most part, CGIAR has not made much effort to analyze the impact of collaborative research on the development of institutional capacities.<sup>47</sup> Very little can be found, for example, on the role of CD in CGIAR Challenge Programs, although they have been running for ten years. Such an analysis could help the CGIAR Research programs to adopt common principles on how to design, implement, document and assess the impact of CD initiatives on collaborative research. Joint learning on the CD activities in the Programs is very important and a space for discussion is needed on CD theory and practice. This may lead to gains in efficiency, greater visibility of successes and the avoidance of duplications of efforts.

### **Strengthening internal capacity**

Today it is worthwhile to rethink with partners and external education providers the exact set of knowledge, attitudes and skills and processes that are important for development-outcome focused research in CGIAR.

A workshop for the Roots, Tuber and Banana Research Program (RTB) in December 2012 gathered research theme leaders and key staff to discuss gender, CD and knowledge sharing opportunities for the program. Participants shared their priorities for CD and interventions that target CGIAR Research Program staff were mentioned first before the establishment of training activities per research theme and research product.

Recent discussions in CGIAR highlight the need for strengthening internal capacity. Opportunities include inviting post-docs and visiting researchers to the

**Gender:** According to Jacqui Ashby, Senior Advisor, Gender and Research, gender is an important dimension of social inclusion and social equality. Capacity development is needed at three levels:

- 1) Managers need to learn that the impact of agricultural technologies depends on our understanding of social contexts.
- 2) Researchers who need to work closely with experts in gender and social analysis.
- 3) Gender experts in the CGIAR Research Programs, many of whom are at the beginning of their careers, and are in huge demand. We need to provide them with professional development, keep them on the cutting edge and provide them with easy access to outside experts.

<sup>46</sup> GRiSP. 2013. Partnership in motion.

<http://www.grisp.net/uploads/files/x/000/08f/c98/GRiSP%20Partnership%20in%20Motion.pdf?1361448350>

<sup>47</sup> Mehta-Bhatt, 2011

Centers, exchanging staff with other organizations, sabbaticals, hiring new staff, or creating a pool of experts that can be called upon by all CGIAR Research Programs. CGIAR has had success with internal training exercises, including the G&D leadership and diversity training, the leadership development program offered by a group of Centers, or ILAC's facilitation training for participatory decision-making (see Text box).

### **Three experiences of staff development opportunities in the framework of CGIAR-wide programs**

Starting in 1999, the Gender & Diversity program's mission was to help CGIAR Centers to take better advantage of their rich staff diversity in order to increase research and management excellence. G&D held diversity-positive recruitment services, women's leadership courses, multi-cultural mentoring programs and developed inclusive workplace policy models.

The First Level Leadership Development Program, which started in 2005, was based on a training needs analysis undertaken by the Centers that participated in a human resources program of the CGIAR (SAS – HR). The program, delivered more than 10 times for about 140 CG scientists, addressed the leadership challenges faced by staff with responsibilities for managing people and resources in the workplace. Fundamental to the success of the program was the 360° feedback gathered prior to the course.

Between 2005 and 2010, the Institutional Learning and Change Initiative (ILAC) trained more than 160 CGIAR professionals, based mainly in developing countries, in group facilitation skills for participatory decision-making.

## **Scaling up collaborative research**

**Impact Pathways:** The use of participatory impact pathways analysis (PIPA) in the Challenge Program on Water and Food generated important lessons: 1) Identifying key target groups for change is an iterative process; 2) While PIPA is a powerful planning and reflective tool, it is less useful as a monitoring tool. 3) PIPA can help to shift time and resources for M&E, communication and capacity development into earlier stages of the project.

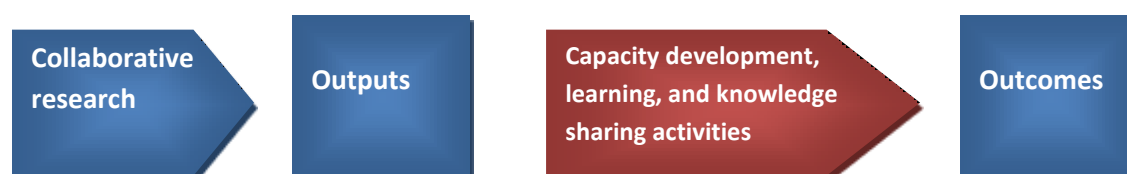
CGIAR's approach to collaborative research reflects the shift in agricultural research and development from a linear model of technology generation and transfer to an innovation system that emphasizes partnerships, participation of stakeholders, and joint learning. CD is also changing to meet the need for not only technical competencies but also skills such as communication, participatory planning, facilitation skills and learning-oriented evaluation.<sup>48</sup>

The development outcome orientation of the CGIAR and the CGIAR Research Programs requires understanding how research outputs are adopted, transformed and used by a

<sup>48</sup> Horton, D. 2012. Organizational change for learning and innovation. In: Agricultural innovation systems. An investment sourcebook. Washington: World Bank.

wide range of stakeholders. Facilitating scaling-up and scaling-out processes and learning from them are critical to delivering development outcomes.

Visions of change are being mapped out in impact pathways but we are only starting to explore how these visions will be achieved. The effort to identify Intermediate Development Outcomes for the CGIAR Research Programs reflects the need to go beyond the assumption that outcomes are directly related to outputs. In fact, the achievement of outcomes often appears to be assumed. In this chapter, we argue that there is a need to ‘invest in the arrows’ that link outputs with outcome, with CD and knowledge sharing playing a key role in this process:



### Investing in activities that lead to outcomes

The CGIAR is increasingly using tools such as Participatory Impact Pathways Analysis (PIPA)<sup>49</sup> and Outcome Mapping<sup>50</sup> to visualize change linked to collaborative research programs and to develop impact pathways. ‘Boundary partner’ is a key concept; it refers to the individuals, groups or organizations or institutions with which a program interacts and hopes to influence. Development outcomes are measured in terms of changes in behavior and relationships among boundary partners. Having mapped out boundary partners and anticipated change, a project or program can then develop the strategies it will employ.<sup>51</sup> This analysis has implications both for the actual collaborative research (such as involving priority boundary partners from the outset), and for the partnerships and processes that contribute to sharing the research outputs – scaling up (institutionalization) and scaling out (adoption) – beyond the project. Of course, numerous other processes may be going on at the same time that are beyond the control of the project, which blurs attribution as time and scale expands.

All CGIAR Centers have, at one time or another, worked through, supported or coordinated networks as vehicles for developing capacity. A more recent approach to developing capacity and promoting knowledge sharing and collaboration is to work through multi-stakeholder platforms, which gather a community around a particular issue of common interest. Including a strong ICT element in these platforms can enable them to provide important services, but they tend to require strong facilitation and can be costly.

<sup>49</sup> Douthwaite B.; Alvarez, BS.; Cook, S, Davies R.; George, P, Howell, J, Mackay R, Rubiano J. 2007. Participatory Impact Pathways Analysis: a practical application of program theory in research-for-development, Canadian Journal of Program Evaluation, 22(2): 127-159

<sup>50</sup> Earl, S.; Carden. F. and Smutylo T. 2001. Outcome Mapping. Building learning and reflection into development programs. IDRC

<sup>51</sup> Smutylo,, T. 2005. Outcome Mapping: A method for tracking behavioral changes in development programs. Rome: Institutional Learning and Change (ILAC) Initiative.

### ***The role of policy influence in scaling up collaborative research***

Policy sets the rules of the game and, as such, the CGIAR needs to influence the policy that constrain or provide a conducive environment for scaling up collaborative research. Evidence-Based Policy (EBP) has been promoted actively in the UK since the mid-90s, and it has been suggested that Evidence-Based Policy can have an even more significant impact in developing countries.<sup>52</sup>

Strengthening the capacity of those involved in the policy making process – whether inside or outside government – to understand research generation processes is a key factor in improving the likelihood of Evidence-Based Policy adoption and success of the policy. In addition, developing countries often lack the intermediary institutions that carry research to policy; Southern countries too seldom share research among themselves<sup>53</sup>.

#### **Bloggng on forest research for policymakers**

With POLEX, CIFOR shows since 1997 that we can reach out to policymakers and their advisers. POLEX is a blog that keeps opinion leaders, policymakers and researchers up to date on path-breaking research on forests. Every month, POLEX reaches about 15,000 stakeholders in the forestry sector worldwide. It is translated into French, Spanish, Indonesian and Japanese. Each message includes a concise

We submit that policymaking is complex and research evidence is often not taken sufficiently into account for a multitude of reasons (e.g. because it is not trusted, late, not timely, not targeted, brought by the wrong people, badly communicated, does not match the needs of policy-actors, etc.). Often, what is missing are quick-footed, nimble, lean inputs that proactively influence and prepare evidence on upcoming issues. Focusing on the right mix of approaches to develop a broad range of research capacities across a broad range of policy actors is likely to be key to helping improve policy (and results) across a range of interlinked themes.

This area is another great opportunity for knowledge exchange and learning among members of the Consortium and a domain

that CGIAR needs to excel in to make a difference in AR4D.

<sup>52</sup> Sutcliffe Sophie and Julius Court, 2005, Evidence-Based Policymaking: What Is It?

<sup>53</sup> Carden, F. 2009. *Knowledge to policy : making the most of development research*. Los Angeles; Ottawa: SAGE ; International Development Research Centre.



## VI. Monitoring and evaluating capacity development

### Key messages

- CGIAR lacks a common framework for monitoring and evaluating its CD activities.
- Despite the challenges involved, it is essential for CGIAR to learn from its successes and failures.
- CGIAR must develop a central system for monitoring and evaluating the inputs, outputs, outcomes and impacts arising from its CD activities.

### The challenges of monitoring and evaluating capacity development

CGIAR's emphasis on the importance of CD has ensured its inclusion in the strategy and budget of every CGIAR Research Program. The targets for the Program CD activities vary widely, from farmers to leaders of national agricultural research systems to policy-makers. The methods of CD range from participatory field demonstrations to highly advanced laboratory sessions.

#### Impact on women's assets

The Gender, Agriculture, and Assets Project (GAAP), led by IFPRI and ILRI, is a four-year training and evaluation initiative being carried out with nine development partners in eight countries. GAAP provides training and support to its partner projects, and uses them as a laboratory for studying the impact of agricultural development projects on women's assets.

Currently, the CGIAR does not have a systematic way of monitoring, tracking, and reporting its CD activities. Merely counting the number of people who attend a training course may not capture the CD by CGIAR researchers at the individual, institutional and system levels. As a result, the assessment of the CGIAR's performance with regard to CD objectives becomes a challenge. More often than not, hurriedly extracting information to meet donors and CGIAR's internal needs does not do justice to the efforts that have been made by our researchers in CD. Furthermore, due to absence of a systematic tracking system, we are not able to

provide even basic information, such as participants list and learning materials used. Given the growth of CGIAR Centers in the last few years and the increased need to show development outcomes, there is a clear and urgent need to document our training and CD efforts in a systematic manner.

Building such a system requires attention to a number of issues and challenges:

- CD is a process, rather than an outcome or an output.<sup>54</sup>
- CGIAR system-level CD needs a fully articulated framework for assessing needs, designing and sequencing appropriate interventions and determining results.<sup>55</sup>

<sup>54</sup> World Bank . 2004. *Capacity Enhancement Indicators; Review of the Literature*. Washington D.C: World Bank (available at: <http://siteresources.worldbank.org/WBI/Resources/wbi37232Mizrahi.pdf>)

<sup>55</sup> World Bank. 2005. *Capacity Building in Africa: An OED Evaluation of World Bank Support*. Washington D.C. World Bank.(available at: [http://lnweb90.worldbank.org/oed/oeddoelib.nsf/24cc3bb1f94ae11c85256808006a0046/5676a297fe57caf685256fdd00692e32/\\$FILE/africa\\_capacity\\_building.pdf](http://lnweb90.worldbank.org/oed/oeddoelib.nsf/24cc3bb1f94ae11c85256808006a0046/5676a297fe57caf685256fdd00692e32/$FILE/africa_capacity_building.pdf))

- The search for quantifiable indicators leads to a focus on easily measured indicators. CD indicators relating to changes in ownership, leadership, and inclusiveness are normally not defined in the monitoring and evaluation systems for research programs.<sup>56</sup>
- Establishing causality and attribution is difficult with respect to tangible CD indicators. Changes in capacity is often due to the interplay of internal and external factors and changing circumstances.
- The definition of CD in CGIAR has hitherto been narrow and largely focused on training and skill development. With such narrow definition, we may lose the larger picture and contributions that we make through research collaboration.
- It is difficult to measure the difference in effectiveness of a two hour training session, a one-week training course or a long term mentoring of a PhD student.

Despite these challenges, it is essential to understand how capacity develops (or how it erodes) by studying CGIAR’s CD efforts. CGIAR must learn from its past successes and failures to ensure that future investments in CD have greater impact and are sustainable and relevant. As donor requests for evidence of impact escalate, the CGIAR Research Programs will greatly benefit from an agile information system that tracks their CD efforts by monitoring inputs, activities, outputs and outcomes.

In addition to maintaining information about all CGIAR Research Programs CD actions, the system should allow access to learning materials produced by the Programs.

**Table X. Monitoring and evaluating capacity development activities**

The table indicates inputs, outputs, outcomes and impacts that may arise from CD. The list is based on discussions with CGIAR Research Program and other project leaders in CGIAR; it is not intended to be exhaustive. Collecting and documenting information on these indicators will be critical for monitoring, reporting and evaluating the impact of CD in CGIAR. Good documentation also recognizes the contributions of researchers to CGIAR’s CD goals.

Level	Inputs <sup>57</sup>	Outputs <sup>58</sup>	Outcomes <sup>59</sup>	Impacts <sup>60</sup>
Individual	Time spent by researchers on CD activities; Non-labor costs of	Number of researchers, analysts and policymakers that can use newly	Higher quality research by collaborators; More relevant	Better program interventions that contribute to poverty reduction, improved food security, and

<sup>56</sup> ADB. 2007. *Integrating Capacity Development into Country Programs and Operations; Medium-Term Framework and Action Plan* (available at: <http://www.adb.org/Documents/Policies/Integrating-Capacity-Development/>)

<sup>57</sup> Inputs are the human and financial resources invested in a capacity development action.

<sup>58</sup> Outputs are the direct results of a capacity development action.

<sup>59</sup> Outcomes are the changes resulting from the outputs. Outcomes are often not realized directly after the completion of a capacity development activity but emerge over time.

<sup>60</sup> The impacts of capacity development are the benefits to the society that result from the outcomes. As with outcomes, impacts emerge over time. However, it is important to estimate the potential outcomes and impacts of a capacity development action in advance to allow for a rigorous impact assessment in future.

	CD (travel, accommodations, facilities, etc)	<p>acquired knowledge;</p> <p>Number of collaborators with improved knowledge of tools and methods for research;</p> <p>Number of student interns, visiting researchers, MA and PhD students trained, guided, and mentored;</p> <p>Number of journal articles published.</p>	<p>research challenges identified and addressed by national collaborators; and policy-makers;</p> <p>Better and more equitable research partnerships with national research and educational institutions.</p>	<p>sustainable agricultural systems;</p> <p>Increased research outputs published by national partners;</p> <p>Stronger national research systems.</p>
Institutional	As above	<p>Effective partnerships with national research organizations;</p> <p>Improved institutional capacity to design and implement research;</p> <p>Improved institutional ability to design, implement, monitor, evaluate and assess the impact of research;</p> <p>Educational and training organizations incorporate case studies from research in their course content and curricula.</p>	<p>Stronger and more strategic research organizations;</p> <p>Better policies that address food security and poverty reduction goals;</p> <p>Increased publication of research results by national policy research and educational institutions</p> <p>More effective use of research results for designing development interventions at the national, sub-regional, regional and global levels;</p> <p>Improved knowledge sharing within research networks;</p> <p>Greater ownership and use of research results and methods for institutional</p>	<p>More relevant priorities set for research institutions, improving their ability to attract funding;</p> <p>Better managed national agricultural systems;</p> <p>Students and researchers learn about research methods and findings at educational and training institutions</p> <p>Joint research products and knowledge are owned and used by national institutions.</p>

			research and education programs.	
System	As above	<p>Stronger capacity of partners at national, and sub-regional, regional and global levels to collaborate on research;</p> <p>Better processes at national, sub-regional, regional and global levels for increasing the use of research results.</p>	<p>National, sub-regional, regional and global research organizations adopt and use research results;</p> <p>Public awareness is raised;</p> <p>New policies are adopted that enable research and development.</p>	<p>Improved policy environment that enables research results to influence policies and programs;</p> <p>Policies and strategies at the national, sub-regional, regional, and global levels that recognize and support research results;</p> <p>Existence of policy documents.</p>

## VII. Opportunities

### Key messages

- People: The future CD network needs broad buy-in, participation of partners, and a comprehensive approach to CD based on a thorough needs assessment.
- Processes: The Consortium Office must facilitate research on CD, and innovative approaches to monitoring and evaluation, documentation and sharing of experiences. CD must be part of CGIAR's advocacy and communications strategy
- Products: The Consortium Office has to explore through the network, the added value of offering CD on themes of interest to multiple CGIAR Research Programs. It should set up a strategy with partners to influence higher education, and must make learning resources more visible and accessible through an on-line information system. A common monitoring and evaluation system of CD needs to be developed.

Throughout this paper we have noted where there are opportunities for making progress with CD at the system level, acknowledging that CD is primarily to be designed and developed in the context of each research program. The CGIAR Research Programs bring new opportunities for raising the visibility and impact of training and engaging in global initiatives and alliances that enable progress in agricultural education and training. Therefore, the Consortium Office can contribute a great deal in making the efforts and achievements of programs in strengthening of stakeholder capacities more prominent. The CD strategy needs to clarify the principles and the way forward for stakeholders so that they know what they can expect while engaging with CGIAR Research Programs. The remainder of the paper describes some key opportunities that merit further discussion. The opportunities concern people, processes and products.

### **People: Capacity development network or community of practice**

The Consortium Office has decided to create a CD network following the examples of other crosscutting areas, such as communications, knowledge management, gender and intellectual property rights. Both CGIAR Research Programs and Centers have expressed interest in forming such a network; however there are different points of view on the degree of formality that is required for it to be functional and useful. The main concerns relate to requirements of participation and the level of hierarchy and administration that might be involved. While some argue for a formal network with dedicated resources, a clear strategy and/or a senior advisory function based at the Consortium Office, others would prefer a looser approach, where knowledge can be exchanged as needed. The inclusion of partners with strong knowledge in the area is recommended.

It will be important that the individual/s tasked with facilitating the network is able to convey a comprehensive vision on CD that includes traditional training approaches, experimental learning, the use of ICTs and multi-media and different partnership arrangements. The network should include staff working directly on CD as well as social scientists, who are concerned with exploring learning and

innovation approaches. The network should have a clear needs assessment approach, its own theory of change and impact pathway. The network members should be able to learn from Centers, partners, and CGIAR Research Programs that are more advanced in this area and it should obviously be closely involved in the Consortium CD strategy development, as well as in engaging with external bodies, such as GFRAS and GFAR, that play a role in CD.

**Processes: Monitoring and evaluation; documentation and sharing of past experiences; research on learning**

As noted in the paper, CGIAR does not yet have a systematic way of monitoring, tracking, and reporting CD interventions. Some Centers and CGIAR Research Programs have made progress and we need to learn from them and mainstream good practices. A good deal of work is needed to develop common indicators for training on the one hand and to explore the best ways to monitor and evaluate CD impact on institutional capacity on the other. Progress in monitoring and evaluation of CD will allow CGIAR to better value the contribution of CD through training and learning interventions.

The review of the few cases included in this discussion paper shows that much can be gained by documenting past experiences, discussing the lessons learned with CGIAR Research Program staff and partners and promoting best practices. The documentation process should include partner's perceptions to capture their views on the effects of the CD interventions, and provide a further opportunity to engage with organizations and initiatives that work on CD issues, advisory services and stakeholder engagement. It seems also necessary to do an assessment of current CD activities at Center and Program levels, including the role of third parties including universities, NGOs, private sector and NARS.

The Consortium Office could facilitate research on CD and learning as a contribution to evolving knowledge about collaborative efforts in AR4D. Research questions could concern issues related to partnership arrangements, institutional CD, the role of impact assessment of CD, whether and how CD supports the achievement of development outcomes; the role of ICTs in agricultural education, extension, farmer mobilization and empowerment; and the best social learning and multi-stakeholder models for a more equitable, sustainable and innovative agriculture.<sup>61</sup>

**Products: CGIAR system-wide CD interventions in partnership**

The network needs to analyze whether it might be relevant to conduct short courses with partners on training themes of interest to multiple CGIAR Research Programs. Those courses could cover training needs for CGIAR Research Program staff in hard skills (i.e. on latest developments in technologies) and soft skills (i.e. on gender, policy influence, leaderships, collaborative work in partnership). Equally the Consortium Office could identify a few research products with a huge potential to benefit end-users and develop a deployment strategy for them. The strategy should employ a range of learning resources in different languages, including guidelines, e-learning modules, curricula and social media. Ideally, the products should relate to areas of interest to a number of CGIAR Research Programs. Another useful

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<sup>61</sup> Pretty, J. et al. The top 100 questions of importance to the future of global agriculture. INTERNATIONAL JOURNAL OF AGRICULTURAL SUSTAINABILITY 8(4) 2010; PAGES 219–236,

approach would be to pool existing learning resources in an online system and take steps to ensure that the system is both visible and accessible to all potential users.

As the CGIAR research programs further define their role in agricultural higher education, a dialogue between Centers and partners, facilitated by the Consortium Office, could shed light on the best strategies for linking with universities, polytechnics, institutes and colleges in developing and developed countries. Such efforts would benefit from alliances with research partners, such as CIRAD and EMBRAPA (as already noted by the Consortium Office), as well as with organizations involved in higher education, such as and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFAE) and other entities and actors that work on agricultural education and training. The Consortium could consider partnering with the International Foundation for Science (IFS) in the strengthening of young scientists' capacity to do research on both old and emerging issues and on implementing participatory, multi-disciplinary research.